

VOLUME 2

**Stream Survey Cards
Thautil River Watershed
1996**

Stream Survey Forms - Explanatory Notes

Data entry of the Stream Survey Cards required certain modifications in order for the data to be explanatory and to correct for inconsistencies between the hard copy and the disk copy. The following is a list of the modifications and some points which are important to note:

- Many of the smaller tributaries which were surveyed in the Thautil R. watershed have no official watershed codes. All tributaries were assigned alphanumeric codes, including those tributaries that do not have watershed codes. In order for the entry of each stream survey form into the program and to distinguish between each tributary, it was necessary to identify each tributary lacking a watershed code by INCORPORATING THE ALPHANUMERIC CODE INTO THE WATERSHED CODE .
- POOL DEPTH METHOD was entered on each stream survey form and is present on the disk copy. The program MISPRINTS this value on the hard copy, PRINTING OUT THE MAXIMUM RIFFLE DEPTH VALUE IN PLACE OF THE POOL DEPTH METHOD.
- When the percentage riffle is entered as 100%, the program prints out this value as 02. In cases WHERE THE PERCENTAGE RIFFLE IS 100%, IT IS ENTERED AS 99% to avoid the printing error. (The remaining 1% is entered into the percentage run category.)
- DEBRIS AREA is divided into categories of 0%, 0-5%, 5-15%, and >15% and the data is entered appropriately into each of these categories. WHEN THE STREAM SURVEY FORMS ARE PRINTED OUT, THE CATEGORIES ARE MISPRINTED AS 0%, 0-10%, 10-40%, AND >40%.
- In the 'Cover' section of the stream survey form, the PERCENTAGE COVER BY BOULDER IS REPRESENTATIVE OF THE PERCENTAGE COVER BY BOULDER/COBBLE. This is due to the importance of cobble cover for the rearing of juveniles.
- BED MATERIAL ENTERED AS HIGH COMPACTION ON THE DISK COPY PRINTS OUT ON THE HARD COPY AS LOW COMPACTION AND VICE VERSA.
- EACH D90 VALUE WHICH IS ENTERED AS LESS THAN 1 CM IS AUTOMATICALLY ROUNDED OFF TO ZERO BY THE PROGRAM.

- In the 'Banks' section, the METHODS PH, TC and CM were added to the list. CM represents a CONDUCTIVITY METER, PH represents a pH METER, and TC represents a CELSIUS THERMOMETER.
- The majority of the tributaries in the Thautil River watershed were given a TURBIDITY VALUE OF 200 CM. This value was not quantitatively measured but was a SET VALUE USED TO REPRESENT GIN CLEAR WATER which was visually observed.
- CREEKS WHICH HAD A TRICKLE FLOW DISCHARGE WERE GIVEN A MINIMUM DISCHARGE VALUE OF 0.01 M³/S even though the flow was presumably less than this value. This was done to prevent a null value when some flow was, indeed, present.
- The majority of the discharge values were visually estimated by experienced field persons. THE METHOD OF DISCHARGE WAS ENTERED IN THE METHOD OF WATER VELOCITY CATEGORY because this was the only place the program would allow the appropriate method, VO (visual observation), to be entered.
- In the Reach Symbol, the FISH SPECIES ABBREVIATIONS WHICH ARE IN BRACKETS ARE ONLY SUSPECTED TO BE PRESENT based on other sampling data or other research previously conducted in the area. NO SAMPLING WAS PERFORMED TO CONFIRM THAT THESE SPECIES ARE PRESENT.
- In the Reach Symbol, the abbreviations NS and NF in the fish species section stand for 'NOT SAMPLED' and 'NO FISH' respectively.
- In the Reach Symbol, the average stream channel width is rounded off to the nearest 1 m. IF THE AVERAGE STREAM CHANNEL WIDTH IS LESS THAN 0.5 M, IT IS GIVEN A VALUE OF ZERO.
- Stream/Valley Cross-Sections were not entered onto the disk copy; if needed, they can be found on the original stream survey cards.
- In the 'Fish Summary' section the abbreviation CHF was added to the list and stands for CHAR FRY. In many of the sample sites, both Dolly Varden and bull trout were present and one cannot distinguish between DV and BT fry. Thus, DV and BT fry were combined as char fry.
- The 'Obstructions' section rounds off the obstruction location to 0.1 km from the mouth and the obstruction height to 1 m. Obstructions less than 1 m are important to fish distribution on smaller systems and are specified in the comment section.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------------|--------------------|---|
| Stream Name: | THAUTIL R | Stream "Local": | THAUTIL R | Access: | II |
| Watershed Code: | 460-6006-508-000-000-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 24.8 Method: MW |
| Location: | INDEX SITE In 1; LOCATED ON MAINSTEM THAUTIL R ~400 m D/S FROM TH1 | Map #: | 093L024 | Site No.: | 1 Length surveyed (m): 240.0 Method: HC |
| | | U.T.M.: | 9.6072 .60096 | Fish Card: | Y Field: Yes Historical: No |
| Date: 10/23/96 | Time: 10:45 | Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ \ \ \ | Photos: | B13/1, 2 Air Photos: BCB 91179:100 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|------|----------|------|---------|------|
| Av. Chan. Width (m): | 53.8 | Method Av. Chan. Width (m): | T | 45.9 | 49.8 | 73.0 | 78.0 | 36.0 | 40.0 |
| Av. Wet. Width (m): | 15.6 | Method Av. Wet. Width (m): | T | 15.6 | 12.0 | 19.2 | | | |
| Av. Max. Rif. Depth (cm): | 46 | Av. Max. Riffle Depth (cm): | MS | 41 | 50 | 46 | | | |
| Av. Max. Pool Depth (cm): | 100 | Av. Max. Pool Depth (cm): | 46 | | | | | | |
| Gradient (%): | 0.8 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 50 | % Run: | 20 | % Other: | 0 | Method: | GE |
| % Side Channel: | >40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 55 | L.O.D.: | 10 | Boulder: | 35 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | SW | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | 10.0 | Method Wetted Width (m) : | T |
| Mean Depth (m) : | 1.0 | Method Mean Depth (m) : | T |
| Mean Velocity (m/s) : | 0.60 | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 6.00 | Method Discharge (m3/s) : | |

Reach Symbol

| |
|--|
| (Fish) |
| SST BT CO MW PL (PK) |
| 54 B 1.0 1360 |
| (Width, Valley: Channel, Slope) (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 1.0 | % Unstable: | 50 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 1.3 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 70 | Method Bars: | GE |
| pH: | 8.5 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GI |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 20 | 68 - 93 | J | R | M | | EL |
| SST | 28 | 33 - 52 | F | R | | | EL |
| BT | 1 | 114 | J | R | M | | EL |
| CO | 2 | 85 - 98 | J | R | M | | EL |
| MW | 1 | 52 | F | R | | | EL |
| PL | 1 | | J | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | | | |

Comments

- C1 ~20 pieces of LOD were found per 100 m of channel.
- C2 High bank erosion was noted on river left of this index site.
- C3 Wetted widths represent the widths of the whole channel. The sidechannel where the index site was performed had wetted widths of 5.0 m, 5.2 m, 5.6 m, 4.1 m, and 5.5 m. The site length was 32 m in length.
- C4 Deep pools unable to measure depth - >1 m.
- C5 Suspected pink salmon spawning in lower Reach 1. 5,000 pink salmon were observed in this section in 1987 (SISS-BC Environment, data on file).
- C6 Air Temp 1 C.

26-Mar-97

Stream: THAUTIL R

460-6006-508-000-000-000-000-000-000-000-000

| | | | | | | | | | |
|------------------------|--|------------------------|---|---------------------------|-----------|-----------------------------|--------------|--------------------|----|
| Stream Name: | THAUTIL R | Stream "Local": | THAUTIL R | Access: | 11 | | | | |
| Watershed Code: | 460-6006-508-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 24.8 | Method: | MW | | |
| Location: | INDEX SITE In 2; LOCATED ON MAINSTEM THAUTIL R. ~300 m BELOW TH10. | Map #: | 093L024 | Site No.: | 2 | Length surveyed (m): | 100.0 | Method: | HC |
| | | U.T.M.: | 9.6061 .60153 | Fish Card: | Y | Field: | Yes | Historical: | No |
| Date: 10/23/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD/CP \ \ \ \ \ \ \ \ | Photos: | A14/23-25 | Air Photos: | BCB 91180:15 | | |

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|------|------|------|-----|
| Av. Chan. Width (m): | 57.0 | Method Av. Chan. Width (m): | AP | 60.0 | 90.0 | 60.0 | 42.0 | 33.0 | |
| Av. Wet. Width (m): | 6.3 | Method Av. Wet. Width (m): | T | 4.7 | 4.9 | 3.8 | 7.1 | 8.3 | 8.8 |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 38 | Av. Max. Pool Depth (cm): | 11 | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 40 | % Run: 40 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | >40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

| | | | |
|---------------------------|----|------------------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 15 |
| % Larges: | 75 | Small cobble (64-128mm): | 50 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 19 | Compaction: | Medium |

| | | | | | | | | |
|-----------------------------|----|------------------------------|-----------------|-----------------|------------------|-----------------------|-----------------|---|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | | |
| Dp Pool : 15 L.O.D.: | 10 | Boulder: 70 | In Veg.: | 0 | Over Veg: | 0 | Cutbank: | 5 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | SW | Method Aspect: | AE | |

| | | |
|---------------------------------|----------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m ³ /s) : | 0.28 | Method Discharge (m ³ /s) : |

| Reach Symbol | (Fish) | |
|--------------|---------------------------------|----------------|
| | SST BT DV (Pl.) | |
| | 57 C 2.0 | 1271 |
| | (Width, Valley: Channel, Slope) | (Bed Material) |

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 100 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.8 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.5 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (umhos): | 60 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 18 | 64 - 133 | J | R | | | EL |
| SST | 46 | 22 - 42 | F | R | | | EL |
| BT | 6 | 54 - 88 | J | R | | | EL |
| DV | 1 | 129 | A | S | | | EL |
| CHF | 4 | 39 - 45 | F | R | | | EL |

Obstructions

Comments

- C1 Wetted widths represent the widths of the sidechannel where the index site was performed, not the widths of the whole river. The site length was 28.1 m in length. Discharge estimate is for sidechannel.
- C2 Sample site located at a wide oxbow section of the river. This index site was not marked with ribbon.
- C3 The DV caught was a mature male. It was not possible to distinguish between the DV and BT fry so they were combined into one group called char fry (CHF). Suspect Pacific lamprey are present in this section; captured in lower R1(Carswell, 1979).
- C4 LOD per 100 m in this section was ~11 pieces.
- C5 Tributaries Th19, Th20, Th24 and Th 29 were ground surveyed and had no defined channel and no potential fish habitat.
- C6 Air Temp 0 C.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 15 | 72 - 120 | J | R | | | EL |
| SST | 10 | 29 - 41 | F | R | | | EL |
| BT | 5 | 69 - 130 | J | R | | | EL |
| BT | 5 | 36 - 51 | F | R | | | EL |
| AF | | | F | | | | VO |

Obstructions

Comments

- C1 Thautil River is at low flows. The wetted widths of the sidechannel where the index site was performed were 6.6 m, 5.1 m, 7.8 m and 5.9 m. The site length was 25 m long.
- C2 Numerous newly-emerged fry were observed in this section. Also, a 30 cm char was observed. The char fry (BT/DV fry) found at this site were assumed to be and were recorded as BT fry.
- C3 Excellent rearing for char/trout in the unembedded cobbles.
- C4 Wide unstable channel. Many unstable banks were noted in this reach. Debris is spread across the bars.
- C5 Tributaries Th32, Th34, Th37, Th40, Th42, Th43 and Th44 were not observed during the Thautil R. ground survey. Tributary Th36 was observed but had no defined channel and was dewatered. The gradient was ~55% with no fish access (Photo A6/16).

26-Mar-97

Stream: THAUTIL R.

Stream Survey Report

Watershed Code:

460-6006-508-000-000-000-000-000-000-000

Header Information

| | | | | | |
|------------------------|---|------------------------|--|-----------------------------|---------------|
| Stream Name: | THAUTIL R. | Stream "Local": | THAUTIL R. | Access: | H |
| Watershed Code: | 460-6006-508-000-000-000-000-000-000-000 | | | Reach No.: | 2 |
| Location: | INDEX SITE in 4; LOCATED ON THE THAUTIL R. JUST ABOVE TH48. | Map #: | 093L044 | Site No.: | 4 |
| | | U.T.M. : | 9.6068 .60291 | Fish Card: | Y |
| Date: 10/22/96 | Time: 16:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ \ \ | Photos: | B11/6, 7 |
| | | | | Air Photos: | BCB 91181-189 |
| | | | | Reach Length (km): | 5.7 |
| | | | | Length surveyed (m): | 280.0 |
| | | | | Method: | MW |
| | | | | Method: | HC |
| | | | | Field: | Yes |
| | | | | Historical: | No |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|-----|------|-----|-----|
| Av. Chan. Width (m): | 9.7 | Method Av. Chan. Width (m): | T | 8.6 | 12.0 | 9.7 | 11.9 | 7.9 | 7.9 |
| Av. Wet. Width (m): | 3.5 | Method Av. Wet. Width (m): | T | 1.8 | 4.6 | 4.0 | | | |
| Av. Max. Rif. Depth (cm): | 19 | Av. Max. Riffle Depth (cm): | MS | 16 | 19 | 21 | | | |
| Av. Max. Pool Depth (cm): | 66 | Av. Max. Pool Depth (cm): | 19 | 78 | 51 | 69 | | | |
| Gradient (%): | 1.7 | Method Gradient: | CL | | | | | | |
| % Pool: 35 | % Riffle: 40 | % Run: 25 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | >40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 60 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 18 | Compaction: | High |

Cover

| | | | | | | | |
|----------------------------|----|------------------------------|-------------------|--------------------|-----------------------|--|----|
| Cover Total % : | 30 | Method Cover Total %: | GE | | | | |
| Dp Pool: 30 L.O.D.: | 10 | Boulder: 30 | In Veg.: 0 | Over Veg: 5 | Cutbank: | | 25 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: | | AE |

Banks

| | | | | | |
|-----------------------------|-----|---------------------------------|-------------------|-----------------|----|
| Height (m): | 0.6 | % Unstable: | 35 | | |
| Textures Fines: | No | Gravel: Yes | Larges: No | Bedrock: | No |
| Confinement: | 4 | | | | |
| Valley: Chan. Ratio: | 3 | | | | |
| Stage: | 1. | | | | |
| Flood Signs Ht(m): | 0.6 | Method Flood Signs: | | GE: | |
| Braided: | Y | Method Braided: | | GE: | |
| Bars (%): | 40 | Method Bars: | | GE: | |
| pH: | 8.0 | Method pH: | | PH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | | | |
| Water Temp. (°C): | 2.5 | Method Temperature: | | TC: | |
| Turb. (cm): | 200 | Method Turbidity: | | GE: | |
| Cond. (µmhos): | 70 | Method Conductivity: | | CM: | |

Discharge

| | | | |
|---------------------------------|------|--|----|
| Wetted Width (m) : | 1.5 | Method Wetted Width (m) : | T |
| Mean Depth (m) : | 0.3 | Method Mean Depth (m) : | MS |
| Mean Velocity (m/s) : | 0.45 | Method Mean Velocity (m/s) | VO |
| Discharge (m ³ /s) : | 0.27 | Method Discharge (m ³ /s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | SST DV |
| 10 C 2.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Stream Survey Report

Watershed Code:

460-6006-508-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|---------------|
| Stream Name: | THAUTIL R | Stream "Local": | UPPER THAUTIL R | Access: | 11 |
| Watershed Code: | 460-6006-508-000-000-000-000-000-000-000 | | | Reach No.: | 2 |
| Location: | INDEX SITE In 5; LOCATED ON THAUTIL R. ~400 m D/S FROM TH50. | Map #: | 093L044 | Site No.: | 5 |
| | | U.T.M.: | 9.6064 .60306 | Length surveyed (m): | 100.0 |
| Date: 10/8/96 | Time: 15:00 | Agency: C58 | Survey Crew: DB\SS\ \ \ \ \ \ | Fish Card: | Y |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Photos: | DB4/11, 12 |
| | | | | Air Photos: | BCB 91181:189 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 6.6 | Method Av. Chan. Width (m): | T | 7.1 | 9.5 | 7.3 | 6.0 | 5.4 | 4.2 |
| Av. Wet. Width (m): | 3.3 | Method Av. Wet. Width (m): | T | 3.5 | 3.1 | 3.0 | 2.9 | 3.2 | 3.8 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 12 | | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | | |
| % Pool: 70 | % Riffle: 30 | % Run: 0 | % Other: 0 | Method: | GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | |
| Dp Pool: 0 | L.O.D.: 5 | Boulder: 80 | In Veg.: 0 | Over Veg: 10 | Cutbank: 5 | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect: SW | Method Aspect: AE | | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.14 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | SST DV |
| 7 B 0.5 | 0370 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.0 | % Unstable: | 25 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.7 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R.

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 10 | 29 - 38 | F | R | | | EL |
| SST | 16 | 61 - 109 | J | R | | | EL |
| DV | 8 | 70 - 87 | J | R | | | EL |
| DV | 1 | 44 | F | R | | | EL |

Obstructions

Comments

- C1 Unembedded bed material provide high suitability for spawning and rearing throughout this reach. Low densities of SST fry were observed between Th47 and Th49. Higher densities were observed ~Th49 and u/s.
- C2 Electrofished 33 m length of stream. The char fry was recorded as DV fry although unable to distinguish between BT and DV fry.
- C3 Air Temp: 1 C.
- C4 Several SST redds were observed: 1 redd (2.0 m x 0.8 m) ~98 m u/s from Th48; 1 recent SST redd ~640 m u/s from Th49 (Photo B11/#14); 2 BT redds ~780 m u/s from Th49; 1 BT redd ~890 m u/s from Th49. Stable flows through this section due to extensive subsurface flows through porous gravel material.
- C5 Numerous DV redds were observed: 3 DV redds ~790 m u/s of Th49; 3DV redds ~1035 m u/s of Th49; 4 DV redds ~1800 m u/s of Th49; 4 DV redds ~2323 m u/s of Th49.
- C6 303 m u/s from Th48: 10 m high x 20 m eroding bank (Photo B11/#10). ~ 650 m u/s from Th49: 10 m high x 40 m eroding bank (Photo B11/#13). ~640 m and u/s: eroding banks up to 10 m high on numerous outside bends.
- C7 650 m u/s from Th50, gradient of mainstem Thautil R. is ~0.5%. Channel is unconfined with unstable gravels present.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 10 | 67 - 105 | J | R | | | EL |
| SST | 50 | 29 - 41 | F | R | | | EL |
| DV | 1 | 115 | J | R | | | EL |
| DV | 2 | 34 - 44 | F | R | | | EL |

Obstructions

Comments

- C1 Index site was 22 m in length.
- C2 Fry and juveniles quite visible in site. Steelhead fry were newly-emerged (28 - 31 mm). Good juvenile and fry habitat; abundant cover from cobbles and margin areas.
- C3 Important spawning and rearing area.
- C4 Char fry (DV/BT fry) were recorded in the DV fish species category.
- C5 Noted flows were exceptionally low in this reach given the size of the watershed. Tributaries entering the Thautil R. also had substantial flow relative to the Thautil R. discharge downstream. Suspect that there is considerable subsurface flow through the gravel material.
- C6 In Reach 2, the channel meanders and is confined within a pine ridge bank. Further up grassy meadows lie along the mainstem edge with the channel remaining well-defined.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------------------|-----------------------------|-------------|--|-------------------|-----------------|-----|---|-----|--|--|---------------------|---------------------------|----------------------|------------|-----------------------------|------------|-------------------|-------------------------|-----------------------|-----|-------------|-------------------|--|----------------------------|----------------------------|---|-----|-----|--------------------|------|---------------------------|-----|---------------------------|----|--|-------------|--------------|--------------|----|--|--------|--|---------------------------|----|---------------------------|------|---------------------------------|----------------|----|--|--|--|--------------------|-----|---------------------|----|----------|---|-----------------|----|-----------|----|--------------|--------------|-----------|------------|------------|----|-----------|--|--------------------------|--|-------------------|-----|----------------------|----|-------------|-----|-------------------|----|----------------|----|----------------------|------|---------------------|----|--|--|--|--|--|--|---|--|--|--|--|--|-----------------|---|-----------------|---|------------|----|-----------------|---|--|--|------------------|----|-----------|----|--------------------------|----|--|--|---------------------------|----|--|--|--------------------------|----|------------|---|------------|---|-----------|----|-------------|------|
| Stream Name: THAUTIL R | | | | Stream "Local": UPPER THAUTIL R | | | | Access: 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-000-000-000-000-000-000-000 | | | | Map #: 093L044 | | | | Reach No.: 3 Reach Length (km): 3.7 Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: LOCATED 2250 m U/S IN REACH 3. | | | | U.T.M.: 9.6088 .60328 | | | | Site No.: 1 Length surveyed (m): 100.0 Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/15/96 Time: 11:00 Agency: C58 Survey Crew: DB\CP \ \ \ \ \ | | | | Fish Card: N Field: Yes Historical: No | | | | Photos: DB4/19, 20 Air Photos: BC 7326:148 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="6">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>5.0</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>5.8</td> <td>5.4</td> <td>4.8</td> <td>6.3</td> <td>3.9</td> <td>4.0</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>2.5</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>2.5</td> <td>2.3</td> <td>2.8</td> <td>2.8</td> <td>2.6</td> <td>2.2</td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>15</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td>18</td> <td>10</td> <td>18</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>28</td> <td>Av. Max. Pool Depth (cm):</td> <td>15</td> <td>30</td> <td>25</td> <td>30</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gradient (%):</td> <td>5.5</td> <td>Method Gradient:</td> <td>CL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% Pool: 10</td> <td>% Riffle: 70</td> <td>% Run: 20</td> <td>% Other: 0</td> <td colspan="6">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>% Debris Area:</td> <td>0-10</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | | | | | Av. Chan. Width (m): | 5.0 | Method Av. Chan. Width (m): | T | 5.8 | 5.4 | 4.8 | 6.3 | 3.9 | 4.0 | Av. Wet. Width (m): | 2.5 | Method Av. Wet. Width (m): | T | 2.5 | 2.3 | 2.8 | 2.8 | 2.6 | 2.2 | Av. Max. Rif. Depth (cm): | 15 | Av. Max. Riffle Depth (cm): | MS | 18 | 10 | 18 | | | | Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 15 | 30 | 25 | 30 | | | | Gradient (%): | 5.5 | Method Gradient: | CL | | | | | | | % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>0</td> <td>% Fines (<2mm):</td> <td>0</td> </tr> <tr> <td>% Gravels:</td> <td>20</td> <td>Small (2-16mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>20</td> </tr> <tr> <td>% Larges:</td> <td>80</td> <td>Small cobble (64-128mm):</td> <td>20</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>30</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>30</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>40</td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | | | | | % Fines (<2mm): | 0 | % Fines (<2mm): | 0 | % Gravels: | 20 | Small (2-16mm): | 0 | | | Large (16-64mm): | 20 | % Larges: | 80 | Small cobble (64-128mm): | 20 | | | Large cobble (128-256mm): | 30 | | | Boulder cobble (>256mm): | 30 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 40 | Compaction: | High |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 5.0 | Method Av. Chan. Width (m): | T | 5.8 | 5.4 | 4.8 | 6.3 | 3.9 | 4.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 2.5 | Method Av. Wet. Width (m): | T | 2.5 | 2.3 | 2.8 | 2.8 | 2.6 | 2.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 15 | Av. Max. Riffle Depth (cm): | MS | 18 | 10 | 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 15 | 30 | 25 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 5.5 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 20 | Small (2-16mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 80 | Small cobble (64-128mm): | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 40 | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>60</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Dp Pool : 0 L.O.D.:</td> <td>25</td> <td>Boulder: 75</td> <td>In Veg.: 0</td> <td>Over Veg: 0</td> <td>Cutbank: 0</td> </tr> <tr> <td>Crown Closure % :</td> <td>20</td> <td>Method Crown Closure:</td> <td>GE</td> <td>Aspect : SW</td> <td>Method Aspect: AE</td> </tr> </tbody> </table> | | | | | | Cover Total % : | 60 | Method Cover Total %: | GE | | | Dp Pool : 0 L.O.D.: | 25 | Boulder: 75 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>60.0</td> <td>% Unstable:</td> <td>25</td> </tr> <tr> <td>Textures Fines:</td> <td>No</td> <td>Gravel: No</td> <td>Larges: Yes</td> <td>Bedrock: Yes</td> </tr> <tr> <td>Confinement:</td> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.5</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>35</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>8.0</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>1.0</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td>60</td> <td>Method Conductivity:</td> <td>CM</td> </tr> </tbody> </table> | | | | | | Height (m): | 60.0 | % Unstable: | 25 | Textures Fines: | No | Gravel: No | Larges: Yes | Bedrock: Yes | Confinement: | 2 | | | | Valley: Chan. Ratio: | 1 | | | | Stage: | M | | | | Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 35 | Method Bars: | GE | pH: | 8.0 | Method pH: | PH | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 1.0 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | 60 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool : 0 L.O.D.: | 25 | Boulder: 75 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 60.0 | % Unstable: | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | No | Gravel: No | Larges: Yes | Bedrock: Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 35 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 8.0 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 1.0 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | 60 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="4">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m) :</td> <td>Method Wetted Width (m) :</td> <td colspan="4"></td> </tr> <tr> <td>Mean Depth (m) :</td> <td>Method Mean Depth (m) :</td> <td colspan="4"></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> <td colspan="3"></td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.26</td> <td>Method Discharge (m3/s) :</td> <td colspan="3"></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | | | Wetted Width (m) : | Method Wetted Width (m) : | | | | | Mean Depth (m) : | Method Mean Depth (m) : | | | | | Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | Discharge (m3/s) : | 0.26 | Method Discharge (m3/s) : | | | | <table border="1"> <tbody> <tr> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2">DV</td> </tr> <tr> <td>5 A 6.0</td> <td>0280</td> </tr> <tr> <td>(Width, Valley: Channel, Slope)</td> <td>(Bed Material)</td> </tr> </tbody> </table> | | | | | | (Fish) | | DV | | 5 A 6.0 | 0280 | (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.26 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 A 6.0 | 0280 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 70 - 97 | J | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | F | |
| | 3 | C | |

Comments

- C1 GPS Lat/Lon at helicopter landing site: 54 25.93 127 19.46
- C2 2 m falls located ~100 m d/s of TH52. 3 m chute located ~250 m d/s of TH52.
- C3 Banks become more confined and gradient increases in Reach 3. Many ~0.5 m drops in log steps in the lower half of Reach 3 were observed. In the upper end of Reach 3, some cascades were observed but none appeared to be barriers.
- C4 Electrofished 38 m length of stream, 1 pass with no lower net.
- C5 Air Temp: - 3 C.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R | Stream "Local": | UPPER THAUTIL R | Access: | 11 |
| Watershed Code: | 460-6006-508-000-000-000-000-000-000-000-000 | Reach No.: | 4 | Reach Length (km): | 1.5 Method: MW |
| Location: | LOCATED ~1350 m U/S IN REACH 4. | Site No.: | 2 | Length surveyed (m): | 75.0 Method: IIC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6105 60342 | Photos: | A13/9, 10 Air Photos: BC 7326:149 |
| Date: 10/15/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD\SS\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.7 | Method Av. Chan. Width (m): | T | 0.6 | 0.7 | 0.9 | 0.9 | 0.4 | 0.5 |
| Av. Wet. Width (m): | 0.7 | Method Av. Wet. Width (m): | T | 0.6 | 0.7 | 0.9 | 0.9 | 0.4 | 0.5 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 23 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|----------------------|----|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | |
| Dp Pool : 15 L.O.D.: | 5 | Boulder: 30 | In Veg.: 0 | Over Veg: 10 | Cutbank: | 40 | |
| Crown Closure % : | 3 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: | AE | |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| I B 4.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 70 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.6 | % Unstable: | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 4 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 50 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 3 | 62 - 99 | J | R | | | EL |

Obstructions

Comments

- C1Sample site was 32 m in length. Electroshocked site with 1 u/s pass and no lower net.
- C2Channel is confined due to 2.5 m high sideslopes from meadow. Lots of willow overstory.
- C3Very small creek. Main flow comes from TH55.
- C4Suspect fish use may extend from 500 - 900 m u/s with a barrier above 900 m based on contours. Not able to sample or determine total fish distribution due to snow.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-093-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|---------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH1 | Access: | FT |
| Watershed Code: | 460-6006-508-093-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | LOCATED ~200 m U/S FROM THAUTIL R. - TH1 CONFLUENCE | Site No.: | 1 | Length surveyed (m): | 580.0 Method: HC |
| | | Map #: | 93L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.607281 6009825 | Photos: | A1/#3 Air Photos: BCB 91179:100 |
| Date: 9/12/96 | Time: 14:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.2 | Method Av. Chan. Width (m): | T | 2.9 | 2.4 | 1.9 | 1.7 | 2.3 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 16 | Av. Max. Pool Depth (cm): | 7 | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | |
|----------------------|----|-----------------------|------------|----------------|------------|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | |
| Dp Pool : 10 L.O.D.: | 20 | Boulder: 70 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | |
| Crown Closure % : | | Method Crown Closure: | Aspect : W | Method Aspect: | AE | | | |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.07 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| TR | |
| 2 A 9.0 | 0190 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 90 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 60 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-093-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| IR | 1 | | F | R | | | VO |

Obstructions

Comments

- C1 Small stable stream, LOD abundant, very entrenched, and moderate gradient.
- C2 Easy fish access at the confluence through a small beaver dam complex. Trib is a cobble/gravel fan for ~70 m u/s, then becomes confined with ~50% sideslopes and an 8 - 10% gradient. No access above 270 m due to a 0.4 m debris jam and a 30 - 40 % gradient which continues until the reach break at ~580 m. Assume fish use to 100m. Class S6 u/s based on fish sample results.
- C3 Some evidence of unstable sideslopes in R1 and R2.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-093-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|--|--|-----------------------------|--|-----------------------------------|--|---------------------------|--|--------------------------|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | THI | | Access: | | F1 | |
| Watershed Code: | | 460-6006-508-093-000-000-000-000-000-000 | | | | | | Reach No.: | | 2 | |
| Location: | | LOCATED ~200 m D/S FROM ROAD CULVERT | | Map #: | | 093L024 | | Site No.: | | 2 | |
| | | | | U.T.M.: | | 9.607281.6009825 | | Fish Card: | | N | |
| Date: 9/13/96 | | Time: 10:00 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | | Photos: | | A1/4, 5 | |
| | | | | | | | | Air Photos: | | BCB 91179.101 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 2.3 | | Method Av. Chan. Width (m): | | T | | % Fines (<2mm): | | 10 | |
| Av. Wet. Width (m): | | 1.9 | | Method Av. Wet. Width (m): | | T | | % Gravels: | | 30 | |
| Av. Max. Rif. Depth (cm): | | 7 | | Av. Max. Riffle Depth (cm): | | MS | | Small (2-16mm): | | 15 | |
| Av. Max. Pool Depth (cm): | | 40 | | Av. Max. Pool Depth (cm): | | 7 | | Large (16-64mm): | | 15 | |
| Gradient (%): | | 2.5 | | Method Gradient: | | CL | | % Larges: | | 60 | |
| % Pool: 30 | | % Riffle: 30 | | % Run: 40 | | % Other: 0 | | Method: GE | | | |
| % Side Channel: | | 0-10 | | Method Side Channel: | | GE | | Small cobble (64-128mm): | | 40 | |
| % Debris Area: | | >40 | | Method Debris Area: | | GE | | Large cobble (128-256mm): | | 20 | |
| | | | | | | | | Boulder cobble (>256mm): | | 0 | |
| | | | | | | | | % Bedrock: | | 0 | |
| | | | | | | | | D90 (cm): | | 15 | |
| | | | | | | | | Compaction: | | High | |
| Cover | | | | Banks | | | | | | | |
| Cover Total % : | | 60 | | Method Cover Total %: | | GE | | Height (m): | | 0.8 | |
| Dp Pool: 20 | | L.O.D.: 30 | | Boulder: 40 | | In Veg.: 0 | | Over Veg: 5 | | Cutbank: 5 | |
| Crown Closure % : | | | | Method Crown Closure: | | Aspect: W | | Method Aspect: | | AE | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | Textures Fines: | | Yes | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | Confinement: | | 2 | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | Valley: Chan. Ratio: | | 2 | |
| Discharge (m3/s) : | | 0.04 | | Method Discharge (m3/s) : | | | | Stage: | | M | |
| | | | | | | | | Flood Signs Ill(m): | | 0.2 | |
| | | | | | | | | Braided: | | N | |
| | | | | | | | | Bars (%): | | 5 | |
| | | | | | | | | pH: | | Method pH: | |
| | | | | | | | | O2 (ppm): | | Method Dissolved Oxygen: | |
| | | | | | | | | Water Temp. (°C): | | 9.9 | |
| | | | | | | | | Turb. (cm): | | 200 | |
| | | | | | | | | Cond. (µmhos): | | Method Conductivity: | |
| Reach Symbol | | | | (Fish) | | | | | | | |
| | | | | NF | | | | | | | |
| | | | | 2 B 3.0 1360 | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-093-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | | X | |

Comments

- C1 Set 6 traps at road and no fish were caught.
- C2 Reach 2 is confined by steep sidewalls. The trib is primarily low gradient fish habitat which is mainly single channel. Sections are present with potential spawning for trout/coho species.
- C3 Easy access for juveniles and fry through road culvert.
- C4 Some evidence of unstable sideslopes in R1 and R2.
- C5 Impassable debris jam is present ~620 m d/s from road.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-093-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|-----------------------------------|--|--------------------------|--|---------------------------|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH1 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-093-000-000-000-000-000-000-000 | | | | | | Reach No.: | | 3 | |
| Location: | | MINNOW-TRAPPED MEADOW, ~900 m U/S FROM ROAD | | Map #: | | 093L024 | | Site No.: | | 3 | |
| | | | | U.T.M.: | | 9.607281.6009825 | | Fish Card: | | N | |
| Date: 10/21/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | | Photos: | | A14/9, 10 | |
| | | | | | | | | Air Photos: | | BCB 91179:102 | |
| Channel Characteristics | | | | | | Specific Data | | Bed Material | | | |
| Av. Chan. Width (m): | | 0.3 | | Method Av. Chan. Width (m): | | T | | % Fines (<2mm): | | 100 | |
| Av. Wet. Width (m): | | 0.3 | | Method Av. Wet. Width (m): | | T | | % Gravels: | | 0 | |
| Av. Max. Rif. Depth (cm): | | | | Av. Max. Riffle Depth (cm): | | MS | | Small (2-16mm): | | Large (16-64mm): | |
| Av. Max. Pool Depth (cm): | | 40 | | Av. Max. Pool Depth (cm): | | | | % Large: | | 0 | |
| Gradient (%): | | 1.0 | | Method Gradient: | | CL | | Small cobble (64-128mm): | | Large cobble (128-256mm): | |
| % Pool: 20 | | % Riffle: 0 | | % Run: 80 | | % Other: 0 | | Method: GE | | Boulder cobble (>256mm): | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | % Bedrock: | | 0 | |
| % Debris Area: | | 0 | | Method Debris Area: | | GE | | D90 (cm): | | 0 | |
| | | | | | | | | Compaction: | | Medium | |
| Cover | | | | | | | | Banks | | | |
| Cover Total % : | | 40 | | Method Cover Total %: | | GE | | Height (m): | | 0.0 | |
| Dp Pool: 10 | | L.O.D.: 0 | | Boulder: 0 | | In Veg.: 90 | | Over Veg: 0 | | Cutbank: 0 | |
| Crown Closure % : | | 0 | | Method Crown Closure: | | GE | | Aspect: W | | Method Aspect: AE | |
| | | | | | | | | Height (m): | | 0.0 | |
| | | | | | | | | % Unstable: | | 0 | |
| | | | | | | | | Textures Fines: | | Yes | |
| | | | | | | | | Gravel: | | No | |
| | | | | | | | | Larges: | | No | |
| | | | | | | | | Bedrock: | | No | |
| | | | | | | | | Confinement: | | 5 | |
| | | | | | | | | Valley: Chan. Ratio: | | 4 | |
| | | | | | | | | Stage: | | L | |
| | | | | | | | | Flood Signs Ht(m): | | 0 | |
| | | | | | | | | Method Flood Signs: | | GE | |
| | | | | | | | | Braided: | | N | |
| | | | | | | | | Method Braided: | | GE | |
| | | | | | | | | Bars (%): | | 0 | |
| | | | | | | | | Method Bars: | | GE | |
| | | | | | | | | pH: | | Method pH: | |
| | | | | | | | | O2 (ppm): | | Method Dissolved Oxygen: | |
| | | | | | | | | Water Temp. (°C): | | 1.0 | |
| | | | | | | | | Method Temperature: | | IC | |
| | | | | | | | | Turb. (cm): | | 200 | |
| | | | | | | | | Method Turbidity: | | GE | |
| | | | | | | | | Cond. (µmhos): | | 60 | |
| | | | | | | | | Method Conductivity: | | CM | |
| Reach Symbol | | | | | | | | | | | |
| | | | | | | (Fish) | | | | | |
| | | | | | | NF | | | | | |
| | | | | | | 0 D 1.0 | | F | | | |
| | | | | | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-093-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C4 Tributary Th1.2 is a very small seepage channel with very poor fish habitat. Tributary Th1.3 is located in a bog area with no defined channel.
- C1 Large meadow area, no defined channel.
- C2 5 minnow traps were set at this site for a 24 h. period. No fish were caught but 5 tadpoles and 2 Western Spotted Frogs were caught.
- C3 In Reach 4 u/s, the tributary exiting the lake has a low to moderate gradient with an estimated wetted width of 1.5 m.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-141-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|--|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH2 | Access: | V2 |
| Watershed Code: | 460-6006-508-141-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | ~165 m U/S FROM TH2 - THAUTIL R. CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 320.0 Method: HC |
| | | Fish Card: | Y | Field: | Yes Historical: No |
| Date: 9/13/96 | Time: 15:00 | Agency: C58 | Survey Crew: SSUH \ \ \ \ \ \ \ \ | Photos: | B1/16; B3/18 Air Photos: BCB 91179.100 |
| | | Map #: | 0931.024 | | |
| | | U.T.M.: | 9 6059 60105 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.7 | 1.5 | 1.4 | 1.2 | 1.5 | 2.1 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.7 | 1.5 | 1.4 | 1.2 | 1.0 | 1.2 |
| Av. Max. Rif. Depth (cm): | 14 | Av. Max. Riffle Depth (cm): | T | | | | | | |
| Av. Max. Pool Depth (cm): | 38 | Av. Max. Pool Depth (cm): | 14 | | | | | | |
| Gradient (%): | 6.6 | Method Gradient: | CL | | | | | | |
| % Pool: 60 | % Riffle: 40 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 40 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 20 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Cover

| | | | |
|-------------------|------------|-----------------------|-------------------|
| Cover Total % : | 50 | Method Cover Total %: | GE |
| Dp Pool : 30 | L.O.D.: 40 | Boulder: 5 | In Veg.: 0 |
| Crown Closure % : | 30 | Method Crown Closure: | GE |
| | | Aspect : SE | Method Aspect: AE |
| | | Over Veg: 15 | Cutbank: 10 |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | |

Specific Data

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | MS |
| Cond. (µmbos): | | Method Conductivity: | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV RB | |
| 2 B 7.0 | 4420 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| RB | 7 | 39 - 48 | F | R | | | EL |
| DV | 1 | 83 | J | R | | | EL |

Obstructions

Comments

- C1 In Reach 1, electroshocked for ~100 m of stream length at two different locations with no lower net. Species were identified as RB (instead of SST) based on spotting and faint jaw slashes, and location of the site. A Western Spotted frog tadpole was also caught at this site.
- C2 Reach 2 was observed at the road (Photo B2/#3). Although there was no defined channel, a sample site was performed and no fish were caught (Photo B3/18).
- C3 ~860 m d/s from the road in Reach 2, the channel disappears into a wetland (shown on the map) and then reforms a channel at the other end where it exits the marsh. At the confluence with Th2.1, the average wetted width of the channel was 2.2 m. Although no fish were observed, the habitat is complex with potential for fish use. No barriers along the stream were observed.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH -2.1-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|---------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH2.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-141-TH -2.1-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.9 Method: MW |
| Location: | -65 m D/S FROM ROAD CROSSING. | Site No.: | 2 | Length surveyed (m): | 65.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6056 60105 | Photos: | B2/14 Air Photos: BCB 91179:100 |
| Date: | 9/17/96 | Time: | 15:30 | Agency: | C58 |
| | | Survey Crew: | SSUH \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 0.9 | 1.3 | 1.1 | 1.3 | 0.7 | 1.6 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 0.7 | 0.9 | 1.2 | 1.3 | 0.7 | 1.3 |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 27 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 4.8 | Method Gradient: | CL | | | | | | |
| % Pool: | 100 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total %: | 30 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 0 | L.O.D.: | 15 | Boulder: | 0 | In Veg.: | 15 | Over Veg: | 50 |
| Crown Closure %: | 20 | Method Crown Closure: | GE | Aspect: | SE | Method Aspect: | AE | Cutbank: | 20 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 B 5.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 5 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | GE |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 6.5 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH-2 1-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Electrofished 65 m length of stream. No fish were caught.
- C2 At 50 m d/s from road culvert, there is no continuous channel. Flow is intermittent.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-111-2.1-1-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------------|----------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH2.1.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-141-TH-2.1-1-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.6 Method: MW |
| Location: | ~200 m D/S FROM TH2.1 1.1 CONFLUENCE | Site No.: | 3 | Length surveyed (m): | 540.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/13/96 | Time: 13:00 | Agency: C58 | Survey Crew: SSJH \ \ \ \ \ | Photos: | B1/11, 13, 14 Air Photos: BCB 91179:100 |
| | | Map #: | 093L024 | | |
| | | U.T.M.: | 9. 6056 . 60105 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.7 | 1.5 | 1.6 | 2.0 | 1.3 | 1.7 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.0 | 1.1 | 1.2 | 1.6 | 1.3 | 1.5 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 26 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 3.2 | Method Gradient: | CL | | | | | | |
| % Pool: 70 | % Riffle: 20 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 90 | % Fines (<2mm): | 90 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Cover

| | | | |
|------------------------|-------------|-----------------------|---------------------------------|
| Cover Total % : | 80 | Method Cover Total %: | GE |
| Dp Pool: 70 L.O.D.: 20 | Boulder: 10 | In Veg.: 0 | Over Veg: 0 Cutbank: 0 |
| Crown Closure % : | 15 | Method Crown Closure: | GE Aspect : E Method Aspect: AE |

Banks

| | | | |
|----------------------|------|--------------------------|------------------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 5 | | |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.5 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 C 3.0 | 9100 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-111-2,1-1-1-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Low gradient tributary with potentially good fish habitat. Much of the reach d/s from the Th2.1.1 - Th2.1.1.1 confluence is marsh.
- C2 A Western Spotted frog was found in the sample site (Photos B1/13, 14).

DFO/MoELP Stream Survey Form

26-Mur-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH-2.1-1-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R TRIBUTARY | Stream "Local": | TH2.1.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-141-TH-2.1-1-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.6 Method: MW |
| Location: | ~80 m D/S FROM ROAD CROSSING. | Site No.: | 4 | Length surveyed (m): | 90.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9. 6056 . 60105 | Photos: | B2/10, 11 Air Photos: BCB 91179:100 |
| Date: | 9/17/96 | Time: | 15:00 | Agency: | C58 |
| | | Survey Crew: | SSJH \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.2 | 1.3 | 1.2 | 0.7 | 0.8 | 0.9 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.7 | 0.8 | | | | |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 6.7 | Method Gradient: | CL | | | | | | |
| % Pool: | 85 | % Riffle: | 15 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 90 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 15 | Boulder: | 5 | In Veg.: | 45 | Over Veg: | 5 |
| Crown Closure % : | 50 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 B 7.0 | 7120 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 75 | % Fines (<2mm): | 75 |
| % Gravels: | 5 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 20 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|----|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 6.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH -2.1-.1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Appeared to have useable habitat but no fish were present at sample site. Electrofished 35 m length of stream.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH -2.1-.1-.1 -000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------------|-------------|----------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH2.1.1.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-141-TH -2.1-.1-.1 -000-000-000-000 | | | Reach No.: | 1 |
| Location: | ~160 m D/S FROM ROAD CROSSING | Map #: | 093L024 | Site No.: | 5 |
| | | U.T.M.: | | Fish Card: | N |
| Date: 9/13/96 | Time: 12:00 | Agency: C58 | Survey Crew: SSUH \ \ \ \ \ | Photos: | B1/10; B2/4, 5 |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Air Photos: | BCB 91179:100 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 1.2 | 0.8 | 0.8 | 1.9 | 1.5 | 1.1 |
| Av. Wet. Width (m): | 0.7 | Method Av. Wet. Width (m): | T | 0.9 | 0.5 | 0.6 | 0.7 | 1.1 | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 5.5 | Method Gradient: | CL | | | | | | |
| % Pool: 50 | % Riffle: 50 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 10 | L.O.D.: 25 | Boulder: 0 | In Veg.: 0 | Over Veg: 60 | Cutbank: 5 | | | | |
| Crown Closure % : | 35 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 C 6.0 | 8110 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 85 | % Fines (<2mm): | 85 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 5 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 2 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ill(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 6.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-1H-2.1-1.-1 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Tributary was sampled above the road. Electrofished 65 m length of stream. No catch.
- C2 Potentially good habitat for fry but limited habitat for parr.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH-2.1-1.1-2 -000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R TRIBUTARY | Stream "Local": | TH2.1.1.2 | Access: | V2 |
| Watershed Code: | 460-6006-508-141-TH-2.1-1.1-2 -000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.5 Method: MW |
| Location: | 40 m D/S FROM ROAD CROSSING. | Site No.: | 6 | Length surveyed (m): | 50.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/17/96 | Time: 14:30 | Map #: | 093L024 | Photos: | B2/6, 9 Air Photos: BCB 91179.100 |
| Agency: C58 | Survey Crew: SSUH \ \ \ \ \ | U.T.M.: | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.5 | Method Av. Chan. Width (m): | T | 1.3 | 1.6 | 1.0 | 1.8 | 1.2 | 2.2 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.3 | 1.0 | 1.0 | 1.8 | 1.2 | 2.2 |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 26 | Av. Max. Pool Depth (cm): | 3 | | | | | | |
| Gradient (%): | 8.3 | Method Gradient: | CL | | | | | | |
| % Pool: 75 | % Riffle: 25 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|-------------|--------------|-------------------|--|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | |
| Dp Pool: 25 | L.O.D.: 20 | Boulder: 0 | In Veg.: 25 | Over Veg: 25 | Cutbank: 5 | | |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect: SE | Method Aspect: AE | | |

Discharge

| | | | |
|----------------------|----------------------------|--------------------------|--|
| Wetted Width (m): | Method Wetted Width (m): | | |
| Mean Depth (m): | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 B 8.0 | 9100 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 90 | % Fines (<2mm): | 90 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 0 | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-141-TH-2.1-1-2 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 The sample site was 50 m long. No fish were caught.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -3 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|----------------|----------------------|------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH3 | Access: | V2 |
| Watershed Code: | 460-6006-508-TH -3 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | TOP OF REACH 1, ~200 m U/S FROM TH3 MOUTH. | Site No.: | 1 | Length surveyed (m): | 200.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N |
| | | U.T.M.: | 9.6058 .60109 | Field: | Yes |
| Date: | 9/13/96 | Agency: | C58 | Historical: | No |
| Time: | 17:00 | Survey Crew: | JHSS \ \ \ \ \ | Photos: | B1/17, 18 |
| | | | | Air Photos: | BCB 91179:100 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | T | 0.3 | 0.2 | 0.0 | 0.6 | 0.5 | 0.6 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.3 | 0.2 | 0.0 | 0.6 | 0.5 | 0.6 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 18 | % Riffle: | 2 | % Run: | 80 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|------------------|----|-----------------------|----|-----------|----|----------------|----|
| Cover Total %: | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool: | 5 | L.O.D.: | 10 | Boulder: | 0 | In Veg.: | 10 |
| Crown Closure %: | 10 | Method Crown Closure: | GE | Over Veg: | 45 | Cutbank: | 30 |
| | | | | Aspect: | SE | Method Aspect: | AE |

Discharge

| | | | | | |
|----------------------|------|-----------------------------|----|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 0 D 0.5 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|----|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 4 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-111 -3 -000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Channel is lost in grass/alder wetland for most of Reach 1 in the lower section. The tributary is very small, the channel is discontinuous, and it is suspected that it contains no fish habitat. (No fish were observed.) |
| C2 | Reach 2 is ~0.5 km long. The tributary emerges as a seepage from the base of a 25% slope. No channel is present in the gully above. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -3 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------|----------------------|-----------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH3 | Access: | V2 |
| Watershed Code: | 460-6006-508-TH -3 -000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 0.9 Method: MW |
| Location: | -40 m D/S FROM ROAD CULVERT. | Site No.: | 2 | Length surveyed (m): | 60.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N |
| | | U.T.M.: | 9.6058 60109 | Field: | Yes |
| Date: | 9/17/96 | Agency: | C58 | Historical: | No |
| Time: | 16:00 | Survey Crew: | JHUSS \ \ \ \ \ \ \ \ | Photos: | B2/15, 16 |
| | | | | Air Photos: | BCB 91179:100 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.7 | 1.6 | 0.9 | 0.9 | 1.2 | 1.9 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | | |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 2.3 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 15 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 30 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 70 |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.00 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|-----|
| | (Fish) | |
| | NF | |
| 1 | B | 2.3 |
| | F | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | Dry | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2~Mar-9~

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH-3 -000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Channel has no flow with pockets of stagnant water for the first 40 m d/s from the road culvert. Channel goes subsurface between 40 - 60 m d/s of culvert. Above 60 m there is some evidence of a channel but it is discontinuous. |
| C2 | Sample site is the first 40 m of stream going d/s from the culvert. No fish were caught. |

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

460-6006-508-174-000-000-000-000-000-000-000

49

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | | | J | R | S | | VO |
| BT | | | J | R | M | | VO |

Obstructions

Comments

- C1 A sample site was not performed at this site. See trap data u/s. Good habitat for rearing juveniles was present at this site. It is also possible that this could be a coho stream despite very little off-channel habitat.
- C2 This tributary has the potential to move debris.
- C3 Areas of gravels for spawning were present but the majority of the bed material was too large for spawning (cobble).

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|--------------------|--|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH4 | Access: | V2 |
| Watershed Code: | 460-6006-508-174-000-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.4 Method: MW |
| Location: | LOCATED JUST BELOW THE BRIDGE CROSSING | Map #: | 093L024 | Site No.: | 2 Length surveyed (m): 1400.0 Method: HC |
| | | U.T.M.: | 9.6061 60117 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/13/96 | Time: 12:30 | Agency: C58 | Survey Crew: CP/RD \ \ \ \ \ | Photos: | A1/12, 13 Air Photos: BCB 91179:220 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 4.1 | Method Av. Chan. Width (m): | T | 3.5 | 4.3 | 4.3 | 4.5 | 4.1 |
| Av. Wet. Width (m): | 3.6 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 16 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 16 | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | |
| % Pool: 25 | % Riffle: 65 | % Run: 10 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | |

Cover

| | | | |
|------------------------|-----------------------|-----------------------|-------------------------|
| Cover Total % : | 75 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: 20 | Boulder: 60 | In Veg.: 0 | Over Veg: 10 Cutbank: 0 |
| Crown Closure % : | Method Crown Closure: | Aspect: SW | Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.35 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 4 A 5.0 | 0280 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 35 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 23 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 6 | 79 - 127 | J | R | | | MT |
| DV | 2 | 130 - 143 | A | S | | | MT |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 2.3 |
| | 1 | X | 2.4 |
| | 1 | X | 3.3 |

Comments

- C1 The adult DV's which were caught were spawned-out males. Spawning habitat appears to be present but limited.
- C2 Th4 is a large and dynamic creek with potential to move debris. Large amounts of debris were present in the channel and overstory brush (alder swales) was abundant.
- C3 Several drops over debris were observed above the road: 1 m X at ~100 m u/s from road; 0.6 m X every 50 -100 m u/s; 1.1 m X at ~1015 m d/s from road. All drops would be passable during high flows.
- C4 A juvenile DV was observed at 120 m u/s from the road. Another juvenile DV was observed ~1100 m u/s from the road.
- C5 Suspect Th4 is accessible to fish up to the reach break between Reach 3 and Reach 4. The gradient is 15 - 18% in Reach 4.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-174-044-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R TRIBUTARY | Stream "Local": | TH4.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-174-044-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.2 Method: MW |
| Location: | LOCATED ~100 m BELOW ROAD CROSSING. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6063 .60118 | Photos: | A1/7, 8 Air Photos: BCB 91179-220 |
| Date: | 9/13/96 | Time: | 11:00 | Agency: | C58 |
| | | Survey Crew: | CPARD \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.5 | Method Av. Chan. Width (m): | T | 1.6 | 1.5 | 1.1 | 1.5 | 1.6 | 1.5 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.6 | 1.5 | 1.1 | 1.5 | 1.6 | 1.5 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 30 | % Run: | 40 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 25 | % Fines (<2mm): | 25 |
| % Gravels: | 55 | Small (2-16mm): | 25 |
| | | Large (16-64mm): | 30 |
| % Larges: | 20 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 7 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool : | 30 | L.O.D.: | 10 |
| | | Boulder: | 10 |
| | | In Veg.: | 0 |
| | | Over Veg: | 20 |
| | | Cutbank: | 30 |
| Crown Closure % : | | Method Crown Closure: | Aspect : W |
| | | Method Aspect: | AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV |
| 2 A 5.0 | 3520 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-044-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 13 | 82 - 123 | J | R | | | MT |

Obstructions

| Obstruction Ht(m) | Type | Location |
|-------------------|------|----------|
| 0 | CV | 2.2 |

Comments

- C1 Set 2 minnow traps u/s from culvert and 3 traps d/s from culvert. Observed DV while setting the traps.
- C2 Tributary is a small stable system. Heavily overgrown alder swales cover the creek and LOD is present across the channel.
- C3 Sections suitable for DV spawning are present.
- C4 Culvert at road has a 15 cm drop at the mouth with dimensions of 1 m in diameter x 12 m in length. Estimate of 5% slope in culvert and is bent in the middle. May be passable to juveniles but suspect not to fry. (Photo A1/#6)

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-174-044-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R TRIBUTARY | Stream "Local": | TH41 | Access: | V2 |
| Watershed Code: | 460-6006-508-174-044-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.2 Method: MW |
| Location: | LOCATED ~400 m U/S FROM ROAD CROSSING. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6063 60118 | Photos: | A5/10, 11 Air Photos: BCB 91179:220 |
| Date: | 9/23/96 | Time: | 10:00 | Agency: | C58 |
| | | Survey Crew: | CPARD \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.8 | Method Av. Chan. Width (m): | T | 1.8 | 1.5 | 2.5 | 2.9 | 1.0 | 1.3 |
| Av. Wet. Width (m): | 1.8 | Method Av. Wet. Width (m): | T | 1.8 | 1.5 | 2.5 | 2.9 | 1.0 | 1.3 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 40 | % Run: | 30 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 30 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 40 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | W | Method Aspect: | AE | Cutbank: | 30 |

Discharge

| | | | | | | | | | |
|-----------------------|------|------------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) : | VO | | | | | | |
| Discharge (m3/s) : | 0.07 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 2 C 1.5 | 2540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 50 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 30 |
| % Larges: | 35 | Small cobble (64-128mm): | 35 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.9 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-044-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1
- Small, stable creek. Survey was performed above the road to show habitat characteristics: good habitat above the road, fish access at higher flows, and areas of good DV resident spawning are present. Site was not sampled but suspect DV are present due to their presence at site 3 below the road. Classed as S3 habitat to the top of R1.
- C2
- Upper extent of potential fish habitat was observed by helicopter; there appeared to be easy access on Th4.1 to at least the Th4.1.2 confluence.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-044-TH -4.1-.1 -000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH4.1.1 | Access: | F1 |
| Watershed Code: | 460-6006-508-174-044-TH -4.1-.1 -000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.7 Method: MW |
| Location: | LOCATED IN R1 ~240 m D/S FROM ROAD. | Site No.: | 5 | Length surveyed (m): | 600.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6073 .60112 | Photos: | A2/12, 13 Air Photos: BCB 91179:220 |
| Date: | 9/17/96 | Time: | 17:00 | Agency: | C58 |
| | | Survey Crew: | CP/RD \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | |
|---------------------------|-----|-----------------------------|----|
| Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | T |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 2 |
| Gradient (%): | 3.5 | Method Gradient: | CL |
| % Pool: | 40 | % Riffle: | 20 |
| % Side Channel: | 0 | % Run: | 40 |
| % Debris Area: | 35 | % Other: | 0 |
| | | Method: | GE |
| | | Method Side Channel: | GE |
| | | Method Debris Area: | GE |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 95 | % Fines (<2mm): | 95 |
| % Gravels: | 5 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | Medium |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 50 | Method Cover Total %: | GE |
| Dp Pool : | 20 | L.O.D.: | 50 |
| | | Boulder: | 0 |
| | | In Veg.: | 0 |
| | | Over Veg: | 0 |
| | | Cutbank: | 30 |
| Crown Closure % : | | Method Crown Closure: | |
| | | Aspect : | W |
| | | Method Aspect: | AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Specific Data

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | GI: |
| Braided: | N | Method Braided: | GI: |
| Bars (%): | 0 | Method Bars: | GI: |
| pH: | 6.6 | Method pH: | PH: |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC: |
| Turb. (cm): | 200 | Method Turbidity: | GI: |
| Cond. (µmhos): | | Method Conductivity: | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 0 C 4.0 | 9100 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-044-1H-4.1-.1 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction ID(n) | Type | Location |
|-------------------|------|----------|
| 0 | X | 0.1 |

Comments

- C1 Trickle flow in tributary with no well defined banks. Too small to electrofish or trap so no sampling was performed. Suspect fish use in the lower 50 - 100 m of stream. Tributary is very small u/s of 100 m.
- C2 40 cm drop is over a stop log ~ 50 m u/s from mouth.
- C3 Bed material consists primarily of silt and sand. No potential spawning areas were observed.

DFO/MoELP Stream Survey Form

26-Mur-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-TH-4 2-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|---|--|-----------------------------|--|---------------------------------|--|--|--|---|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH4 2 | | Access: | | V2 | |
| Watershed Code: | | 460-6006-508-174-TH-4 2-000-000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 1.2 Method: MW | |
| Location: | | LOCATED IN R2 ~250 m D/S FROM ROAD. | | Map #: | | 093L024 | | Site No.: | | 6 Length surveyed (m): 300.0 Method: HC | |
| | | | | U.T.M.: | | 9.6073 .60112 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/17/96 | | Time: 11:30 | | Agency: C58 | | Survey Crew: CPARD \ \ \ \ \ | | Photos: | | A2/6, 7 Air Photos: BCB 91179.220 | |
| Channel Characteristics | | | | | | Specific Data | | Bed Material | | | |
| Av. Chan. Width (m): | | 0.2 | | Method Av. Chan. Width (m): | | T | | % Fines (<2mm): | | 80 % Fines (<2mm): 80 | |
| Av. Wet. Width (m): | | 0.2 | | Method Av. Wet. Width (m): | | T | | % Gravels: | | 20 Small (2-16mm): 10 Large (16-64mm): 10 | |
| Av. Max. Rif. Depth (cm): | | 2 | | Av. Max. Riffle Depth (cm): | | MS | | % Larges: | | 0 Small cobble (64-128mm): 0 Large cobble (128-256mm): 0 Boulder cobble (>256mm): 0 | |
| Av. Max. Pool Depth (cm): | | 10 | | Av. Max. Pool Depth (cm): | | 2 | | % Bedrock: | | 0 % Bedrock: 0 | |
| Gradient (%): | | 13.0 | | Method Gradient: | | CL | | D90 (cm): | | 1 Compaction: High | |
| % Pool: 20 | | % Riffle: 70 | | % Run: 10 | | % Other: 0 | | | | | |
| % Side Channel: | | 0-10 | | Method Side Channel: | | GE | | | | | |
| % Debris Area: | | >40 | | Method Debris Area: | | GE | | | | | |
| Cover | | | | | | | | Banks | | | |
| Cover Total % : | | 60 | | Method Cover Total %: | | GE | | Height (m): | | 0.2 % Unstable: 0 | |
| Dp Pool: 0 L.O.D.: | | 30 | | Boulder: 0 | | In Veg.: 10 | | Over Veg: 60 | | Cutbank: 0 | |
| Crown Closure % : | | | | Method Crown Closure: | | Aspect: SW | | Method Aspect: | | AE | |
| Discharge | | | | | | Specific Data | | | | | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | Textures Fines: | | Yes Gravel: No Larges: No Bedrock: No | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | Confinement: | | 4 | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | Valley: Chan. Ratio: | | 3 | |
| Discharge (m3/s) : | | 0.01 | | Method Discharge (m3/s) : | | | | Stage: | | M | |
| Reach Symbol | | | | | | | | Flood Signs Ht(m): 0 Method Flood Signs: GI | | | |
| | | | | | | (Fish) | | Braided: N Method Braided: GE | | | |
| | | | | | | NS | | Bars (%): 0 Method Bars: GE | | | |
| | | | | | | 0 C 13.0 8200 | | pH: 7.0 Method pH: PH | | | |
| | | | | | | (Width, Valley: Channel, Slope) | | O2 (ppm): Method Dissolved Oxygen: IC | | | |
| | | | | | | (Bed Material) | | Water Temp. (°C): 6.0 Method Temperature: IC | | | |
| | | | | | | | | Turb. (cm): 200 Method Turbidity: GI | | | |
| | | | | | | | | Cond. (µmhos): Method Conductivity: | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-111 -4 2-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | This tributary was not sampled; no fish habitat present. |
| C2 | Small, steep creek which is not accessible due to an average of 13% gradient throughout Reach 2. |
| C3 | Surveyed lower end (Reach 1) by helicopter; tributary consists of ponded channel within a long meadow and of sections with no defined channel. Possible fish use in the lower 200 m; fish use u/s of 200 m is unlikely. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-159-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH4.3 | Access: | V2 |
| Watershed Code: | 460-6006-508-174-159-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.5 Method: MW |
| Location: | LOCATED ~150 m D/S FROM THE ROAD. | Site No.: | 7 | Length surveyed (m): | 985.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6072 .60125 | Photos: | A1/9, 10 Air Photos: BCB 91179:220 |
| Date: 9/13/96 | Time: 11:30 | Agency: C58 | Survey Crew: CP/RD \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.2 | 0.9 | 0.7 | 1.1 | 1.3 | 1.0 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.2 | 0.9 | 0.7 | 1.1 | 1.3 | 1.0 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 20 | % Run: 60 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 60 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 40 | L.O.D.: 20 | Boulder: 10 | In Veg.: 0 | Over Veg: 10 | Cutbank: 20 | | | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : W | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I A 6.0 | 4510 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 55 | Small (2-16mm): | 35 |
| | | Large (16-64mm): | 20 |
| % Larges: | 5 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: No | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.5 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GL |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-159-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Five minnow traps were set in this site. No fish were caught.
- C2 Tributary is small and overgrown. The overstory has grown into and across the channel.
- C3 Tributary has an average gradient of 6% over the 985 m surveyed with some 0.20 m to 0.35 m drops over logs. Th4.3 is classed as S4 habitat up to 500 m and then class S6 above.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-TH -4.4-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|---------------------------------|--|----------------------|--|---|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH4.4 | | Access: | | V2 | |
| Watershed Code: | | 460-6006-508-174-TH -4.4-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 1.2 Method: MW | |
| Location: | | LOCATED ~100 m D/S OF THE ROAD | | Map #: | | 093L024 | | Site No.: | | 8 Length surveyed (m): 500.0 Method: HC | |
| Date: 9/17/96 | | Time: 11:00 | | Agency: C58 | | Survey Crew: CP/RD \ \ \ \ \ | | Fish Card: | | N Field: Yes Historical: No | |
| | | | | U.T.M.: | | 9.6073 .60126 | | Photos: | | A2/4, 5 Air Photos: BCB 91179:220 | |
| Channel Characteristics | | | | | | Specific Data | | Bed Material | | | |
| Av. Chan. Width (m): | | 0.3 | | Method Av. Chan. Width (m): | | T | | % Fines (<2mm): | | 80 % Fines (<2mm): 80 | |
| Av. Wet. Width (m): | | 0.3 | | Method Av. Wet. Width (m): | | T | | % Gravels: | | 20 Small (2-16mm): 10 | |
| Av. Max. Rif. Depth (cm): | | 5 | | Av. Max. Riffle Depth (cm): | | MS | | | | Large (16-64mm): 10 | |
| Av. Max. Pool Depth (cm): | | 20 | | Av. Max. Pool Depth (cm): | | 5 | | % Larges: | | 0 Small cobble (64-128mm): 0 | |
| Gradient (%): | | 7.0 | | Method Gradient: | | CL | | | | Large cobble (128-256mm): 0 | |
| % Pool: 75 | | % Riffle: 5 | | % Run: 20 | | % Other: 0 | | Method: GE | | Boulder cobble (>256mm): 0 | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | % Bedrock: | | 0 % Bedrock: 0 | |
| % Debris Area: | | 40 | | Method Debris Area: | | GE | | D90 (cm): | | 1 Compaction: High | |
| Cover | | | | | | | | Banks | | | |
| Cover Total % : | | 70 | | Method Cover Total %: | | GE | | Height (m): | | 0.2 % Unstable: 0 | |
| Dp Pool: 0 L.O.D.: | | 30 | | Boulder: 0 In Veg.: 10 | | Over Veg: 60 | | Textures Fines: | | Yes Gravel: No Larges: No Bedrock: No | |
| Crown Closure % : | | 40 | | Method Crown Closure: | | GE | | Confinement: | | 5 | |
| | | | | Aspect: W | | Method Aspect: AE | | Valley: Chan. Ratio: | | 4 | |
| Discharge | | | | | | Specific Data | | | | | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | Stage: | | M | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | Flood Signs 1lt(m): | | 0.1 Method Flood Signs: MS | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | Braided: | | N Method Braided: GE | |
| Discharge (m3/s) : | | 0.01 | | Method Discharge (m3/s) : | | | | Bars (%): | | 0 Method Bars: GE | |
| Reach Symbol | | | | | | | | | | | |
| | | | | | | (Fish) | | | | | |
| | | | | | | NF | | | | | |
| | | | | | | 0 D 7.0 8200 | | | | | |
| | | | | | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-174-TH-4.4-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Electrofished 30 m length of stream. No fish were caught.
- C2 Th4.4 is a small seepage which we suspect dewater during the low flow period.
- C3 This tributary is not accessible to fish due to its small size and 7% gradient. Habitat is not suitable for fish.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-203-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH15 | Access: | V2 |
| Watershed Code: | 460-6006-508-203-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | LOCATED ~100 m D/S FROM ROAD. | Site No.: | 1 | Length surveyed (m): | 340.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6054 60122 | Photos: | B1/8, 9 Air Photos: BCB 91179:221 |
| Date: 9/12/96 | Time: 16:00 | Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.7 | Method Av. Chan. Width (m): | T | 2.8 | 3.3 | 2.8 | 3.6 | 2.4 | 1.1 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 1.4 | 0.6 | 1.0 | 1.4 | | |
| Av. Max. Rif. Depth (cm): | 13 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 13 | | | | | | |
| Gradient (%): | 11.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 60 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 22 | Compaction: | High |

Cover

| | | | |
|-------------------|-----------|-----------------------|-------------------|
| Cover Total % : | 70 | Method Cover Total %: | GE |
| Dp Pool : 15 | L.O.D.: 5 | Boulder: 25 | In Veg.: 0 |
| | | Over Veg: 50 | Cutbank: 5 |
| Crown Closure % : | 50 | Method Crown Closure: | GE |
| | | Aspect : E | Method Aspect: AE |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.01 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| |
|---------------------------------|
| (Fish) |
| NF |
| 3 A 11.0 |
| (Width, Valley: Channel, Slope) |
| 1360 |
| (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 10 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | H | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 50 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-203-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 A sample site was located below the road culvert. Electrofished ~50 m length of stream and no fish were caught. Another electrofishing site was located ~100 m u/s from the Thautil R. - Th5 confluence (gradient is ~7%). Site length was ~100 m and no fish were caught.
- C2 Good potential habitat for fry and parr was present u/s but electrofishing sites show that no fish are present. Suspect 22% gradient near mouth of Th5 is a barrier to fish and the habitat structure u/s is too small for resident use.
- C3 The gradient of Th5 was 22% in the first 40 m u/s from the Thautil confluence. It then gradually decreased for the rest of the reach with an average gradient of 11%.
- C4 High eroding banks were observed along the lower sections of stream (Photo B1/7).

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH1 - 6 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH6 | Access: | FT |
| Watershed Code: | 460-6006-508-TH - 6 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | LOCATED ~220 m D/S FROM ROAD. | Site No.: | 1 | Length surveyed (m): | 160.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/12/96 | Time: 15:00 | Map #: | 093L024 | Photos: | BI/3 - 6 Air Photos: BCB 9/179-221 |
| | | U.T.M.: | 9.6054 .60127 | | |
| Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 2.2 | 1.7 | 1.2 | 1.7 | 2.2 | 1.2 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 1.4 | 1.2 | 0.8 | | | |
| Av. Max. Rif. Depth (cm): | 20 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 20 | | | | | | |
| Gradient (%): | 18.0 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 60 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool: 25 | L.O.D.: 20 | Boulder: 10 | In Veg.: 0 | Over Veg: 40 | Cutbank: 5 | | |
| Crown Closure % : | 80 | Method Crown Closure: | GE | Aspect: E | Method Aspect: | AE | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 18.0 | 4240 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Large: | 40 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | H | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 7.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-T11 - 6 -000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | C | 0.3 |

Comments

- C1 An electrofishing site was located ~100 m u/s from the Thautil R. confluence. 100 m length of stream was sampled with no fish caught. Tadpoles were observed along the muddy margins of the channel near the base of Th6 (Photo B1/6).
- C2 A cascade plus a 50 cm high drop was observed ~300 m u/s from the mouth; suspect migration barrier to juveniles. (Photo B1/3)
- C3 Steep 21% section from Thautil R. floodplain u/s for ~ 50 m. Suspected to be a migration barrier and the top of the distribution for fish. Numerous SST fry were observed in Th6 near its mouth.
- C4 Eroding banks were observed: ~320 m below the road, bank has ~70% sideslopes (PhotoB1/4); ~40 m high very unstable eroding cutbank over the Thautil River (Photo B1/5). Th6 has a high capacity to transport sediment from the eroding bank.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH - 6 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH6 | Access: | V2 |
| Watershed Code: | 460-6006-508-TH - 6 -000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.5 Method: MW |
| Location: | BEGAN SURVEY AT ROAD CROSSING AND TRAVELLED D/S. | Site No.: | 2 | Length surveyed (m): | 220.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/12/96 | Time: 14:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | B1/1, 2 Air Photos: BCB 91179:221 |
| | | Map #: | 093L024 | | |
| | | U.T.M.: | 9.6054 .60127 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.3 | Method Av. Chan. Width (m): | T | 2.5 | 1.8 | 2.9 | 2.8 | 1.8 | 2.1 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.3 | 1.1 | 0.9 | 2.1 | 1.0 | 1.1 |
| Av. Max. Rif. Depth (cm): | 25 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 45 | Av. Max. Pool Depth (cm): | 25 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: 35 | % Riffle: 35 | % Run: 30 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 90 | % Fines (<2mm): | 90 |
| % Gravels: | 5 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 5 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Cover

| | | | |
|------------------------|------------|-----------------------|-------------------|
| Cover Total % : | 65 | Method Cover Total %: | GE |
| Dp Pool: 40 L.O.D.: 25 | Boulder: 5 | In Veg.: 0 | Over Veg: 25 |
| Crown Closure % : | 40 | Method Crown Closure: | GE |
| | | Aspect: SE | Method Aspect: AE |
| | | Cutbank: | 5 |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.6 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | H | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 50 | Method Bars: | GE |
| pH: | 7.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|-----------------------|------|------------------------------|----|
| Wetted Width (m) : | 0.8 | Method Wetted Width (m) : | T |
| Mean Depth (m) : | 0.1 | Method Mean Depth (m) : | MS |
| Mean Velocity (m/s) : | 0.30 | Method Mean Velocity (m/s) : | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 8.0 | 9110 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-T11 - 6 -000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 250.0 |

Comments

- C1 Electrofished 28 m length of stream d/s from the road. No fish were caught.
- C2 Drops of up to 0.7 m over woody debris were observed ~50 m d/s from road.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-231- 00-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|---------------------------------|
| Stream Name: | THAUTIL R TRIBUTARY | Stream "Local": | TH7 | Access: | V2 |
| Watershed Code: | 460-6006-508-231- 00-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.2 Method: MW |
| Location: | -50 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6057 .60134 | Photos: | B3/22 Air Photos: BCB 91179:221 |
| Date: 9/23/96 | Time: 11:00 | Agency: C58 | Survey Crew: JH\SS\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.1 | Method Av. Chan. Width (m): | T | 2.0 | 2.6 | 1.8 | 1.9 | 2.5 | 2.0 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.4 | 1.6 | 0.7 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 23 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 5.5 | Method Gradient: | CL | | | | | | |
| % Pool: 25 | % Riffle: 75 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|----------------------|----|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | |
| Dp Pool : 10 L.O.D.: | 10 | Boulder: 20 | In Veg.: 0 | Over Veg: 40 | Cutbank: 20 | | |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 C 6.0 | 2530 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 50 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 30 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 18 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-231- 00-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 No barriers to fish passage. Assume fish use the lower 600 m of this creek.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-231- 00-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH7 | Access: | V2 |
| Watershed Code: | 460-6006-508-231- 00-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.2 Method: MW |
| Location: | ~35 m D/S FROM ROAD CROSSING. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/17/96 | Time: 17:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | B2/17, 18 Air Photos: BCB 91179:221 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.3 | 1.0 | 1.5 | 1.5 | 1.9 | 1.3 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.3 | 0.9 | 1.1 | | | |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: 30 | % Riffle: 70 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 75 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | High |

Cover

| | | | |
|------------------------|-----------------------|-----------------------|-------------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool: 20 L.O.D.: 30 | Boulder: 5 In Veg.: 0 | Over Veg: 40 | Cutbank: 5 |
| Crown Closure % : | 70 | Method Crown Closure: | GE |
| | | Aspect: SE | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 7.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I A 6.0 | 2710 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-231- 00-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Obstructions

Comments

C1 Marginal habitat for fish use.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-245-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH8 | Access: | H |
| Watershed Code: | 460-6006-508-245-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | ~100 m U/S FROM THAUTIL R. CONFLUENCE | Site No.: | 1 | Length surveyed (m): | 200.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6057 .60138 | Photos: | A5/2, 3 Air Photos: BCB 91179-220 |
| Date: 9/20/96 | Time: 13:00 | Agency: C58 | Survey Crew: RD\CP\DB \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.9 | Method Av. Chan. Width (m): | T | 2.7 | 3.4 | 2.5 | 2.9 | 3.1 | 3.0 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 15 | % Run: 75 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 25 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|---------------------|----|-----------------------|------------|--------------|----------------|----|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 10 L.O.D.: | 40 | Boulder: 0 | In Veg.: 0 | Over Veg: 20 | Cutbank: | 30 | | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect: W | Method Aspect: | AE | | | |

Discharge

| | | | | |
|-----------------------|------|----------------------------|----|---------------|
| Wetted Width (m) : | | Method Wetted Width (m) : | | Specific Data |
| Mean Depth (m) : | | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 3 A 0.5 | 3700 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 30 | % Fines (<2mm): | 30 |
| % Gravels: | 70 | Small (2-16mm): | 55 |
| | | Large (16-64mm): | 15 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 4 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 70 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-245-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electrofished 38 m length of channel which was located ~60 m u/s from the confluence with the Thautil R. floodplain. No fish were caught or observed. Assume some fish use u/s to the break in slope. |
| C2 | Tributary is a low gradient meandering channel on the floodplain. |
| C3 | Th8 classed as S3 u/s to the top of R1 despite no catch; tributary could be used by fish in high flows. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-245-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH8 | Access: | V2 |
| Watershed Code: | 460-6006-508-245-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 3.2 Method: MW |
| Location: | ~100 m D/S FROM THE ROAD. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6057 .60138 | Photos: | A2/8, 9 Air Photos: BCB 91179:220 |
| Date: | 9/17/96 | Time: | 14:30 | Agency: | C58 |
| | | Survey Crew: | RD\CP\DB \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.2 | 0.8 | 1.1 | 2.1 | 1.2 | 0.5 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 1.2 | 0.8 | 1.1 | 2.1 | 1.2 | 0.5 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 40 | % Run: | 30 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 25 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total %: | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 20 | L.O.D.: | 40 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 30 |
| Crown Closure %: | 2 | Method Crown Closure: | GE | Aspect: | W | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.04 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I C 3.0 | 4600 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 60 | Small (2-16mm): | 35 |
| | | Large (16-64mm): | 25 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-245-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 100 m length of stream, 1 pass with no lower net. No fish were caught. Tadpoles were observed along the margins. |
| C2 | Low gradient, low energy stream. Easy access through road culvert. Upstream from road, creek drops over a 1 m high bank. |
| C3 | Suspect access problems at the mouth of the tributary - see contour map. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-286-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------|--------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH9 | Access: | V2 |
| Watershed Code: | 460-6006-508-286-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.9 Method: MW |
| Location: | SITE LOCATED ~550 m U/S FROM THAUTIL R. CONFLUENCE. | Map #: | 093L024 | Site No.: | 1 Length surveyed (m): 100.0 Method: HC |
| Date: 10/21/96 | Time: 11:15 | U.T.M.: | 9.6058 60149 | Fish Card: | N Field: Yes Historical: No |
| Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | no photo | Air Photos: | BCB 91180:015 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 4.0 | 2.0 | 2.3 | 1.5 | 2.8 | 2.5 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 2.2 | 1.2 | 1.2 | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | 9 | 10 | 12 | | | |
| Av. Max. Pool Depth (cm): | 29 | Av. Max. Pool Depth (cm): | 10 | 27 | 31 | 28 | | | |
| Gradient (%): | 2.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 30 | % Run: | 40 | % Other: | 0 | Method: | GE |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Cover

| | | | |
|----------------------|----|-----------------------|-------------------|
| Cover Total % : | 50 | Method Cover Total %: | GE |
| Dp Pool : 20 L.O.D.: | 20 | Boulder: 0 | In Veg.: 0 |
| Crown Closure % : | 50 | Method Crown Closure: | GE |
| | | Aspect : SE | Method Aspect: AE |
| | | Over Veg: 40 | Cutbank: 20 |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 3 D 2.5 | 8200 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 60 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 25 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-286-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished ~100 m length of stream. No fish were caught, although the habitat appears suitable for fish. |
| C2 | Low gradient, unconfined channel; good pool development. |
| C3 | A permanent barrier d/s is unlikely as channel enters mainstem at a low flat area with abundant sidechannel development. |
| C4 | Th9 classed as S3 u/s to the top of R1 based on accessible habitat. |
| C5 | Air Temp: 4.5 C. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-286-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH9 | Access: | V2 |
| Watershed Code: | 460-6006-508-286-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | SITE LOCATED ~50 m D/S FROM ROAD CROSSING. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M. : | 9.6058 60149 | Photos: | B2/19, 21 Air Photos: BCB 91180:015 |
| Date: 9/17/96 | Time: 17:30 | Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.1 | Method Av. Chan. Width (m): | T | 2.2 | 2.1 | 2.0 | 1.7 | 2.3 | 2.3 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.4 | 1.7 | 1.4 | 0.9 | | |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 4 | | | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 60 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|----------------------|----|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : 20 L.O.D.: | 30 | Boulder: 5 | In Veg.: 0 | Over Veg: 30 | Cutbank: | 15 | |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: | AE | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 10.0 | 3610 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|-----|
| % Fines (<2mm): | 30 | % Fines (<2mm): | 30 |
| % Gravels: | 60 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | Low |

Banks

| | | | |
|----------------------|------|--------------------------|------------------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | I | | |
| Valley: Chan. Ratio: | I | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.17 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-286-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1 Electrofished a 35 m length of stream; no fish were caught.
- C2 In the lower section of R1, gradient was 15%; suspect fish use ends at this point due to the high gradient.
- C3 Erosion problem at road culvert; cannot see through culvert - sediment source for creek (Photo B2/21).

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------------------|--------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH10 | Access: | II |
| Watershed Code: | 460-6006-508-305-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.2 Method: MW |
| Location: | NEAR THE D/S EDGE OF UPPER, CIRCULAR MEADOW, ~ 400 m U/S FROM MOUTH. | Map #: | 093L024 | Site No.: | 1 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M.: | 9.6062 .60156 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/20/96 | Time: 16.00 | Agency: C58 | Survey Crew: JIASS \ \ \ \ \ | Photos: | B3/20 Air Photos: BCB 91180:139 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 2.3 | 2.4 | 1.0 | 1.8 | 1.9 | 1.9 |
| Av. Wet. Width (m): | 1.7 | Method Av. Wet. Width (m): | T | 1.4 | 2.1 | 1.7 | | | |
| Av. Max. Rif. Depth (cm): | 13 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 13 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 25 | % Riffle: | 15 | % Run: | 60 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 25 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 5 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 35 |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : | S | Method Aspect: | AE | Cutbank: | 30 |

Discharge

| | | | |
|-----------------------|------|------------------------------|----|
| Wetted Width (m) : | 1.0 | Method Wetted Width (m) : | T |
| Mean Depth (m) : | 0.1 | Method Mean Depth (m) : | MS |
| Mean Velocity (m/s) : | 0.35 | Method Mean Velocity (m/s) : | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| BT SST (DV) | |
| 2 D 1.5 | 3700 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 30 | % Fines (<2mm): | 30 |
| % Gravels: | 70 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 4 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.7 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 4 | Bedrock: | No |
| Stage: | 1. | | |
| Flood Signs II(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 5 | 50 - 65 | J | R | | | EL |
| BT | 2 | 84 - 111 | J | R | | | EL |
| CHF | 1 | 49 | F | R | | | EL |

Obstructions

Comments

- C1

Electrofished a 50 m length of stream. The RB caught are suspected to be progeny of SST. Suspect DV to be present in this reach due to their presence u/s. It was not possible to distinguish between BT and DV fry - referred to as char fry (CHF).
- C2

Th10 is classed as S3 throughout R1.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|--------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH10 | Access: | V2 |
| Watershed Code: | 460-6006-508-305-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.7 Method: MW |
| Location: | AT ROAD CULVERT & U/S, ~1350 m U/S FROM THAUTIL R. CONFLUENCE. | Site No.: | 2 | Length surveyed (m): | 895.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6062 60156 | Photos: | B3/23 - 25 Air Photos: BCB 91180:139 |
| Date: 9/23/96 | Time: 13:30 | Agency: C58 | Survey Crew: JH\SS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.2 | Method Av. Chan. Width (m): | T | 2.3 | 1.9 | 2.4 | 2.2 | 2.3 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.2 | 2.0 | 1.6 | 1.5 | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 24 | Av. Max. Pool Depth (cm): | 6 | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | |
| % Pool: 60 | % Riffle: 40 | % Run: 0 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 45 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 15 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Cover

| | | | |
|------------------|------------|-----------------------|-------------------|
| Cover Total %: | 35 | Method Cover Total %: | GE |
| Dp Pool: 20 | L.O.D.: 15 | Boulder: 5 | In Veg.: 0 |
| | | Over Veg: 10 | Cutbank: 50 |
| Crown Closure %: | 40 | Method Crown Closure: | GE |
| | | Aspect: SE | Method Aspect: AE |

Discharge

| | |
|----------------------|-------------------------------|
| Wetted Width (m): | Method Wetted Width (m): |
| Mean Depth (m): | Method Mean Depth (m): |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) VO |
| Discharge (m3/s): | 0.02 Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 2 D 5.0 | 4420 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 47 | F | R | | | EL |

Obstructions

Comments

- C1 Electrofished 56 m of stream above the road culvert and 57 m of stream below the road culvert. The DV was caught below the culvert. No catch above the culvert does not mean the culvert is a barrier as it looks quite passable by both juveniles and fry, and the fish densities below the culvert are very low.
- C2 Culvert is 12 m long with a 1% gradient and no drop at its outlet. Velocities are ~ 0.3 m/s which is suitable for migration at this time. (Photo B3/23)
- C3 Useable fish habitat u/s of road and no barrier to fish migration identified. Suspect fish distribution extends u/s and ends at continuous 20% gradient.
- C4 3 Western Spotted frogs were observed d/s from the culvert.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|--------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH10 | Access: | 11 |
| Watershed Code: | 460-6006-508-305-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 2.1 Method: MW |
| Location: | TH10 LAKE OUTLET | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/22/96 | Time: 12:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A14/15, 16 Air Photos: BCB 91180:141 |
| | | Map #: | 093L024 | | |
| | | U.T.M.: | 9.6062 .60156 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.5 | 1.8 | 1.1 | 1.2 | 1.6 | 1.4 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.5 | 1.6 | 1.0 | 1.2 | 1.5 | 1.0 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 19 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 10 | L.O.D.: | 15 | Boulder: | 35 | In Veg.: | 30 | Over Veg: | 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | NF | |
| 1 C 8.0 | 3160 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 25 | % Fines (<2mm): | 25 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 65 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 15 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 24 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.5 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 20 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electrofished 71 m length of stream with 1 d/s pass and no lower net. No fish were caught. |
| C2 | Small lake was iced over during the survey but the channel below the lake was open and flowing. |
| C3 | Bed material consists of cobble/fines; area is of very limited potential spawning. |
| C4 | The outlet of the channel is accessible to fish but it becomes very steep d/s. |
| C5 | Air Temp: 1 C. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-TH -10.-1 -000-000-000-000-000

| Header Information | | | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|---------------------------------|--|---------------|--|-------------------|--|---------------------------|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH10.1 | | Access: | | 11 | | | |
| Watershed Code: | | 460-6006-508-305-TH -10.-1 -000-000-000-000-000 | | | | | | | | Reach No.: | | 1 | |
| Location: | | D/S EDGE OF CIRCULAR MEADOW; ~150 m U/S FROM CONFLUENCE WITH TH10. | | | | Map #: | | 0931.024 | | Site No.: | | 4 | |
| | | | | | | U.T.M.: | | 9.6063 .60159 | | Fish Card: | | N | |
| Date: 9/20/96 | | Time: 16:30 | | Agency: C58 | | Survey Crew: JH/SS \ \ \ \ \ \ | | Photos: | | B3/21 | | Air Photos: BCB 91180:139 | |
| Channel Characteristics | | | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 0.8 | | Method Av. Chan. Width (m): | | T | | 0.8 | | 1.0 | | 0.9 | |
| Av. Wet. Width (m): | | 0.0 | | Method Av. Wet. Width (m): | | T | | 0.5 | | 0.6 | | 1.1 | |
| Av. Max. Rif. Depth (cm): | | 0 | | Av. Max. Riffle Depth (cm): | | MS | | | | | | | |
| Av. Max. Pool Depth (cm): | | 20 | | Av. Max. Pool Depth (cm): | | 0 | | | | | | | |
| Gradient (%): | | 0.5 | | Method Gradient: | | CL | | | | | | | |
| % Pool: 0 | | % Riffle: 0 | | % Run: 0 | | % Other: 0 | | Method: GE | | | | | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | | | | | | |
| % Debris Area: | | 0 | | Method Debris Area: | | GE | | | | | | | |
| Cover | | | | | | | | | | Banks | | | |
| Cover Total %: | | 50 | | Method Cover Total %: | | GE | | | | | | | |
| Dp Pool: 0 | | L.O.D.: 0 | | Boulder: 0 | | In Veg.: 0 | | Over Veg: 50 | | Cutbank: 50 | | | |
| Crown Closure %: | | 0 | | Method Crown Closure: | | GE | | Aspect: S | | Method Aspect: AE | | | |
| Discharge | | | | | | Specific Data | | | | | | | |
| Wetted Width (m): | | | | Method Wetted Width (m): | | | | | | | | | |
| Mean Depth (m): | | | | Method Mean Depth (m): | | | | | | | | | |
| Mean Velocity (m/s): | | | | Method Mean Velocity (m/s): | | VO | | | | | | | |
| Discharge (m3/s): | | 0.00 | | Method Discharge (m3/s): | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | |
| | | | | | | (Fish) | | | | | | | |
| | | | | | | (SP) | | | | | | | |
| | | | | | | 1 D 0.5 | | | | 5500 | | | |
| | | | | | | (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | |
| Textures Fines: | | Yes | | Gravel: No | | Larges: No | | Bedrock: No | | | | | |
| Confinement: | | 4 | | | | | | | | | | | |
| Valley: Chan. Ratio: | | 4 | | | | | | | | | | | |
| Stage: | | Dry | | | | | | | | | | | |
| Flood Signs Ht(m): | | 0.1 | | Method Flood Signs: | | MS | | | | | | | |
| Braided: | | N | | Method Braided: | | GE | | | | | | | |
| Bars (%): | | | | Method Bars: | | | | | | | | | |
| pH: | | | | Method pH: | | | | | | | | | |
| O2 (ppm): | | | | Method Dissolved Oxygen: | | | | | | | | | |
| Water Temp. (°C): | | | | Method Temperature: | | | | | | | | | |
| Turb. (cm): | | | | Method Turbidity: | | | | | | | | | |
| Cond. (µmhos): | | | | Method Conductivity: | | | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-TH -10.-1 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Tributary was dry with pockets of stagnant water, so there was zero discharge and some measurements such as temperature could not be taken. A sample site was not performed due to the lack of water in the stream. |
| C2 | Channel provides potential fish habitat during high spring flows, but above the steep gradient section the tributary is too small to provide habitat. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-TH -10.-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH10.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-305-TH -10.-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.4 Method: MW |
| Location: | ~150 m D/S FROM ROAD | Site No.: | 5 | Length surveyed (m): | 150.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/23/96 | Time: 16:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | B4/4, 5 Air Photos: BCB 91180:139 |
| | | Map #: | 093L024 | | |
| | | U.T.M.: | 9.6063 .60159 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.5 | 1.1 | 0.8 | 1.2 | 0.9 | 1.3 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 1.4 | 0.9 | 0.2 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 22 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: 65 | % Riffle: 35 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|--------------------|----|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | |
| Dp Pool: 0 L.O.D.: | 5 | Boulder: 0 | In Veg.: 0 | Over Veg: 75 | Cutbank: | 20 | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect: SE | Method Aspect: | AE | |

Discharge

| | | | | | | | |
|----------------------|------|----------------------------|----|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) | VO | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 1 C 5.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.3 | % Unstable: | 20 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-305-T11-10-1-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1 Electrofished 100 m length of stream, d/s from road crossing. No fish were caught.
- C2 Although no fish were observed, there's potential for fish access and presence d/s of the sample site.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH11 | Access: | V2 |
| Watershed Code: | 460-6006-508-343-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.9 Method: MW |
| Location: | SAMPLED AT BRIDGE, ~800 m U/S FROM THAUTIL R. CONFLUENCE. | Map #: | 093L024 | Length surveyed (m): | 100.0 Method: HC |
| | | U.T.M.: | 9.6070 .60165 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/17/96 | Time: 13:00 | Agency: C58 | Survey Crew: RDVCP \ \ \ \ \ | Photos: | A2/10, 11 Air Photos: BCB 91180:017 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 3.1 | Method Av. Chan. Width (m): | T | 2.8 | 3.7 | 3.6 | 2.6 | 3.1 | 2.9 |
| Av. Wet. Width (m): | 3.0 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | | |
| % Pool: 25 | % Riffle: 60 | % Run: 15 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | |
| Dp Pool : 40 | L.O.D.: 30 | Boulder: 20 | In Veg.: 0 | Over Veg: 0 | Cutbank: 10 | | |
| Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: AE | | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.14 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 3 A 10.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 25 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 18 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs 11t(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 81 - 112 | J | R | | | EL |

Obstructions

Comments

- C1 Electrofished ~25 m length of stream with a lower net, and spot-shocked ~25 m of channel d/s. 2 DV were caught and 2 DV were visually observed. Very low fish densities in this section of stream.
- C2 Tributary has a high potential to transport debris. Channel is confined and LOD is an important component in the log stepping which is present. Several debris jams with 0.6 - 1.0 m high drops were observed d/s.
- C3 Fish in this Reach must be residents due to the 10% gradient, and the break in slope between R1 and R2 forming a bench which is likely impassable to fish.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|--------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH11 | Access: | 11 |
| Watershed Code: | 460-6006-508-343-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.9 Method: MW |
| Location: | SAMPLED NEAR TOP OF CUTBLOCK 610#2, ~950 m U/S FROM BRIDGE. | Site No.: | 2 | Length surveyed (m): | 1100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6070 .60165 | Photos: | A14/13, 14 Air Photos: BCB 91180:017 |
| Date: 10/22/96 | Time: 13:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.9 | Method Av. Chan. Width (m): | T | 2.4 | 2.8 | 3.0 | 2.5 | 3.9 | 2.6 |
| Av. Wet. Width (m): | 2.6 | Method Av. Wet. Width (m): | T | 1.6 | 2.7 | 2.8 | 2.3 | 3.4 | 2.6 |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 11 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 75 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|
| Cover Total %: | 75 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 30 | L.O.D.: | 20 | Boulder: | 40 | In Veg.: | 0 | Over Veg.: | 0 |
| Crown Closure %: | 15 | Method Crown Closure: | GE | Aspect: | NW | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.08 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 3 B 9.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 35 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 20 |
| % Larges: | 55 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GL |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 50 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 2 | 75 - 130 | J | R | | | EL |

Obstructions

Comments

- C1 Electrofished 25 m length of channel with 1 pass and no lower net.
- C2 The tributary becomes steep u/s of this site and then returns to a low gradient; accessible to fish to the top of R2 (2000 m u/s from mouth). Th11 is classified as S3 in R2 and becomes class S6 u/s of R2.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|-----------------------------|------------|-----------------------|-------------------|-------------------------------|-----|---|-----|---------------------------|--|----------------------|----|---------------------------|------------|-----------------------------|-------------|---------------------------------|------------------|-----------------------|-------------------------|-------------|-------------------|---|-----|----------------------------|---|----------------------------|-----|-------------|-----|-------------|--------------------|---------------------------|---------------------------|-----------------------------|------------|-------------|--------------|---|--|--|--|---------------------------|----|---------------------------|---|--|--------|---|--|--|--|--------------------|------|---------------------|----|----------|---|-----------------|----|-----------|---|--------------|--------------|-----------|------------|------------|--|-----------|--|--------------------------|--|-------------------|-----|----------------------|----|-------------|-----|-------------------|----|----------------|----|----------------------|-------|---------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|---|-----------------|---|------------|----|-----------------|----|--|--|------------------|----|-----------|----|--------------------------|----|--|--|---------------------------|---|--|--|--------------------------|---|------------|---|------------|---|-----------|----|-------------|------|
| Stream Name: THAUTIL R. TRIBUTARY | | | | Stream "Local": TH11 | | | | Access: 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-343-000-000-000-000-000-000-000 | | | | Reach No.: 3 | | | | Reach Length (km): 3.4 Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: UPPER SECTION, ~100 m U/S FROM TH11/ TH11.1 CONFLUENCE. | | | | Map #: 093L024 | | | | Site No.: 3 Length surveyed (m): 100.0 Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | U.T.M.: 9.6070 .60165 | | | | Fish Card: N Field: Yes Historical: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/22/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ | | Photos: A5/14, 15 | | Air Photos: BCB 91180:017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="6">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>2.5</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>2.9</td> <td>2.8</td> <td>1.9</td> <td>2.4</td> <td>2.6</td> <td>2.3</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>1.6</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>1.7</td> <td>1.2</td> <td>1.5</td> <td>1.7</td> <td>1.7</td> <td></td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>8</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td colspan="6"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>26</td> <td>Av. Max. Pool Depth (cm):</td> <td>8</td> <td colspan="6"></td> </tr> <tr> <td>Gradient (%):</td> <td>8.0</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="6"></td> </tr> <tr> <td>% Pool: 30</td> <td>% Riffle: 60</td> <td>% Run: 10</td> <td>% Other: 0</td> <td colspan="6">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>% Debris Area:</td> <td>10-40</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | | | | | Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 2.9 | 2.8 | 1.9 | 2.4 | 2.6 | 2.3 | Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.7 | 1.2 | 1.5 | 1.7 | 1.7 | | Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | | Av. Max. Pool Depth (cm): | 26 | Av. Max. Pool Depth (cm): | 8 | | | | | | | Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | | % Pool: 30 | % Riffle: 60 | % Run: 10 | % Other: 0 | Method: GE | | | | | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>5</td> <td>% Fines (<2mm):</td> <td>5</td> </tr> <tr> <td>% Gravels:</td> <td>50</td> <td>Small (2-16mm):</td> <td>10</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>40</td> </tr> <tr> <td>% Larges:</td> <td>45</td> <td>Small cobble (64-128mm):</td> <td>40</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>5</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>0</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>12</td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | | | | | % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | % Gravels: | 50 | Small (2-16mm): | 10 | | | Large (16-64mm): | 40 | % Larges: | 45 | Small cobble (64-128mm): | 40 | | | Large cobble (128-256mm): | 5 | | | Boulder cobble (>256mm): | 0 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 12 | Compaction: | High |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 2.9 | 2.8 | 1.9 | 2.4 | 2.6 | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.7 | 1.2 | 1.5 | 1.7 | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 26 | Av. Max. Pool Depth (cm): | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 30 | % Riffle: 60 | % Run: 10 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 50 | Small (2-16mm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 45 | Small cobble (64-128mm): | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 12 | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>60</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Dp Pool : 10 L.O.D.:</td> <td>20</td> <td>Boulder: 55</td> <td>In Veg.: 0</td> <td>Over Veg: 5</td> <td>Cutbank: 10</td> </tr> <tr> <td>Crown Closure % :</td> <td>30</td> <td>Method Crown Closure:</td> <td>GE</td> <td>Aspect : NW</td> <td>Method Aspect: AE</td> </tr> </tbody> </table> | | | | | | Cover Total % : | 60 | Method Cover Total %: | GE | | | Dp Pool : 10 L.O.D.: | 20 | Boulder: 55 | In Veg.: 0 | Over Veg: 5 | Cutbank: 10 | Crown Closure % : | 30 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>0.4</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel: Yes</td> <td>Larges: No</td> <td>Bedrock: No</td> </tr> <tr> <td>Confinement:</td> <td>3</td> <td colspan="2"></td> <td></td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>1</td> <td colspan="2"></td> <td></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td colspan="2"></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.35</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>5</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td></td> <td>Method pH:</td> <td></td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>2.0</td> <td>Method Temperature:</td> <td>FC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td>60</td> <td>Method Conductivity:</td> <td>CM</td> </tr> </tbody> </table> | | | | | | Height (m): | 0.4 | % Unstable: | 0 | Textures Fines: | Yes | Gravel: Yes | Larges: No | Bedrock: No | Confinement: | 3 | | | | Valley: Chan. Ratio: | 1 | | | | Stage: | M | | | | Flood Signs Ht(m): | 0.35 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 5 | Method Bars: | GE | pH: | | Method pH: | | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 2.0 | Method Temperature: | FC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | 60 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool : 10 L.O.D.: | 20 | Boulder: 55 | In Veg.: 0 | Over Veg: 5 | Cutbank: 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | 30 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 0.4 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No | Bedrock: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.35 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 5 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | | Method pH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 2.0 | Method Temperature: | FC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | 60 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="4">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m) :</td> <td></td> <td>Method Wetted Width (m) :</td> <td></td> <td colspan="3"></td> </tr> <tr> <td>Mean Depth (m) :</td> <td></td> <td>Method Mean Depth (m) :</td> <td></td> <td colspan="3"></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td></td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> <td colspan="3"></td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.06</td> <td>Method Discharge (m3/s) :</td> <td></td> <td colspan="3"></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | | | Wetted Width (m) : | | Method Wetted Width (m) : | | | | | Mean Depth (m) : | | Method Mean Depth (m) : | | | | | Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">(Fish)</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td colspan="2">NF</td> </tr> <tr> <td colspan="2">3 A 8.0</td> <td colspan="2">1540</td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td colspan="2">(Bed Material)</td> </tr> </tbody> </table> | | | | | | | | (Fish) | | | | NF | | 3 A 8.0 | | 1540 | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 A 8.0 | | 1540 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | C | |

Comments

- C1 Electrofished 70 m length of stream with 1 pass and no lower net. No fish were caught although habitat is suitable for fish.
- C2 D/S in steep section in the top of R1, channel is very confined with bedrock; there is a 2 m high x 2.5 m long bedrock chute - impassable to fish.
- C3 Lat/Lon of helicopter landing site: 54 16.53 127 19.57
- C4 Bed material is primarily cobble but some spawning habitat was observed. Channel has good cover in the LOD and alder swale overstory.
- C5 Air Temp: 1 C.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-TH -11.-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH11.1 | Access: | FT |
| Watershed Code: | 460-6006-508-343-TH -11.-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~100 m BELOW SPUR ROAD AT BLOCK 610#5. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 9/23/96 | Time: 11:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A5/12, 13 Air Photos: BCB 91180:017 |
| | | Map #: | 093L024 | | |
| | | U.T.M.: | 9.6092 .60154 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.9 | 0.8 | 1.6 | 3.1 | 0.6 | 0.6 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.9 | 0.8 | 1.6 | 3.1 | 0.6 | 0.6 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 5.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 50 | % Run: 30 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 35 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 13 | % Fines (<2mm): | 13 |
| % Gravels: | 37 | Small (2-16mm): | 12 |
| | | Large (16-64mm): | 25 |
| % Larges: | 50 | Small cobble (64-128mm): | 50 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | Medium |

Cover

| | | | |
|-------------------|------------|-----------------------|-------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool: 5 | L.O.D.: 75 | Boulder: 10 | In Veg.: 0 |
| | | Over Veg: 0 | Cutbank: 10 |
| Crown Closure % : | | Method Crown Closure: | Aspect: SW |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1. | | |
| Flood Signs 1lt(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (umhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.03 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 B 6.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-343-TH-11.-1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Electrofished ~40 m length of stream with 1 pass. No fish were observed.
- C2 Small, low gradient creek with some 30 m high drops over debris present. ~250 m d/s from road, gradient is 14% with a 10 m bedrock section with chutes: 1 m high x 2 m long chute and 0.5 m high x 1 m long chute. Further d/s to 400 m the gradient decreases to 10%. Suspect no fish access in steep 14% gradient section but possible fish use in the lower 150 m section of creek.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH12 | Access: | 11 |
| Watershed Code: | 460-6006-508-355-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | -100 m U/S FROM THAUTIL R. CONFLUENCE | Site No.: | 1 | Length surveyed (m): | 300 0 Method: HC |
| | | Map #: | 0931.024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6071 .60169 | Photos: | DB2/6, 7 Air Photos: BCB 91180.137 |
| Date: 9/20/96 | Time: 14:30 | Agency: C58 | Survey Crew: RD\CP\DB \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 2.0 | 1.1 | 2.5 | 1.8 | 2.0 | 1.8 |
| Av. Wet. Width (m): | 1.9 | Method Av. Wet. Width (m): | T | 2.0 | 1.1 | 2.5 | 1.8 | 2.0 | 1.8 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 10 | % Run: 50 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 80 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|--|--|
| Cover Total % : | 100 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 0 | L.O.D.: 75 | Boulder: 0 | In Veg.: 0 | Over Veg: 0 | Cutbank: 25 | | | | |
| Crown Closure % : | 50 | Method Crown Closure: | GE | Aspect : W | Method Aspect: AE | | | | |

Discharge

| | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s) : | 0.07 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 2 D 1.5 | 5500 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 50 | % Fines (<2mm): | 50 |
| % Gravels: | 50 | Small (2-16mm): | 35 |
| | | Large (16-64mm): | 15 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.9 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 5 | | |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.8 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 132 | J | R | | | EL |

Obstructions

Comments

- C1 Electrofished 30 m length of stream , 1 pass with no lower net. 1 DV was caught.
- C2 Tributary is accessible from the mainstem Thautil R.
- C3 Potential coho habitat though none were present. Debris is abundant within the stream channel.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|--|--|---------------------|--|---------------------------------|--|----------------------|--|---|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH12 | | Access: | | H | |
| Watershed Code: | | 460-6006-508-355-000-000-000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 0.2 Method: MW | |
| Location: | | ~300 m U/S FROM THAUTIL R. CONFLUENCE | | Map #: | | 093L024 | | Site No.: | | 2 Length surveyed (m): 200.0 Method: HC | |
| | | | | U.T.M.: | | 9.6071 .60169 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/20/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: RD \ \ \ \ \ \ \ \ | | Photos: | | A5/4, 5 Air Photos: BCB 91180:137 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 2.4 Method Av. Chan. Width (m): | | T | | 2.4 1.9 3.3 2.7 2.1 2.0 | | % Fines (<2mm): | | 5 % Fines (<2mm): 5 | |
| Av. Wet. Width (m): | | 1.8 Method Av. Wet. Width (m): | | T | | | | % Gravels: | | 15 Small (2-16mm): 5 | |
| Av. Max. Rif. Depth (cm): | | 7 Av. Max. Riffle Depth (cm): | | MS | | | | | | Large (16-64mm): 10 | |
| Av. Max. Pool Depth (cm): | | 35 Av. Max. Pool Depth (cm): | | 7 | | | | % Larges: | | 80 Small cobble (64-128mm): 35 | |
| Gradient (%): | | 6.5 Method Gradient: | | CL | | | | | | Large cobble (128-256mm): 40 | |
| % Pool: 20 | | % Riffle: 50 | | % Run: 30 | | % Other: 0 | | Method: GE | | Boulder cobble (>256mm): 5 | |
| % Side Channel: | | Method Side Channel: | | GE | | | | % Bedrock: | | 0 % Bedrock: 0 | |
| % Debris Area: | | 30 | | Method Debris Area: | | GE | | D90 (cm): | | 24 Compaction: Medium | |
| Cover | | | | Banks | | | | | | | |
| Cover Total % : | | 75 Method Cover Total %: | | GE | | | | Height (m): | | 1.8 % Unstable: 0 | |
| Dp Pool: 20 | | L.O.D.: 40 | | Boulder: 10 | | In Veg.: 0 | | Over Veg: 20 | | Cutbank: 10 | |
| Crown Closure % : | | Method Crown Closure: | | Aspect: W | | Method Aspect: | | AE | | | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Textures Fines: | | Yes Gravel: Yes Larges: No Bedrock: No | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Confinement: | | 2 | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | Valley: Chan. Ratio: | | 2 | |
| Discharge (m3/s) : | | 0.08 Method Discharge (m3/s) : | | | | | | Stage: | | M | |
| Reach Symbol | | | | Banks | | | | | | | |
| | | (Fish) | | | | | | Flood Signs Ht(m): | | 0.3 Method Flood Signs: MS | |
| | | SP(DV) | | | | | | Braided: | | N Method Braided: GE | |
| | | 2 B 7.0 | | 1180 | | | | Bars (%): | | 25 Method Bars: GE | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | pH: | | Method pH: | |
| | | | | | | | | 02 (ppm): | | Method Dissolved Oxygen: | |
| | | | | | | | | Water Temp. (°C): | | 6.0 Method Temperature: 10 | |
| | | | | | | | | Turb. (cm): | | 200 Method Turbidity: GE | |
| | | | | | | | | Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | | | J | | | | VO |

Obstructions

Comments

- C1 Large amounts of debris present in the channel. R2 is restricted due to numerous debris drops but suspect R2 is accessible in higher flows. The upper section of R2 is confined.
- C2 Pockets of habitat suitable for coho spawning were observed. Fine gravel bed material is abundant.
- C3 A juvenile DV was visually observed ~500 m u/s from mouth.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH12 | Access: | V2 |
| Watershed Code: | 460-6006-508-355-000-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 0.7 Method: MW |
| Location: | ~50 D/S FROM ROAD CROSSING. | Site No.: | 3 | Length surveyed (m): | 500.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6071 60169 | Photos: | A5/19, 20 Air Photos: BCB 91180:137 |
| Date: | 9/23/96 | Time: | 16:30 | Agency: | C58 |
| | | Survey Crew: | RDCP \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 2.7 | 1.6 | 1.8 | 2.1 | 1.8 |
| Av. Wet. Width (m): | 2.0 | Method Av. Wet. Width (m): | T | 2.7 | 1.6 | 1.8 | 2.1 | 1.8 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 5 | | | | | |
| Gradient (%): | 9.5 | Method Gradient: | CL | | | | | |
| % Pool: | 20 | % Riffle: | 50 | % Run: | 30 | % Other: | 0 | Method: GE |
| % Side Channel: | | Method Side Channel: | GE | | | | | |
| % Debris Area: | 30 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 60 | Boulder: | 10 | In Veg.: | 0 | Over Veg: | 20 |
| Crown Closure % : | 70 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 2 D 10.0 | 0550 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 50 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 40 |
| % Larges: | 50 | Small cobble (64-128mm): | 50 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | CV | 1.0 |

Comments

- C1 Electrofished 70 m length of stream, 1 pass with no lower net. No fish were caught.
- C2 Two culverts at the road with ~3 - 4 m high road fill on top of culverts. (Photo A5/21)
- C3 R3 is only accessible in the lower 50 m ; above 50 m, gradient is 17% for ~60 m of stream and then the gradient decreases to ~ 7 - 12% and continues up to the road. Fish habitat is present below the road, but sample site results show no fish use.
- C4 Th12 was not surveyed above the road crossing; this section should be examined before logging block 610#3.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-TH-12.-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH12.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-355-TH-12.-1 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | -50 D/S FROM ROAD CROSSING. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6074 .60167 | Photos: | A5/16, 17 Air Photos: BCB 91180:137 |
| Date: | 9/23/96 | Time: | 16:00 | Agency: | C58 |
| | | Survey Crew: | RD\ CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.5 | 0.4 | 0.7 | 0.5 | 0.3 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.5 | 0.4 | 0.7 | 0.5 | 0.3 |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 2 | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | |
| % Pool: | 10 | % Riffle: | 30 | % Run: | 60 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 10 | L.O.D.: | 65 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 20 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | NW | Method Aspect: | AE | Cutbank: | 5 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 0 B 8.0 | 8110 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 10 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-TH-12.-1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 30 m length of stream, 1 pass with no lower net. No fish were caught. Sample site was conducted below the road culvert. |
| C2 | R2 of Th12.1 begins at Th12.2 confluence. The lower 50 m section of R2 is steep (gradient ~20%); above 50 m the gradient decreases to 8 - 10%. Suspect end of fish use at the base of R2 due to impassable steep gradient. |
| C3 | R2 was not surveyed above the road; section should be examined as it seems flow out of cutblock 610#3. |
| C4 | A 4 m high fill on the culvert was noted (Photo A5/18). |
| C5 | R1 was surveyed: section had a gradient of 5 - 7% with a small meandering channel. Bed material was primarily fines. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-TH-12.-1.1-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH12.1.1 | Access: | FT |
| Watershed Code: | 460-6006-508-355-TH-12.-1.1-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.1 Method: MW |
| Location: | -50 D/S FROM ROAD CROSSING. | Site No.: | 5 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6075 .60168 | Photos: | A5/6, 7 Air Photos: BCB 91180 137 |
| Date: | 9/23/96 | Time: | 17:00 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 0.2 | Method Av. Chan. Width (m): | T | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 |
| Av. Wet. Width (m): | 0.2 | Method Av. Wet. Width (m): | T | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 7 | Av. Max. Pool Depth (cm): | 3 | | | | | |
| Gradient (%): | 5.5 | Method Gradient: | CL | | | | | |
| % Pool: | 20 | % Riffle: | 30 | % Run: | 40 | % Other: | 10 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 55 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | W | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 0 C 6.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.1 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | GE |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-355-TH-12-1.1-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Very small seepage with a trickle flow, sand/silt bed material and a 4 - 5% gradient. |
| C2 | Electrofished 30 m length of stream d/s from road. No fish were caught. Potential fish use in the lower 20 m of the tributary. |
| C3 | Small culvert at road covered with a large 6 - 8 m high fill. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-370-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|--------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH13 | Access: | V2 |
| Watershed Code: | 460-6006-508-370-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | ~50 m D/S FROM ROAD CROSSING. | Site No.: | 1 | Length surveyed (m): | 133.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/23/96 | Time: 15:30 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | B4/2 Air Photos: BCB 91180:139 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.3 | Method Av. Chan. Width (m): | T | 1.5 | 0.2 | 1.5 | 1.5 | 1.9 | 1.0 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 1.1 | 0.2 | 0.3 | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 21.5 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 5 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|--------------------|----|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 25 | Method Cover Total %: | GE | | | | |
| Dp Pool: 0 L.O.D.: | 5 | Boulder: 20 | In Veg.: 0 | Over Veg: 25 | Cutbank: | 50 | |
| Crown Closure % : | 10 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: | AE | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 A 22.0 | 4240 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 40 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 17 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | FC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-370-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 21.5% gradient is the average for the whole reach. The gradient was 18 % at the confluence with the Thautil R. which then increased to 20+ % u/s where it remained continuous.
- C2 Discharge was entered with a minimum value but flow is almost zero; consists mainly of stagnant water.
- C3 Electrofished 77 m length of stream below the culvert. No fish were caught. Habitat is not suitable for fish.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Watershed Code:

Stream Survey Report

460-6006-508-381-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|----------------------|-------------------------------------|
| Stream Name: | HAGMAN C. | Stream "Local": | HAGMAN (TH14) | Access: | V2 |
| Watershed Code: | 460-6006-508-381-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.7 Method: MW |
| Location: | INDEX SITE In 1; LOCATED ~ 1300 m U/S FROM THE CONFLUENCE WITH THE THAUTIL R. | Site No.: | 1 | Length surveyed (m): | 1160.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | Y Field: Yes Historical: No |
| | | U.T.M.: | 9.6071 .60177 | Photos: | B9/19 -21 Air Photos: BCB 91180:137 |
| Date: 10/10/96 | Time: 15:00 | Agency: C58 | Survey Crew: JH\SS \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|-----|------|------|------|
| Av. Chan. Width (m): | 13.5 | Method Av. Chan. Width (m): | T | 13.6 | 10.7 | 9.5 | 17.5 | 17.2 | 12.5 |
| Av. Wet. Width (m): | 7.4 | Method Av. Wet. Width (m): | T | 7.8 | 6.5 | 7.8 | | | |
| Av. Max. Rif. Depth (cm): | 27 | Av. Max. Riffle Depth (cm): | MS | 20 | 25 | 35 | | | |
| Av. Max. Pool Depth (cm): | 58 | Av. Max. Pool Depth (cm): | 27 | 65 | 70 | 40 | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 75 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | >40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 75 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | Medium |

Cover

| | | | |
|-------------------|------------|-----------------------|-------------------|
| Cover Total % : | 30 | Method Cover Total %: | GE |
| Dp Pool: 20 | L.O.D.: 20 | Boulder: 40 | In Veg.: 0 |
| Crown Closure % : | 20 | Method Crown Closure: | GE |
| | | Aspect: W | Method Aspect: AE |
| | | Over Veg: 20 | Cutbank: 0 |

Discharge

| | | | |
|----------------------|------|-----------------------------|----|
| Wetted Width (m): | 4.0 | Method Wetted Width (m): | T |
| Mean Depth (m): | 0.3 | Method Mean Depth (m): | MS |
| Mean Velocity (m/s): | 0.50 | Method Mean Velocity (m/s): | VO |
| Discharge (m3/s): | 0.60 | Method Discharge (m3/s): | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV BT SST* | |
| 14 C 2.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 0.8 | % Unstable: | 40 |
| Textures Fines: | No | Gravel: No | Larges: Yes |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 1.5 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Watershed Code:

Stream Survey Report

460-6006-508-381-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 19 | 63 - 92 | J | R | | | EL |
| SST | 25 | 34 - 41 | F | R | | | EL |
| DV | 12 | 67 - 116 | J | R | | | EL |
| BT | 1 | 101 | J | R | | | EL |
| CHF | 17 | 43 - 56 | F | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | X | 3.4 |

Comments

- C1 DV and BT fry were indistinguishable so they were combined as char fry (CHF). Photo B9/21: Dolly Varden - Bull Trout comparison. Two unknown species of fish ~250 mm long were observed in the top of Reach 1. They are suspected to be BT, DV or SST.
- C2 Large bed material provide suitable pockets for juv/fry rearing. Due to abundance of SST fry at this site, it is assumed that SST spawning occurs in R1.
- C3 Air temp: 13.5 C
- C4 Eroding banks were observed: 15 m x 2.5 m bank ~100 m u/s from bridge crossing; 41 m x 20 m high bank ~120 m u/s from bridge (Photo B8/25); 20 m x 8 m high bank slump into channel ~315 m u/s from bridge (Photo B9/4).
- C5 A large debris jam was noted ~170 m u/s from bridge: passable by fish ~572 m u/s from bridge is the u/s end of an unstable, branded section. Observed soil creep on the bank. A 1.5 m high drop over debris was noted 3.4 km u/s from mouth: restricts fish movement but is not a total barrier.
- C6 Tributaries H3 and H4 were small, steep systems (>20%). H3 was dry with no discernible channel at the time of survey.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Stream Survey Report

Watershed Code:

460-6006-508-381-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|------------------------------------|
| Stream Name: | HAGMAN C. | Stream "Local": | HAGMAN (TH14) | Access: | FT |
| Watershed Code: | 460-6006-508-381-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 5.1 Method: MW |
| Location: | BOTTOM END OF ENTRENCHED CANYON, ~3.7 km U/S FROM THAUTIL R. CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 200.0 Method: HC |
| | | Map #: | 0931.034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6071 60177 | Photos: | B9/6 - 8 Air Photos: BCB 91180:137 |
| Date: 10/9/96 | Time: 15:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 8.0 | Method Av. Chan. Width (m): | T | 10.6 | 7.8 | 5.8 | 7.4 | 7.8 | 8.8 |
| Av. Wet. Width (m): | 5.7 | Method Av. Wet. Width (m): | T | 7.7 | 6.1 | 4.6 | 5.5 | 5.8 | 4.6 |
| Av. Max. Rif. Depth (cm): | 27 | Av. Max. Riffle Depth (cm): | MS | 30 | 30 | 20 | | | |
| Av. Max. Pool Depth (cm): | 58 | Av. Max. Pool Depth (cm): | 27 | 60 | 45 | 50 | 75 | | |
| Gradient (%): | 2.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 25 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 15 | L.O.D.: 15 | Boulder: 50 | In Veg.: 0 | Over Veg: 20 | Cutbank: 0 | | | | |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : W | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|--|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | | | | | | | | |
| Discharge (m3/s) : | Method Discharge (m3/s) : | | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 8 A 25.0 | 1261 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 10 | % Bedrock: | 10 |
| D90 (cm): | 35 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|--------------------------|
| Height (m): | 0.9 | % Unstable: | 5 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: Yes |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 1.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | EC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Watershed Code:

Stream Survey Report

460-6006-508-381-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 4 | F | 6.1 |
| | 4 | F | 6.8 |

Comments

- C1 Fish observed in the top section of the lower reach (R1). Suspected SST, DV and BT.
- C2 Massive debris jam with ~ 1.5 m high drop is located at the base of the gorge, ~200 m d/s from the top of R1 (Photos B9/6, 7); potential migration restriction. Fish of unknown species were observed just u/s from the debris jam.
- C3 4.0 m falls and 3.5 m falls were observed in the middle section of R2; They are definite barriers to fish.
- C4 All tributaries flowing into R2 of Hagman C. are too steep to support fish. Based on the gradient and the sampling data obtained from sample sites 2, 3, 7, 8, 9, and 10, Hagman C. and inflowing tributaries u/s from the 4 m high falls (located ~100 m d/s from H10) are assumed to be barren of fish.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Watershed Code:

Stream Survey Report

460-6006-508-381-000-000-000-000-000-000-000

Header Information

| | | | | | | | | | | | |
|-----------------|--|-----------------|---------------|-------------|---------------|----------------------|-------|---------|-----|-------------|----|
| Stream Name: | HAGMAN C. | Stream "Local": | HAGMAN (TH14) | Access: | H | | | | | | |
| Watershed Code: | 460-6006-508-381-000-000-000-000-000-000-000 | Map #: | 093L034 | Reach No.: | 3 | Reach Length (km): | 3.5 | Method: | MW | | |
| Location: | UPPER SECTION ~9.4 km U/S FROM MOUTH | U.T.M.: | 9.6071 .60177 | Site No.: | 2 | Length surveyed (m): | 100.0 | Method: | HC | | |
| Date: | 9/19/96 | Time: | 16:30 | Agency: | C58 | Fish Card: | N | Field: | Yes | Historical: | No |
| Survey Crew: | SS\CP\ \ \ \ \ \ | Photos: | DB2/4, 5 | Air Photos: | BCB 91180:133 | | | | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 4.0 | Method Av. Chan. Width (m): | T | 4.1 | 4.4 | 3.9 | 3.9 | 4.2 | 3.4 |
| Av. Wet. Width (m): | 4.0 | Method Av. Wet. Width (m): | T | 4.1 | 4.4 | 3.9 | 3.9 | 4.2 | 3.4 |
| Av. Max. Rif. Depth (cm): | 17 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 56 | Av. Max. Pool Depth (cm): | 17 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 80 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|----------|---|
| Cover Total %: | 55 | Method Cover Total %: | GE | | | | | | | | |
| Dp Pool: | 15 | L.O.D.: | 0 | Boulder: | 35 | In Veg.: | 0 | Over Veg.: | 50 | Cutbank: | 0 |
| Crown Closure %: | 0 | Method Crown Closure: | GE | Aspect: | N | Method Aspect: | AE | | | | |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.99 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 4 B 1.5 | 1181 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 80 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 5 | % Bedrock: | 5 |
| D90 (cm): | 23 | Compaction: | Medium |

Banks

| | | | | | | | |
|----------------------|-----|--------------------------|----|---------|----|----------|----|
| Height (m): | 0.3 | % Unstable: | 0 | | | | |
| Textures Fines: | Yes | Gravel: | No | Larges: | No | Bedrock: | No |
| Confinement: | 2 | | | | | | |
| Valley: Chan. Ratio: | 2 | | | | | | |
| Stage: | M | | | | | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS | | | | |
| Braided: | N | Method Braided: | GE | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | |
| pH: | | Method pH: | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | |
| Water Temp. (°C): | 6.8 | Method Temperature: | 1C | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | |
| Cond. (µmhos): | 47 | Method Conductivity: | CM | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Watershed Code:

Stream Survey Report

460-6006-508-381-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Electrofished 35 m length of stream. No fish were caught. Assume upper reaches barren of fish (see stream survey form for R2). 4.0 m high falls and 3.5 m high falls observed in the middle of R2 are definite barriers to fish migration.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Stream Survey Report

Watershed Code:

460-6006-508-381-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|------------------|
| Stream Name: | HAGMAN C. | Stream "Local": | HAGMAN (TH14) | Access: | H |
| Watershed Code: | 460-6006-508-381-000-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 3.5 Method: MW |
| Location: | AT JUNCTION OF H24 AND H25, BELOW WETLAND (PONDED) COMPLEX. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N |
| | | U.T.M.: | 9.6071 60177 | Field: | Yes |
| Date: 9/20/96 | Time: 9:30 | Agency: C58 | Survey Crew: RD\CPA \ \ \ \ \ | Historical: | No |
| | | | | Photos: | A4/23, 24 |
| | | | | Air Photos: | BCB 91180,132 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 5.7 | Method Av. Chan. Width (m): | T | 4.8 | 6.5 | 4.6 | 4.8 | 7.1 | 6.1 |
| Av. Wet. Width (m): | 4.0 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 50 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 40 | % Riffle: | 20 | % Run: | 40 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 85 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 75 |
| % Larges: | 10 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 6 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool : | 20 | L.O.D.: | 0 |
| | | Boulder: | 0 |
| | | In Veg.: | 0 |
| | | Over Veg.: | 0 |
| | | Cutbank: | 80 |
| Crown Closure % : | 0 | Method Crown Closure: | GE |
| | | Aspect : | NW |
| | | Method Aspect: | AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.35 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 6 D 0.5 | 1810 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.35 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C.

Watershed Code:

Stream Survey Report

460-6006-508-381-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Electrofished 50 m length of stream, 1 pass (u/s and d/s) with a lower net. No fish were caught.
- C2Small, low gradient, stable creek containing fine gravel bed material: excellent resident DV spawning potential. Cover is primarily pool and cutbank. Creek meanders through a meadow.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-118-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|-------------------------------------|
| Stream Name: | HAGMAN C. TRIBUTARY | Stream "Local": | HI | Access: | FI |
| Watershed Code: | 460-6006-508-381-118-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | LOCATED ~39 m U/S FROM MOUTH. | Site No.: | 4 | Length surveyed (m): | 260.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/10/96 | Time: 13:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ \ \ | Photos: | B9/13, 14 Air Photos: BCB 91180:137 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6085 .60181 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 2.2 | 1.6 | 1.6 | 1.7 | 1.6 | 1.5 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.2 | 1.8 | 1.2 | 1.3 | 1.3 | 1.1 |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | 10 | 12 | 10 | | | |
| Av. Max. Pool Depth (cm): | 47 | Av. Max. Pool Depth (cm): | 11 | 45 | 45 | 50 | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 60 | % Run: | 20 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 25 | L.O.D.: | 20 | Boulder: | 10 | In Veg.: | 0 | Over Veg: | 20 |
| Crown Closure % : | 50 | Method Crown Closure: | GE | Aspect : | SW | Method Aspect: | AE | Cutbank: | 25 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|---------------|--|--|--|--|--|
| Wetted Width (m) : | 1.0 | Method Wetted Width (m) : | T | Specific Data | | | | | |
| Mean Depth (m) : | 0.2 | Method Mean Depth (m) : | MS | | | | | | |
| Mean Velocity (m/s) : | 0.50 | Method Mean Velocity (m/s) | F | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 2 B 5.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 55 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 35 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.6 | % Unstable: | 15 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 7.5 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 110 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-118-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 5 | 70 - 110 | J | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | F | 0.1 |

Comments

- C1 Electrofished 110 m length of stream. DV were captured.
- C2 ~ 60 m u/s from mouth, a 0.7 m high falls was observed. No fish were captured in the 75 m which was electroshocked above the falls.
- C3 Air temp: 11 C.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-118-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|-------------------------------------|
| Stream Name: | HAGMAN C. TRIBUTARY | Stream "Local": | H1 | Access: | FT |
| Watershed Code: | 460-6006-508-381-118-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.6 Method: MW |
| Location: | LOCATED ~423 m U/S FROM MOUTH. | Site No.: | 5 | Length surveyed (m): | 163.0 Method: IIC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/10/96 | Time: 16:30 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | B9/15, 16 Air Photos: BCB 91180:137 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6085 .60181 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 2.3 | 2.3 | 1.5 | 1.8 | 1.6 | 1.8 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.5 | 2.2 | 1.4 | 1.3 | 1.2 | 1.2 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | 7 | 10 | 10 | | | |
| Av. Max. Pool Depth (cm): | 33 | Av. Max. Pool Depth (cm): | 9 | 40 | 35 | 25 | | | |
| Gradient (%): | 12.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 85 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 50 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 35 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 35 | Method Cover Total %: | GE |
| Dp Pool : | 20 | L.O.D.: | 20 |
| Boulder: | 20 | In Veg.: | 0 |
| Over Veg.: | 20 | Cutbank: | 20 |
| Crown Closure % : | 65 | Method Crown Closure: | GE |
| Aspect : | SW | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.4 | % Unstable: | 10 |
| Textures Fines: | No | Gravel: | No |
| Confinement: | 3 | Larges: | Yes |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ilt(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 110 | Method Conductivity: | CM |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 2 B 12.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-118-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | ~110 | J | R | | | VO |

Obstructions

Comments

- C1 1 DV was visually observed at the bottom of R2 despite no catch in 75 m long site in R1.
- C2 R3 and R4 of tributary H1 were surveyed by air: suspect fish use to the top of R3 at 2400 m.
- C3 H1.1, H1.2 and H1.3 were surveyed by air: tributary H1.1 is very steep and enters H1 in a very confined section of the creek (no fish access); tributary H1.2 suspected to have fish access in the lower 120 m of creek; tributary H1.3 suspected to have fish access in the lower 400 m of creek.
- C4 Air temp: 11 C

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-162-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|--------------------|---|
| Stream Name: | HAGMAN C. TRIBUTARY | Stream "Local": | H2 | Access: | FT |
| Watershed Code: | 460-6006-508-381-162-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | LOCATED ~913 m U/S FROM HAGMAN C. BRIDGE CROSSING. | Map #: | 093L034 | Site No.: | 6 Length surveyed (m): 138.0 Method: HC |
| Date: | 10/9/96 | U.T.M.: | 9.6092 .60181 | Fish Card: | N Field: Yes Historical: No |
| Time: | 16:45 | Agency: | C58 | Photos: | B9/10, 12 Air Photos: BCB 91180:137 |
| Survey Crew: | JH/SS \ \ \ \ \ \ \ \ | | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 2.1 | 2.4 | 2.0 | 2.0 | 1.9 | 1.7 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.6 | 1.2 | 1.3 | 1.8 | 1.7 | 1.4 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | 10 | 5 | 5 | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 7 | 23 | 30 | 30 | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 85 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | >40 | Method Side Channel: | HC | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 5 | L.O.D.: | 20 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 60 |
| Crown Closure % : | 65 | Method Crown Closure: | GE | Aspect : | N | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV * | |
| 2 D 4.0 | 4510 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 55 | Small (2-16mm): | 30 |
| | | Large (16-64mm): | 25 |
| % Larges: | 5 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 2 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 40 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 110 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-162-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 130 | A | S | | | VO |

Obstructions

Comments

- C1 3 DV redds were observed ~35 m u/s from H2 mouth. 3 DV redds were also observed ~50 m u/s from H2 mouth.
- C2 The distributaries around the base of the alluvial fan were included in the sidechannel percentage. The channel braids into the alluvial fan at ~ 80 m u/s from the H2 mouth.
- C3 ~138 m u/s from the mouth is the top of the alluvial fan, the base of the gully, the end of the reach, and the top of the fish distribution. Gradient of 20% is continuous u/s of this point.
- C4 Air temp at sample site: 11.5 C

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-422-H15-.1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|---------------------------------|
| Stream Name: | HAGMAN C. TRIBUTARY | Stream "Local": | H15.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-381-422-H15-.1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | LOCATED AT THE WETLAND OUTLET. | Site No.: | 7 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6130 .60189 | Photos: | A4/20 Air Photos: BCB 91180:133 |
| Date: 9/19/96 | Time: 15:20 | Agency: C58 | Survey Crew: RD\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | T | 0.3 | 0.5 | 0.6 | 0.4 | 0.3 | 0.4 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.3 | 0.5 | 0.6 | 0.4 | 0.3 | 0.4 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 50 | % Run: 30 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 20 | L.O.D.: 0 | Boulder: 0 | In Veg.: 0 | Over Veg: 10 | Cutbank: 70 | | | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 0 B 5.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 70 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | Medium |

Banks

| | | | |
|----------------------|------|--------------------------|------------------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 10.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-422-H15-.1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Minnow trapped 100 m section of channel below the pond. Set 5 traps overnight and caught no fish.
- C2Small, stable creek confined in narrow channel. Overstream grassed-in meadow d/s.

DFO/MoELP Stream Survey Form

26-Mur-9"

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-422-606-335-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|----------------|--|------|-----------------|----|----------------------------------|-----|-----------------------------|----|---|--|---------------------|-----|----------------------------|----|----------|---|---------------------------|--|-----------------------------|----|------------|----|---------------------------|------|---------------------------|----|----------|----|--|-----|------------------|----|----------------|----|---|----|-----------|----|---------|----|---------------------------------|----------------|-------------|---|-----------------|-----|-----------------|----|----------------------|----|---------|----|----------------------|------|---------------------|----|--------|---|---|--|--------------------|---|---------------------|----|-----------------|-----|-----------------|-----|------------|---|-----------------|----|-----|--|------------------|---|-----------|---|--------------------------|---|-------------------|--|---------------------------|---|-------------|--|--------------------------|---|----------------|---|----------------------|---|-----------|---|-------------|------|
| Stream Name: | | HAGMAN C. TRIBUTARY | | Stream "Local": | | H23.1 | | Access: | | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: | | 460-6006-508-381-422-606-335-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 0.4 Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | | SAMPLED BELOW THE SHALLOW LAKE OUTLET. | | Map #: | | 0931.024 | | Site No.: | | 8 Length surveyed (m): 100.0 Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | U.T.M.: | | 9.6148 .60179 | | Fish Card: | | N Field: Yes Historical: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 9/19/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: RDA \ \ \ \ \ \ \ \ | | Photos: | | no photo Air Photos: BCB 91180:133 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0"> <tr> <td>Av. Chan. Width (m):</td> <td>0.3</td> <td>Method Av. Chan. Width (m):</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>0.3</td> <td>Method Av. Wet. Width (m):</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td></td> <td>Av. Max. Riffle Depth (cm):</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td></td> <td>Av. Max. Pool Depth (cm):</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>Gradient (%):</td> <td>5.0</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="2"></td> </tr> <tr> <td>% Pool:</td> <td>10</td> <td>% Riffle:</td> <td>30</td> <td>% Run:</td> <td>60</td> </tr> <tr> <td></td> <td></td> <td>% Other:</td> <td>0</td> <td colspan="2">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>% Debris Area:</td> <td>0-10</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="2"></td> </tr> </table> | | | | | | Av. Chan. Width (m): | 0.3 | Method Av. Chan. Width (m): | GE | | | Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | GE | | | Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | Gradient (%): | 5.0 | Method Gradient: | CL | | | % Pool: | 10 | % Riffle: | 30 | % Run: | 60 | | | % Other: | 0 | Method: GE | | % Side Channel: | 0 | Method Side Channel: | GE | | | % Debris Area: | 0-10 | Method Debris Area: | GE | | | <table border="0"> <tr> <td>% Fines (<2mm):</td> <td>100</td> <td>% Fines (<2mm):</td> <td>100</td> </tr> <tr> <td>% Gravels:</td> <td>0</td> <td>Small (2-16mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>0</td> </tr> <tr> <td>% Larges:</td> <td>0</td> <td>Small cobble (64-128mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>0</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>0</td> <td>Compaction:</td> <td>High</td> </tr> </table> | | | | | | % Fines (<2mm): | 100 | % Fines (<2mm): | 100 | % Gravels: | 0 | Small (2-16mm): | 0 | | | Large (16-64mm): | 0 | % Larges: | 0 | Small cobble (64-128mm): | 0 | | | Large cobble (128-256mm): | 0 | | | Boulder cobble (>256mm): | 0 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 0 | Compaction: | High |
| Av. Chan. Width (m): | 0.3 | Method Av. Chan. Width (m): | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: | 10 | % Riffle: | 30 | % Run: | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | % Other: | 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 0 | Small (2-16mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 0 | Small cobble (64-128mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 0 | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0"> <tr> <td>Cover Total % :</td> <td>50</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Dp Pool:</td> <td>10</td> <td>L.O.D.:</td> <td>10</td> <td>Boulder:</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>In Veg.:</td> <td>30</td> <td>Over Veg.:</td> <td>30</td> </tr> <tr> <td>Crown Closure % :</td> <td>0</td> <td>Method Crown Closure:</td> <td>GE</td> <td>Aspect :</td> <td>SE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Method Aspect:</td> <td>AE</td> </tr> </table> | | | | | | Cover Total % : | 50 | Method Cover Total %: | GE | | | Dp Pool: | 10 | L.O.D.: | 10 | Boulder: | 0 | | | In Veg.: | 30 | Over Veg.: | 30 | Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : | SE | | | | | Method Aspect: | AE | <table border="0"> <tr> <td>Height (m):</td> <td>0.1</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel:</td> <td>No</td> </tr> <tr> <td>Confinement:</td> <td>5</td> <td>Larges:</td> <td>No</td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>4</td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Stage:</td> <td>L</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0</td> <td>Method Flood Signs:</td> <td>GE</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>0</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td></td> <td>Method pH:</td> <td></td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td></td> <td>Method Temperature:</td> <td></td> </tr> <tr> <td>Turb. (cm):</td> <td></td> <td>Method Turbidity:</td> <td></td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </table> | | | | | | Height (m): | 0.1 | % Unstable: | 0 | Textures Fines: | Yes | Gravel: | No | Confinement: | 5 | Larges: | No | Valley: Chan. Ratio: | 4 | Bedrock: | No | Stage: | L | | | Flood Signs Ht(m): | 0 | Method Flood Signs: | GE | Braided: | N | Method Braided: | GE | Bars (%): | 0 | Method Bars: | GE | pH: | | Method pH: | | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | | Method Temperature: | | Turb. (cm): | | Method Turbidity: | | Cond. (µmhos): | | Method Conductivity: | | | | | |
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: | 10 | L.O.D.: | 10 | Boulder: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | In Veg.: | 30 | Over Veg.: | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : | SE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Method Aspect: | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 0.1 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 5 | Larges: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 4 | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | | Method pH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | | Method Temperature: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | | Method Turbidity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0"> <tr> <td>Wetted Width (m) :</td> <td></td> <td>Method Wetted Width (m) :</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>Mean Depth (m) :</td> <td></td> <td>Method Mean Depth (m) :</td> <td></td> <td colspan="2"></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td></td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> <td colspan="2"></td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.01</td> <td>Method Discharge (m3/s) :</td> <td></td> <td colspan="2"></td> </tr> </table> | | | | | | Wetted Width (m) : | | Method Wetted Width (m) : | | | | Mean Depth (m) : | | Method Mean Depth (m) : | | | | Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | <table border="0"> <tr> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2">NF</td> </tr> <tr> <td>0 D 5.0</td> <td>F</td> </tr> <tr> <td>(Width, Valley: Channel, Slope)</td> <td>(Bed Material)</td> </tr> </table> | | | | | | (Fish) | | NF | | 0 D 5.0 | F | (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 D 5.0 | F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-422-606-335-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Minnow trapped section of stream using 5 traps set overnight. No fish were caught. Poor fish habitat.
- C2No continuous defined channel with a trickle flow discharge. Stagnant water in stream sections with drops over forest / moss benches.
- C3The gradient recorded is the average and does not accurately show the slope characteristics of the stream; the slope was 1% and only increased to ~9% when the stream passed over a meadow bench.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-606-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|-------------------------------------|
| Stream Name: | HAGMAN C. TRIBUTARY | Stream "Local": | H23 | Access: | 11 |
| Watershed Code: | 460-6006-508-381-606-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.3 Method: MW |
| Location: | SAMPLED BELOW THE LAKE OUTLET. | Site No.: | 9 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L024 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6148 .60179 | Photos: | A4/21, 22 Air Photos: BCB 91180:133 |
| Date: | 9/19/96 | Time: | 17:00 | Agency: | C58 |
| | | Survey Crew: | RD\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 1.3 | 1.4 | 1.0 | 1.1 | 1.0 | 1.3 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | 1.3 | 1.4 | 1.0 | 1.1 | 1.0 | 1.3 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 30 | % Run: 60 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|-------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 10 | L.O.D.: 0 | Boulder: 30 | In Veg.: 20 | Over Veg: 20 | Cutbank: 20 | | | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect: NE | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | NF | |
| I B 0.5 | 1360 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 60 | Small cobble (64-128mm): | 55 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 10.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-606-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Minnow trapped 60 m section of stream. Set 6 traps overnight and no fish were caught or observed.
- C2 Small, stable creek containing instream grass.
- C3 Easy fish access at lake outlet.
- C4 Bed material consists of large/fine gravel and small cobble: unsuitable for spawning.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-622-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|------------------|
| Stream Name: | HAGMAN C. TRIBUTARY | Stream "Local": | H25 | Access: | H |
| Watershed Code: | 460-6006-508-381-622-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.6 Method: MW |
| Location: | BEAVER PONDED AREA ON H25; JUST ACROSS FROM MAIN HAGMAN C. | Site No.: | 0 | Length surveyed (m): | 100.0 Method: GE |
| | | Map #: | 093L024 | Fish Card: | N |
| | | U.T.M.: | 9.6149 .60179 | Field: | Yes |
| Date: 9/19/96 | Time: 16:00 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | DB2/2 |
| | | | | Air Photos: | BCB 91180:132 |

Channel Characteristics

| | | | |
|---------------------------|-------------|-----------------------------|------------|
| Av. Chan. Width (m): | 35.0 | Method Av. Chan. Width (m): | GE |
| Av. Wet. Width (m): | 7.5 | Method Av. Wet. Width (m): | GE |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | MS |
| Av. Max. Pool Depth (cm): | 50 | Av. Max. Pool Depth (cm): | 0 |
| Gradient (%): | 0.0 | Method Gradient: | CL |
| % Pool: 100 | % Riffle: 0 | % Run: 0 | % Other: 0 |
| Method: GE | | | |
| % Side Channel: | 0 | Method Side Channel: | GE |
| % Debris Area: | 0 | Method Debris Area: | GE |

Specific Data

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Cover

| | | | |
|-------------------|-----------|-----------------------|-------------------|
| Cover Total % : | 75 | Method Cover Total %: | GE |
| Dp Pool: 0 | L.O.D.: 0 | Boulder: 0 | In Veg.: 0 |
| | | Over Veg: 100 | Cutbank: 0 |
| Crown Closure % : | 10 | Method Crown Closure: | GE |
| | | Aspect : W | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | | Method Braided: | |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.07 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 35 D 0.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: HAGMAN C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-381-622-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Sampling conducted in maze of beaver ponds/active dams ~0.5 m high. Unable to measure channel and wetted widths as water was too deep to cross; width estimates were made. The wetted widths varied based on the beaver dams.
- C2 Minnow trapped area using 5 traps set overnight. No fish were caught.
- C3 Lat/Lon of helicopter landing site: 54 17.99 127 13.49
- C4 SHOULD BE SITE 10, but this program would not allow any more than 1 digit to be entered.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-392-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|--|--|-----------------------------|--|-----------------------------|--|--------------------------|--|---------------------------|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH15 | | Access: | | V2 | |
| Watershed Code: | | 460-6006-508-392-000-000-000-000-000-000-000 | | | | | | Reach No.: | | 1 | |
| Location: | | LOCATED AT ROAD CROSSING. | | Map #: | | 093L034 | | Site No.: | | 1 | |
| | | | | U.T.M.: | | 9.6070 .60180 | | Fish Card: | | N | |
| Date: 9/25/96 | | Time: 10:00 | | Agency: C58 | | Survey Crew: JHSS \ \ \ \ \ | | Photos: | | B4/15, 16 | |
| | | | | | | | | Air Photos: | | BCB 91180 159 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 2.6 | | Method Av. Chan. Width (m): | | T | | % Fines (<2mm): | | 10 | |
| Av. Wet. Width (m): | | 0.9 | | Method Av. Wet. Width (m): | | T | | % Gravels: | | 65 | |
| Av. Max. Rif. Depth (cm): | | 5 | | Av. Max. Riffle Depth (cm): | | MS | | % Larges: | | 25 | |
| Av. Max. Pool Depth (cm): | | 25 | | Av. Max. Pool Depth (cm): | | 5 | | Small (2-16mm): | | Large (16-64mm): | |
| Gradient (%): | | 7.0 | | Method Gradient: | | CL | | Small cobble (64-128mm): | | Large cobble (128-256mm): | |
| % Pool: 20 | | % Riffle: 80 | | % Run: 0 | | % Other: 0 | | Boulder cobble (>256mm): | | | |
| % Side Channel: | | | | Method Side Channel: | | GE | | % Bedrock: | | 0 | |
| % Debris Area: | | 25 | | Method Debris Area: | | GE | | D90 (cm): | | 13 | |
| | | | | | | | | Compaction: | | High | |
| Cover | | | | Banks | | | | | | | |
| Cover Total % : | | 35 | | Method Cover Total %: | | GE | | Height (m): | | 0.5 | |
| Dp Pool: 15 | | L.O.D.: 60 | | Boulder: 10 | | In Veg.: 0 | | Over Veg: 10 | | Cutbank: 5 | |
| Crown Closure % : | | 60 | | Method Crown Closure: | | GE | | Aspect : | | E | |
| | | | | | | | | Method Aspect: | | AE | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Textures Fines: | | No | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Confinement: | | 2 | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | Valley: Chan. Ratio: | | 2 | |
| Discharge (m3/s) : | | 0.01 | | Method Discharge (m3/s) : | | | | Stage: | | M | |
| | | | | | | | | Flood Signs Ht(m): | | 0.35 | |
| | | | | | | | | Method Flood Signs: | | MS | |
| | | | | | | | | Braided: | | Y | |
| | | | | | | | | Method Braided: | | GE | |
| | | | | | | | | Bars (%): | | 15 | |
| | | | | | | | | Method Bars: | | GE | |
| | | | | | | | | pH: | | 7.9 | |
| | | | | | | | | Method pH: | | PH | |
| | | | | | | | | O2 (ppm): | | | |
| | | | | | | | | Method Dissolved Oxygen: | | | |
| | | | | | | | | Water Temp. (°C): | | 5.0 | |
| | | | | | | | | Method Temperature: | | TC | |
| | | | | | | | | Turb. (cm): | | 200 | |
| | | | | | | | | Method Turbidity: | | GE | |
| | | | | | | | | Cond. (µmhos): | | | |
| | | | | | | | | Method Conductivity: | | | |
| Reach Symbol | | | | (Fish) | | | | | | | |
| | | | | NF | | | | | | | |
| | | | | 3 B 7.0 1720 | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-392-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Electrofished 125 m length of stream. No fish were caught.
- C2Lower end of Th15 consists of stagnant water or dry channel. Stream may be flowing in old flood channel of Thautil R. and suspect possible fish use at peak flows. ~193 m and w/s from the mouth, channel is continuously wetted and fish habitat is present.
- C3No channel or flow was observed for Th15.1.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-392-T11-15-1 -000-000-000-000-000

| Header Information | | | | | | | | | | | | |
|---------------------------------|--|--|--|------------------------------|--|------------------------------------|--|----------------------|--|---|--|----------------------------|
| Stream Name: | | THAUTIL R TRIBUTARY | | Stream "Local": | | TH15.1 | | Access: | | V2 | | |
| Watershed Code: | | 460-6006-508-392-T11-15-1 -000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 0.9 Method: MW | | |
| Location: | | LOCATED ~50 m D/S FROM ROAD CROSSING. | | Map #: | | 093L034 | | Site No.: | | 2 Length surveyed (m): 100.0 Method: HC | | |
| | | | | U.T.M.: | | 9 6068 60185 | | Fish Card: | | N Field: Yes Historical: No | | |
| Date: 9/25/96 | | Time: 12:00 | | Agency: C58 | | Survey Crew: JH/SS \ \ \ \ \ \ \ \ | | Photos: | | B4/20 Air Photos: BCB 91180:159 | | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | | |
| Av. Chan. Width (m): | | 0.6 Method Av. Chan. Width (m): | | T | | 0.7 0.8 0.4 0.8 0.3 0.3 | | % Fines (<2mm): | | 70 % Fines (<2mm): 70 | | |
| Av. Wet. Width (m): | | 0.2 Method Av. Wet. Width (m): | | T | | | | % Gravels: | | 25 Small (2-16mm): Large (16-64mm): | | |
| Av. Max. Rif. Depth (cm): | | 3 Av. Max. Riffle Depth (cm): | | MS | | | | % Larges: | | 5 Small cobble (64-128mm): Large cobble (128-256mm): Boulder cobble (>256mm): | | |
| Av. Max. Pool Depth (cm): | | 13 Av. Max. Pool Depth (cm): | | 3 | | | | % Bedrock: | | 0 % Bedrock: 0 | | |
| Gradient (%): | | 17.0 Method Gradient: | | CL | | | | D90 (cm): | | 4 Compaction: High | | |
| % Pool: 20 | | % Riffle: 80 | | % Run: 0 | | % Other: 0 Method: GE | | | | | | |
| % Side Channel: | | 0 Method Side Channel: | | GE | | | | | | | | |
| % Debris Area: | | 10-40 Method Debris Area: | | GE | | | | | | | | |
| Cover | | | | | | | | Banks | | | | |
| Cover Total % : | | 70 Method Cover Total %: | | GE | | | | Height (m): | | 0.2 % Unstable: 10 | | |
| Dp Pool: 20 L.O.D.: | | 5 Boulder: 5 In Veg.: | | 0 Over Veg: 50 Cutbank: | | 20 | | Textures Fines: | | Yes Gravel: No Larges: No Bedrock: No | | |
| Crown Closure % : | | 20 Method Crown Closure: | | GE Aspect: NE Method Aspect: | | AE | | Confinement: | | 3 | | |
| Discharge | | | | Specific Data | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Valley: Chan. Ratio: | | 2 | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Stage: | | L | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | Flood Signs Ht(m): | | 0.15 Method Flood Signs: MS | | |
| Discharge (m3/s) : | | 0.01 Method Discharge (m3/s) : | | | | | | Braided: | | N Method Braided: GE | | |
| Reach Symbol | | | | | | | | | | | | |
| | | | | (Fish) | | | | | | | | |
| | | | | NS | | | | | | | | |
| | | | | I B 17.0 7210 | | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | | |
| | | | | | | | | pH: | | | | 7.5 Method pH: PH |
| | | | | | | | | O2 (ppm): | | | | Method Dissolved Oxygen: |
| | | | | | | | | Water Temp. (°C): | | | | 5.5 Method Temperature: TC |
| | | | | | | | | Turb. (cm): | | | | Method Turbidity: |
| | | | | | | | | Cond. (µmhos): | | | | Method Conductivity: |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-392-TH-15-1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Channel is seasonally wetted. At this level, discharge consists of a trickle flow.
- C2No fish habitat present in this creek; no electrofishing site was performed in this reach and no fish were observed.
- C3R1 d/s contained no wetted channel and no fish habitat. Potential for lower section of R1 to form a high water refuge. Average gradient for R1: 3.5%.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -16 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R TRIBUTARY | Stream "Local": | TH16 | Access: | V2 |
| Watershed Code: | 460-6006-508-TH -16 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.5 Method: MW |
| Location: | SURVEYED BELOW ROAD. | Site No.: | 1 | Length surveyed (m): | 250.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/21/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A14/7, 8 Air Photos: BCB 91180:159 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6073 .60186 | | |

Channel Characteristics

| | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | | |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | T | 0.2 | 0.3 |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | |
| Av. Max. Pool Depth (cm): | 8 | Av. Max. Pool Depth (cm): | 2 | | |
| Gradient (%): | 38.0 | Method Gradient: | CL | | |
| % Pool: 5 | % Riffle: 95 | % Run: 0 | % Other: 0 | Method: GE | |
| % Side Channel: | 0 | Method Side Channel: | GE | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 70 | % Fines (<2mm): | 70 |
| % Gravels: | 5 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 5 |
| % Larges: | 25 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 15 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 14 | Compaction: | Medium |

Cover

| | | | | | |
|-------------------|-----------|-----------------------|------------|-------------|-------------------|
| Cover Total % : | 10 | Method Cover Total %: | GE | | |
| Dp Pool: 5 | L.O.D.: 0 | Boulder: 95 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : W | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | GE |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 15 | Method Turbidity: | MS |
| Cond. (µmhos): | 20 | Method Conductivity: | CM |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 0 A 38.0 | 7120 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -16 -000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 Air temp: 1.5 C

C2 No defined channel above the road. Below the road, 30 - 45 % gradient for 100 m, sections with no defined channel, and bed material consisting of sand/silt. Tributary likely dewatered; suspect when surveyed, only wetted due to snow melt. Below 100 m, enters Thautil R. floodplain; channel is not defined but there is evidence of old Thautil R. flood channels which may no longer be used.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-414-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH17 | Access: | V2 |
| Watershed Code: | 460-6006-508-414-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.5 Method: MW |
| Location: | SURVEYED BELOW ROAD NEAR BLK 611#1. | Site No.: | 1 | Length surveyed (m): | 140.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6074 .60187 | Photos: | T1/15, 16 Air Photos: BCB 91180:159 |
| Date: | 3/13/96 | Time: | 14:00 | Agency: | C58 |
| | | Survey Crew: | RD\DA \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.8 | 0.7 | 0.9 | 0.8 | 0.8 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.8 | 0.7 | 0.9 | 0.8 | 0.8 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 7 | | | | | |
| Gradient (%): | 16.0 | Method Gradient: | CL | | | | | |
| % Pool: | 10 | % Riffle: | 90 | % Run: | 0 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 30 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 40 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | Medium |

Cover

| | | | |
|-------------------|----|-----------------------|------------------------------|
| Cover Total % : | 30 | Method Cover Total %: | GE |
| Dp Pool : | 30 | L.O.D.: | 70 |
| Boulder: | 0 | In Veg.: | 0 |
| Over Veg: | 0 | Cutbank: | 0 |
| Crown Closure % : | | Method Crown Closure: | Aspect : W Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| I A 16.0 | 4240 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 5.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-414-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C17 minnow traps were set in a section of stream near the road crossing. No fish were caught. Suspect lower 30 m is used by fish moving up from Thautil R. Good off-channel rearing during high flow events on floodplain of Thautil R. Access restricted to high flow conditions.
- C2Stable creek; moss covered rocks and LOD. Incised gully with 80% sideslopes. Moderate potential for debris transport.
- C3Large amount of fill was required at road crossing; sediment transport is a concern.

DFO/MoELP Stream Survey Form

2-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -18 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------------|----------------------|------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH18 | Access: | FT |
| Watershed Code: | 460-6006-508-TH -18 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.7 Method: MW |
| Location: | SOUTH BOUNDARY OF PROPOSED BLK 611#1, ~150 m D/S FROM ROAD CROSSING. | Site No.: | 1 | Length surveyed (m): | 150.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N |
| | | U.T.M.: | 9.6074 .60189 | Field: | Yes |
| Date: 6/14/96 | Time: 13:45 | Agency: C58 | Survey Crew: RD\DA \ \ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | T1/19 |
| | | | | Air Photos: | BCB 91180:159 |

Channel Characteristics

| | | | |
|---------------------------|--------------|-----------------------------|------------|
| Av. Chan. Width (m): | 0.2 | Method Av. Chan. Width (m): | T |
| Av. Wet. Width (m): | 0.1 | Method Av. Wet. Width (m): | T |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | |
| Gradient (%): | 14.0 | Method Gradient: | CL |
| % Pool: 0 | % Riffle: 02 | % Run: 0 | % Other: 0 |
| | | Method: GE | |
| % Side Channel: | 0 | Method Side Channel: | GE |
| % Debris Area: | 0-10 | Method Debris Area: | GE |

Specific Data

Bed Material

| | | | |
|-----------------|-----|---------------------------|--------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | Medium |

Cover

| | |
|-------------------|---|
| Cover Total % : | Method Cover Total %: |
| Dp Pool : L.O.D.: | Boulder: In Veg.: Over Veg: Cutbank: |
| Crown Closure % : | Method Crown Closure: Aspect : Method Aspect: |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | 5 |
| Valley: Chan. Ratio: | 5 |
| Stage: | 1. |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | N Method Braided: GE |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

Discharge

| | |
|----------------------|-------------------------------|
| Wetted Width (m): | Method Wetted Width (m): |
| Mean Depth (m): | Method Mean Depth (m): |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) VO |
| Discharge (m3/s): | 0.01 Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 0 E 14.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

2"-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH-18-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Small seepage with no defined channel at the road crossing, trickle flow. ~150 m d/s from road crossing intermittent channel. |
| C2 | No debris transport capability, low sediment transport capability, no fish habitat. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-446-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH21 | Access: | FI |
| Watershed Code: | 460-6006-508-446-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.0 Method: MW |
| Location: | AT ROAD CROSSING, ~680 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 730.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6078 .60198 | Photos: | T1/I3, 14 Air Photos: BCB 91180:161 |
| Date: 6/13/96 | Time: 15:00 | Agency: C58 | Survey Crew: RD\DA \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | |
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 0.6 | 1.0 | 0.4 | 1.8 | 0.9 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.6 | 1.0 | 0.4 | 1.4 | 0.9 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 7 | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 60 | % Run: 20 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|-----|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 50 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 30 |
| % Larges: | 35 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | Low |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|----------------|----|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | |
| Dp Pool : 0 | L.O.D.: 50 | Boulder: 0 | In Veg.: 0 | Over Veg: 0 | Cutbank: | 50 | |
| Crown Closure % : | 10 | Method Crown Closure: | GE | Aspect : W | Method Aspect: | AE | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 E 7.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 2.5 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 5 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 2 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-446-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 60 | F | 0.0 |

Comments

- C1 8 traps were set at road crossing; no fish were caught or observed. No fish habitat.
- C2 Stable creek. Upper section is a low energy system.
- C3 A 60 m high falls was observed at the confluence.
- C4 In the lower 250 m of stream from the confluence, sidewalls range in slope from 50-80% for an average of 50 m and then the stream verges on being a gully in sections. Sidewalls are composed of fine, silty material and there is evidence of old slumps. ~250 m - 730 m w/s of the confluence, stream parallels the northern boundary of block 611#1. Creek becomes progressively less incised moving u/s to the road crossing.

DFO/MoELP Stream Survey Form

26-Mur-97

Stream: THAUTIL R. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-446-TH -21.-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH21.1 | Access: | FT |
| Watershed Code: | 460-6006-508-446-TH -21.-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | ~200 m U/S FROM CONFLUENCE. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: GE |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6078 .60198 | Photos: | no photo Air Photos: BCB 91180:161 |
| Date: | 6/13/96 | Time: | 12:00 | Agency: | C58 |
| | | Survey Crew: | RD/DA \ \ \ \ \ | | |

Channel Characteristics

| | | | |
|---------------------------|--------------|-----------------------------|-----------------------|
| Av. Chan. Width (m): | 0.2 | Method Av. Chan. Width (m): | T |
| Av. Wet. Width (m): | 0.1 | Method Av. Wet. Width (m): | T |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | |
| Gradient (%): | 10.0 | Method Gradient: | CL |
| % Pool: 10 | % Riffle: 80 | % Run: 10 | % Other: 0 Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE |
| % Debris Area: | 0-10 | Method Debris Area: | GE |

Specific Data

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Cover

| | | | |
|------------------|---------|-----------------------|----------|
| Cover Total %: | | Method Cover Total %: | |
| Dp Pool: | L.O.D.: | Boulder: | In Veg.: |
| Crown Closure %: | | Method Crown Closure: | Aspect: |
| | | Method Aspect: | |

Discharge

| | | | |
|----------------------|------|----------------------------|----|
| Wetted Width (m): | | Method Wetted Width (m): | |
| Mean Depth (m): | | Method Mean Depth (m): | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 0 A 10.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | | % Unstable: | |
| Textures Fines: | No | Gravel: | No |
| Confinement: | | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | | Method Bars: | |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1

Seasonally wetted, intermittent seepage with trickle flow. The channel is undefined.
- C2

No fish habitat present.
- C3

Road has no culvert; a culvert should be installed.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH22 | Access: | V2 |
| Watershed Code: | 460-6006-508-468-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | -70 m U/S FROM CONFLUENCE WITH THAUTIL R. | Map #: | 093L034 | Site No.: | 1 |
| | | U.T.M.: | 9.6076 60205 | Length surveyed (m): | 300.0 Method: HC |
| Date: 9/25/96 | Time: 14:33 | Agency: C58 | Survey Crew: SSJH \ \ \ \ \ | Fish Card: | N |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Photos: | B4/24 |
| | | | | Air Photos: | BCB 91180:159 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 2.9 | 2.1 | 3.7 | 2.1 | 2.3 | 2.1 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.0 | 2.0 | 1.4 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | |
| % Pool: 30 | % Riffle: 40 | % Run: 30 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 35 | % Fines (<2mm): | 35 |
| % Gravels: | 55 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 6 | Compaction: | High |

Cover

| | | | |
|-------------------|------------|-----------------------|-------------------|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool: 5 | L.O.D.: 60 | Boulder: 10 | In Veg.: 0 |
| | | Over Veg: 15 | Cutbank: 10 |
| Crown Closure % : | 15 | Method Crown Closure: | GE |
| | | Aspect: SE | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 10 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 50 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | (SP) |
| 3 D 3.0 | 3610 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | No fish observed but recruitment from mainstem suspected; no apparent barriers to fish. |
| C2 | Flood signs in the lower 150 m from the Thautil River. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|---|--|-------------------------|--|-------------------------------|--|----------------------|--|--|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH22 | | Access: | | V2 | |
| Watershed Code: | | 460-6006-508-468-000-000-000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 0.9 Method: MW | |
| Location: | | AT ROAD CROSSING, ~750 m U/S FROM MOUTH. | | Map #: | | 093L034 | | Site No.: | | 2 Length surveyed (m): 495.0 Method: HC | |
| | | | | U.T.M.: | | 9.6076 60205 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/25/96 | | Time: 16:00 | | Agency: C58 | | Survey Crew: SSUH \ \ \ \ \ \ | | Photos: | | B4/25; B5/1 Air Photos: BCB 91180:159 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 2.6 Method Av. Chan. Width (m): T | | 2.5 3.0 2.5 3.0 2.8 2.0 | | | | % Fines (<2mm): | | 10 % Fines (<2mm): 10 | |
| Av. Wet. Width (m): | | 1.3 Method Av. Wet. Width (m): T | | 1.3 1.7 0.7 1.4 | | | | % Gravels: | | 20 Small (2-16mm): Large (16-64mm): | |
| Av. Max. Rif. Depth (cm): | | 10 Av. Max. Riffle Depth (cm): MS | | | | | | % Larges: | | 70 Small cobble (64-128mm): Large cobble (128-256mm): Boulder cobble (>256mm): | |
| Av. Max. Pool Depth (cm): | | 22 Av. Max. Pool Depth (cm): 10 | | | | | | % Bedrock: | | 0 % Bedrock: 0 | |
| Gradient (%): | | 6.0 Method Gradient: CL | | | | | | D90 (cm): | | 20 Compaction: Medium | |
| % Pool: 30 | | % Riffle: 60 | | % Run: 10 | | % Other: 0 Method: GE | | | | | |
| % Side Channel: | | 0-10 Method Side Channel: GE | | | | | | | | | |
| % Debris Area: | | 0-10 Method Debris Area: GE | | | | | | | | | |
| Cover | | | | Banks | | | | | | | |
| Cover Total %: | | 40 Method Cover Total %: GE | | | | | | Height (m): | | 0.6 % Unstable: 5 | |
| Dp Pool: 20 L.O.D.: 15 | | Boulder: 40 In Veg.: 0 Over Veg: 5 Cutbank: 20 | | | | | | Textures Fines: | | No Gravel: Yes Larges: No Bedrock: No | |
| Crown Closure %: | | 20 Method Crown Closure: GE Aspect: E Method Aspect: AE | | | | | | Confinement: | | 2 | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | Valley: Chan. Ratio: | | 2 | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | Stage: | | 1. | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) VO | | | | | | Flood Signs Ht(m): | | 0.4 Method Flood Signs: MS | |
| Discharge (m3/s): | | 0.01 Method Discharge (m3/s): | | | | | | Braided: | | N Method Braided: GE | |
| Reach Symbol | | | | | | | | | | | |
| | | | | (Fish) | | | | | | | |
| | | | | DV | | | | | | | |
| | | | | 3 B 6.0 1270 | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 5 | 65 - 71 | J | R | | | EL |
| DV | 3 | 41 - 56 | F | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | CV | 0.8 |

Comments

- C1Electrofished 27 m length of stream: 7 m d/s from culvert, 20 m u/s from cuvlert.
- C2Culvert barrier: 1.0 m drop from culvert to pool, 0.6 m drop from culvert to floodsign level. Culvert is 28 m long with a 5% gradient. (Photo B5/1)
- C3Char fry were recorded as DV fry.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------------------|----------------------|------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH22 | Access: | V2 |
| Watershed Code: | 460-6006-508-468-000-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.7 Method: MW |
| Location: | -650 m U/S FROM ROAD, ~1.4 km U/S FROM MOUTH. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | Map #: 093L034 | Fish Card: | N | Field: Yes | Historical: No |
| | U.T.M.: 9.6076 .60205 | Photos: | B5/2 | Air Photos: | BCB 91180:159 |
| Date: 9/25/96 | Time: 17:30 | Agency: C58 | Survey Crew: SSJH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.8 | Method Av. Chan. Width (m): | T | 1.5 | 1.8 | 1.9 | 2.0 | 2.3 | 1.5 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 0.8 | 1.4 | 1.0 | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 22 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 65 | % Run: 15 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 30 | Method Cover Total %: | GE | | | | |
| Dp Pool : 25 | L.O.D.: 25 | Boulder: 25 | In Veg.: 0 | Over Veg: 15 | Cutbank: 10 | | |
| Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect : NE | Method Aspect: AE | | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 9.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 45 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 45 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 13 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | FC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 Electrofished ~100 m length of stream. No fish were caught or observed. Suspect fish distribution is up to the Reach 3 boundary.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-TH-22.-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------------|--------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH22.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-468-TH-22.-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~ 60 m U/S FROM TH22 MOUTH, ~160 m D/S FROM ROAD CROSSING. | Map #: | 093L034 | Site No.: | 4 Length surveyed (m): 160.0 Method: HC |
| | | U.T.M.: | 9.6072 .60205 | Fish Card: | N Field: Yes Historical: No |
| Date: | 10/21/96 | Time: | 12:30 | Agency: | C58 |
| | | Survey Crew: | SSUH \ \ \ \ \ \ \ \ | Photos: | not available |
| | | | | Air Photos: | BCB 91180.159 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.1 | 1.2 | 1.0 | 0.5 | 1.0 | 1.6 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 0.9 | 1.2 | 1.0 | | | |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | 13 | 8 | 12 | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 11 | 25 | 16 | 18 | | | |
| Gradient (%): | 20.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 70 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 30 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 15 | Boulder: | 5 | In Veg.: | 0 | Over Veg: | 20 |
| Crown Closure % : | 60 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE | Cutbank: | 30 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 B 20.0 | 2620 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 25 | % Fines (<2mm): | 25 |
| % Gravels: | 60 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 15 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 20 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GI |
| Cond. (µmhos): | 30 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-468-TH -22.-1 -000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C120% gradient recorded was the average for the whole reach. At the confluence with Th22 the gradient was 5%; ~88 m u/s from the confluence the gradient was 15%; ~130 m and u/s to the culvert the gradient increased from >20% to >30%.
- C2Air temp: 4.5 C
- C3Suspect fish use only in the lower 88 m of Th22.1.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-469-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH23 | Access: | 11 |
| Watershed Code: | 460-6006-508-469-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.3 Method: MW |
| Location: | -100 m U/S FROM TH23 - THAUTIL R. CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 550.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6076 .60206 | Photos: | A5/22, 23 Air Photos: BCB 91180:161 |
| Date: | 9/24/96 | Time: | 10:00 | Agency: | C58 |
| | | Survey Crew: | RD/CP \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 1.7 | 1.1 | 1.4 | 1.3 | 3.2 | 1.6 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 80 | % Run: 10 | % Other: 0 | Method: | GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 10 | Boulder: | 70 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | 50 | Method Crown Closure: | GE | Aspect : | W | Method Aspect: | AE | Cutbank: | 20 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 B 8.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 55 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 40 |
| % Larges: | 40 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1. | | |
| Flood Signs 1lt(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmbos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-469-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electrofished ~55 m length of stream with no lower net. No fish were caught or observed. |
| C2 | Although no fish were observed, suspect creek may contain residents. Habitat is suitable for fish; the lower 200 m of stream contains very limited areas suitable for spawning (bed material consists of cobble/fines). |
| C3 | Surveyed upper reaches of Th23 by air: creek is moderate to low gradient (est. 8%); suspect fish use up to 2.2 km (the reach break). Above this point the creek becomes quite steep. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -25 - 00-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------------------------|----------------------|------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH125 | Access: | FT |
| Watershed Code: | 460-6006-508-TH -25 - 00-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | ~100 m U/S FROM CONFLUENCE WITH THE THAUTIL R. | Site No.: | 1 | Length surveyed (m): | 200.0 Method: HC |
| | Map #: 093L034 | Fish Card: | N | Field: Yes | Historical: No |
| | U.T.M. : 9.6075 .60208 | Photos: | A6/2, 3 | Air Photos: | BCB 91180:159 |
| Date: 9/24/96 | Time: 13:00 | Agency: C58 | Survey Crew: RD\CP \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|-------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.2 | 0.9 | 1.1 | 1.3 | 0.7 |
| Av. Wet. Width (m): | 0.2 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | |
| % Pool: 5 | % Riffle: 15 | % Run: 0 | % Other: 80 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|--|
| Cover Total % : | 30 | Method Cover Total %: | GE | | | | | |
| Dp Pool : 0 | L.O.D.: 0 | Boulder: 10 | In Veg.: 0 | Over Veg: 90 | Cutbank: 0 | | | |
| Crown Closure % : | 70 | Method Crown Closure: | GE | Aspect : W | Method Aspect: AE | | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | (SP) |
| 1 C 1.5 | 8200 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 2 | Compaction: | High |

Banks

| | | | | |
|----------------------|-----|--------------------------|------------|-------------|
| Height (m): | 1.0 | % Unstable: | 0 | |
| Textures Fines: | Yes | Gravel: No | Larges: No | Bedrock: No |
| Confinement: | 4 | | | |
| Valley: Chan. Ratio: | 3 | | | |
| Stage: | L | | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS | |
| Braided: | N | Method Braided: | GE | |
| Bars (%): | 70 | Method Bars: | GE | |
| pH: | 8.5 | Method pH: | PH | |
| O2 (ppm): | | Method Dissolved Oxygen: | | |
| Water Temp. (°C): | 6.0 | Method Temperature: | IC | |
| Turb. (cm): | 200 | Method Turbidity: | GE | |
| Cond. (µmhos): | | Method Conductivity: | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-T11 -25 - 00-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Dewatered in the lower 25 m; very small trickle flow u/s, mostly stagnant. |
| C2 | Small, stable seepage channel (in-channel debris covered with moss). Only accessible from the Thautil R. during high flow events. Suspect use in the lower 100 m during floods. Above 100 m, the gradient increases slightly - not accessible or suitable for fish. |
| C3 | Stream has no overwintering potential and merely serves as a trap to fish. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000

| Header Information | | | | | | | | | |
|--|----------------------------|-----------------------------------|------------|---------------------------|-------------------|----------------------------|-----|--------------------------|-----|
| Stream Name: GABRIEL C. | | Stream "Local": GABRIEL C. (TH26) | | Access: F1 | | | | | |
| Watershed Code: 460-6006-508-480-000-000-000-000-000-000 | | Map #: 093L034 | | Reach No.: 1 | | Reach Length (km): 3.1 | | Method: MW | |
| Location: ~200-300 m U/S FROM CONFLUENCE WITH THAUTIL R. | | U.T.M.: 9.6075 .60209 | | Site No.: 1 | | Length surveyed (m): 250.0 | | Method: HC | |
| Date: 9/24/96 | | Time: 11:30 | | Agency: C58 | | Fish Card: N | | Field: Yes | |
| Survey Crew: RD/CP \ \ \ \ \ | | Photos: A5/24, 25 | | Air Photos: BCB 91181.046 | | Historical: No | | | |
| Channel Characteristics | | | | Bed Material | | | | | |
| | | | | Specific Data | | | | | |
| Av. Chan. Width (m): | 5.9 | Method Av. Chan. Width (m): | T | 7.2 | 5.0 | 6.4 | 6.1 | 5.2 | 5.4 |
| Av. Wet. Width (m): | 4.0 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 11 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 40 | % Run: 40 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 30 | Method Debris Area: | GE | | | | | | |
| Cover | | | | Banks | | | | | |
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 10 | L.O.D.: 15 | Boulder: 75 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: AE | | | | |
| Discharge | | | | Banks | | | | | |
| | | | | Specific Data | | | | | |
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.50 | Method Discharge (m3/s) : | | | | | | | |
| Reach Symbol | | | | Banks | | | | | |
| | | | | Height (m): 1.5 | | | | % Unstable: 0 | |
| | | | | Textures Fines: Yes | | | | Gravel: Yes | |
| | | | | Confinement: 3 | | | | Larges: No | |
| | | | | Valley: Chan. Ratio: 1 | | | | Bedrock: No | |
| | | | | Stage: L | | | | | |
| | | | | Flood Signs Ht(m): 0.9 | | | | Method Flood Signs: MS | |
| | | | | Braided: N | | | | Method Braided: GE | |
| | | | | Bars (%): 30 | | | | Method Bars: GE | |
| | | | | pH: 8.2 | | | | Method pH: PH | |
| | | | | 02 (ppm): | | | | Method Dissolved Oxygen: | |
| | | | | Water Temp. (°C): 3.5 | | | | Method Temperature: 10 | |
| | | | | Turb. (cm): 200 | | | | Method Turbidity: GE | |
| | | | | Cond. (µmhos): | | | | Method Conductivity: | |
| | | | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | No sample site was performed in this reach but DV, RB and BT were caught ~1.4 km u/s from the Thautil R. confluence. Coho have also been found to be abundant in lower Gabriel C. (Carswell and Witt, 1979). |
| C2 | No spawning potential in the lower 100 m; bed material consists of cobble/boulder. Further u/s, some spawning potential present. |
| C3 | Easy fish access from the confluence. Creek flows into a Thautil R. sidechannel. |
| C4 | Large unstable banks were observed along the creek. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|-------------------------------------|
| Stream Name: | GABRIEL C. | Stream "Local": | GABRIEL C. (TH26) | Access: | FT |
| Watershed Code: | 460-6006-508-480-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.1 Method: MW |
| Location: | ~500 m U/S FROM G2 CONFLUENCE. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/26/96 | Time: 13:00 | Map #: | 093L034 | Photos: | B5/15, 16 Air Photos: BCB 91181:046 |
| Agency: C58 | Survey Crew: RD\SS \ \ \ \ \ \ | U.T.M.: | 9.6075 .60209 | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 7.2 | Method Av. Chan. Width (m): | T | 7.0 | 6.2 | 6.8 | 8.3 | 7.6 |
| Av. Wet. Width (m): | 3.8 | Method Av. Wet. Width (m): | T | 4.1 | 3.6 | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 8 | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 50 | % Run: 30 | % Other: 0 | Method: | GE | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|----------------|-------------|--|--|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool: 15 | L.O.D.: 20 | Boulder: 40 | In Veg.: 0 | Over Veg: 10 | Cutbank: 15 | | |
| Crown Closure % : | | Method Crown Closure: | Aspect: SE | Method Aspect: | AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.35 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV BT RB (SST) (CO) | |
| 7 A 2.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 25 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 15 |
| % Larges: | 65 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 2.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.9 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | 7.7 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| BT | 1 | 106 | J | R | | | EL |
| DV | 4 | 72 - 109 | J | R | | | EL |
| DV | 1 | 123 | A | S | | | EL |
| CHF | 3 | 42 - 47 | F | R | | | EL |
| RB | 10 | 62 - 140 | J | R | | | EL |
| RB | 1 | nr | F | R | | | EL |

Obstructions

Comments

- C1 Electroshocked 35 m length of stream with no lower net. Suspect the RB caught at this site are residents, and they were recorded as RB. SST may also be present. CO are suspected to be present in lower Gabriel C. (Carswell and Witt, 1979). Char fry were recorded as CHF due to the inability to distinguish between DV and BT fry.
- C2 Habitat provides good rearing for trout in the cobble and debris found along the margins. Pockets of good SST/CO spawning are present in this section.
- C3 G1 was ground surveyed; the tributary is classed as suspected S4 habitat to the top of R1 and S6 habitat u/s from the reach break.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|-------------------------------------|
| Stream Name: | GABRIEL C. | Stream "Local": | GABRIEL C. (TH26) | Access: | V2 |
| Watershed Code: | 460-6006-508-480-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.8 Method: MW |
| Location: | INDEX SITE In 1; D/S FROM ROAD CROSSING, ~3.6 km U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| Date: 9/27/96 | Time: 12:00 | Map #: | 093L034 | Fish Card: | Y Field: Yes Historical: No |
| Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | U.T.M.: | 9.6075 .60209 | Photos: | B5/17, 18 Air Photos: BCB 91181:046 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 5.3 | Method Av. Chan. Width (m): | T | 5.6 | 5.1 | 4.4 | 6.0 | 5.9 | 5.1 |
| Av. Wet. Width (m): | 2.2 | Method Av. Wet. Width (m): | T | 2.6 | 2.1 | 1.5 | 2.4 | 3.3 | 1.3 |
| Av. Max. Rif. Depth (cm): | 13 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 13 | | | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 45 | % Run: 15 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 80 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 5 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 4 | Compaction: | High |

Cover

| | | | |
|-------------------------|-----------------------|-----------------------|---------------------------------|
| Cover Total % : | 25 | Method Cover Total %: | GE |
| Dp Pool : 10 L.O.D.: 50 | Boulder: 0 In Veg.: 0 | Over Veg: 20 | Cutbank: 20 |
| Crown Closure % : | 5 | Method Crown Closure: | GE Aspect : E Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.8 | % Unstable: | 30 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | L | | |
| Flood Signs 11t(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 75 | Method Bars: | GE |
| pH: | 6.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 19 | Method Conductivity: | CM |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | 1.3 | Method Wetted Width (m) : | T |
| Mean Depth (m) : | 0.1 | Method Mean Depth (m) : | MS |
| Mean Velocity (m/s) : | 0.25 | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 5 C 1.0 | 1810 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 2 | 121, 131 | A | S | M | | EL |
| DV | 5 | 76 - 91 | J | R | | | EL |

Obstructions

Comments

- C1 Electrofished 63 m length of stream, 3 passes with a lower net. The DV with a fork length of 91 mm was approaching maturity.
- C2 Site was complex with abundant cover. Habitat structure is well suited for fish production.
- C3 The conductivity of the water was low.

DFO/MoELP Stream Survey Form

26-Mur-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|--------------------------------|--|-------------|--|--|----------------------|--------------------|-------------|---------|----|-----|--|
| Stream Name: | | GABRIEL C. | | Stream "Local": | | GABRIEL C. (TH26) | | Access: | | F1 | | | | | | | |
| Watershed Code: | | 460-6006-508-480-000-000-000-000-000-000-000 | | | | | | | | Reach No.: | 2 | Reach Length (km): | 1.7 | Method: | MW | | |
| Location: | | LOCATED ~1000 m U/S FROM BRIDGE IN R2. | | Map #: | | 093L034 | | Site No.: | | 3 | Length surveyed (m): | 1100.0 | Method: | HC | | | |
| | | | | U.T.M.: | | 9.6075 .60209 | | Fish Card: | | N | Field: | Yes | Historical: | No | | | |
| Date: 10/4/96 | | Time: 11:00 | | Agency: C58 | | Survey Crew: RD\CP \ \ \ \ \ \ | | Photos: | | A10/14, 15 | Air Photos: | BCB 91181:047 | | | | | |
| Channel Characteristics | | | | | | | | | | Bed Material | | | | | | | |
| | | | | | | | | | | Specific Data | | | | | | | |
| Av. Chan. Width (m): | | 5.5 | | Method Av. Chan. Width (m): | | T | | 5.6 | | 6.2 | | 4.3 | | 4.9 | | 6.7 | |
| Av. Wet. Width (m): | | 2.4 | | Method Av. Wet. Width (m): | | T | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | | 8 | | Av. Max. Riffle Depth (cm): | | MS | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | 35 | | Av. Max. Pool Depth (cm): | | 8 | | | | | | | | | | | |
| Gradient (%): | | 4.0 | | Method Gradient: | | CL | | | | | | | | | | | |
| % Pool: 30 | | % Riffle: 40 | | % Run: 30 | | % Other: 0 | | Method: GE | | | | | | | | | |
| % Side Channel: | | 0-10 | | Method Side Channel: | | GE | | | | | | | | | | | |
| % Debris Area: | | 10-40 | | Method Debris Area: | | GE | | | | | | | | | | | |
| Cover | | | | | | | | | | Banks | | | | | | | |
| Cover Total % : | | 70 | | Method Cover Total %: | | GE | | | | | | | | | | | |
| Dp Pool : 5 | | L.O.D.: 30 | | Boulder: 45 | | In Veg.: 0 | | Over Veg: 0 | | Cutbank: 20 | | | | | | | |
| Crown Closure % : | | 30 | | Method Crown Closure: | | GE | | Aspect : NE | | Method Aspect: AE | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | | | | | | | | | | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | | | | | | | | | | |
| Discharge (m3/s) : | | 0.23 | | Method Discharge (m3/s) : | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | (Fish) | | | | | | | |
| | | | | | | | | | | (DV) | | | | | | | |
| | | | | | | | | | | 6 A 4.0 1630 | | | | | | | |
| | | | | | | | | | | (Width, Valley: Channel, Slope) (Bed Material) | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | No fish sampling was conducted in this section. A sample site was conducted d/s at the road. DV were caught and it is suspected that DV are also present u/s in this section. |
| C2 | The upper 500 m of Reach 2 lies on the edge of Block 601#4. A one tree leave strip or cutting to the creek occurred along this block. |
| C3 | Dynamic creek with mainly stable banks. A section of creek was detwatered for ~ 400 m d/s. |
| C4 | Reach 2 is accessible to fish in higher flows. Habitat is suitable for fish and there are sections of good DV spawning. |
| C5 | Tributaries G6 and G7 were not observed. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|--------------------------------------|
| Stream Name: | GABRIEL C. | Stream "Local": | GABRIEL C. (TH26) | Access: | FI |
| Watershed Code: | 460-6006-508-480-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.7 Method: MW |
| Location: | ~ 300 m U/S FROM G8 CONFLUENCE, LOWER 300 m IN R3. | Site No.: | 4 | Length surveyed (m): | 800.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6075 .60209 | Photos: | A10/18, 19 Air Photos: BCB 91181:047 |
| Date: | 10/4/96 | Time: | 12:00 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 5.0 | Method Av. Chan. Width (m): | T | 4.2 | 5.8 | 6.3 | 4.7 | 3.9 |
| Av. Wet. Width (m): | 1.8 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 8 | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 60 | % Run: 20 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | |
| % Debris Area: | 40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | |
| Dp Pool : 30 | L.O.D.: 30 | Boulder: 40 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | |
| Crown Closure % : | 50 | Method Crown Closure: | GE | Aspect : NE | Method Aspect: AE | | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 5 A 7.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 25 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 10 |
| % Larges: | 70 | Small cobble (64-128mm): | 60 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 14 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 50 | Method Bars: | GE |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | F | 5.6 |

Comments

- C1 No sample site was performed here. Suitable fish habitat is present in the lower section of R3. Suspect DV present in R3 up to 725 m u/s from the G8 confluence - the location of impassable 1.2 m high bedrock falls.
- C2 Gradient increased from an average of 7% to an average of 12 - 17% at ~650 m u/s from the G8 confluence. At ~700 m, the channel changed from gravel/cobble to confined bedrock. Further u/s, the channel becomes a very steep, confined canyon.
- C3 Large dynamic creek. Very unstable sideslopes present in sections. Lots of LOD with small drops.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C.

Watershed Code:

Stream Survey Report

460-6006-508-480-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | GABRIEL C. | Stream "Local": | GABRIEL C. (TH26) | Access: | 11 |
| Watershed Code: | 460-6006-508-480-000-000-000-000-000-000 | Reach No.: | 4 | Reach Length (km): | 2.3 Method: MW |
| Location: | ~100 m U/S FROM G10 CONFLUENCE. | Site No.: | 5 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/26/96 | Time: 13:40 | Agency: C58 | Survey Crew: RD\SS\ \ \ \ \ \ | Photos: | B5/9, 10 Air Photos: BCB 91180:157 |
| | | Map #: | 093L033 | | |
| | | U.T.M.: | 9.6075 .60209 | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | |
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 2.6 | 2.1 | 1.7 | 1.5 | 1.9 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.5 | 1.3 | 1.7 | 1.5 | 1.7 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 5 | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 35 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 20 |
| % Larges: | 60 | Small cobble (64-128mm): | 55 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | Medium |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : 30 | L.O.D.: 30 | Boulder: 20 | In Veg.: 0 | Over Veg.: 0 | Cutbank: | 20 | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : NE | Method Aspect: | AE | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | |

Reach Symbol

| | | |
|---------------------------------|--|----------------|
| | | (Fish) |
| | | NF |
| 2 A 6.0 | | 1360 |
| (Width, Valley: Channel, Slope) | | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1

Electrofished 75 m length of stream, 1 pass u/s with no lower net. No fish were caught or observed. Habitat is suitable for fish and pockets of spawning gravels are present between log steps. Suspect barrier d/s in R3 (1.2 m high falls) prevents fish access into R4.
- C2

Very small confined creek. U/S from sample site and below the lake, there is no continuous channel.
- C3

Lat/Lon of landing site: 54 18.96 127 25.24
- C4

Tributaries G9 and G10 were surveyed: G9 is a very small/steep creek with no potential for fish use; G10 consists of a seepage trickle in a stagnant marsh with no potential for fish use.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-195-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electrofished 62 m length of channel, 1 pass u/s with no lower net. No fish were caught or observed. |
| C2 | No channel is present at the creek mouth. Creek appears to be only wetted at the top of R1 and the bottom of R2. Alder swales line the creek providing ample cover. |
| C3 | Small, steep creek with several 30 cm high drops within the sample site. Suspect no fish access due to the small size of the creek. |
| C4 | Lat/Lon of helicopter landing site (~500 m d/s from sample site): 54 20.47 127 21.03 |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G3 | Access: | FT |
| Watershed Code: | 460-6006-508-480-364-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~200 m D/S FROM G3.1 CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 400.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/9/96 | Time: 16:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A12/7, 8 Air Photos: BCB 91181:046 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6068 .60219 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.7 | 1.9 | 2.1 | 2.3 | 1.6 | 1.9 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 8.5 | Method Gradient: | CL | | | | | | |
| % Pool: 30 | % Riffle: 60 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|----------------|-------------|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : 20 | L.O.D.: 40 | Boulder: 10 | In Veg.: 0 | Over Veg: 20 | Cutbank: 10 | | |
| Crown Closure % : | | Method Crown Closure: | Aspect : E | Method Aspect: | AE | | |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|----------------------|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | <i>Specific Data</i> | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | (SP) | |
| 2 A 9.0 | 1630 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 60 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 40 |
| % Larges: | 35 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 15 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 14 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Fish sampling was not conducted in R1. Assume DV present in the lower 200 m of the reach. ~200 m - 400 m u/s from mouth, gradient is 8 - 9%; suspect gradient may be passable to fish. |
| C2 | R1 channel is confined with numerous small drops (20 cm). Bed material consists primarily of cobble/fines. Suspect DV could have accessed this creek in the past. |
| C3 | G3.1 confluence is located ~100 m u/s from the G3 - Gabriel C. confluence. Gradient is 15% above the confluence with a flow of ~0.5 cfs and an average channel width of 1.2 m. Bed material consists of gravel/moss. No fish access. Further u/s, the gradient increases to ~18%, channel width decreases slightly, and channel becomes confined in a gully. Class S6 habitat throughout this creek. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|--------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G3 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-364-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.8 Method: MW |
| Location: | ~450 m D/S FROM ROAD CROSSING. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: IIC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6068 .60219 | Photos: | B6/I Air Photos: BCB 91181:046 |
| Date: 9/27/96 | Time: 15:45 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 2.1 | 2.3 | 0.9 | 1.3 | 1.6 | 1.6 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.6 | 0.4 | 0.8 | 1.2 | | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 3.5 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 30 | % Run: 30 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: 15 | | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 45 | % Fines (<2mm): | 45 |
| % Gravels: | 45 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 6 | Compaction: | High |

Cover

| | | | |
|------------------------|------------|-----------------------|-------------------|
| Cover Total % : | 25 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: 50 | Boulder: 0 | In Veg.: 0 | Over Veg: 20 |
| Crown Closure % : | 70 | Method Crown Closure: | GE |
| | | Aspect: E | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs III(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GI |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 B 4.0 | 4510 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | R2 was not sampled and no fish were visually observed; it may be accessible to fish or it may have had fish access at some time in the past. Suspect fish present in R2, and that fish use is to the top of R2. |
| C2 | Channel is intermittent. Habitat is marginally capable of supporting fish. Good potential resident DV habitat in the lower section of R2; The channel is low gradient and meandering with sections of potential DV spawning. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|--------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G3 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-364-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.5 Method: MW |
| Location: | ~100 m D/S FROM ROAD CULVERT. | Site No.: | 3 | Length surveyed (m): | 300.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6068 .60219 | Photos: | B6/3 Air Photos: BCB 91181:046 |
| Date: | 9/27/96 | Time: | 15:45 | Agency: | C58 |
| | | Survey Crew: | SS\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 0.9 | 1.1 | 1.0 | 0.5 | 0.9 | 0.8 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.9 | 1.1 | 1.0 | 0.5 | 0.9 | 0.8 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 23 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 35 | % Riffle: | 65 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 60 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | Medium |

Cover

| | | | |
|------------------|----|-----------------------|----|
| Cover Total %: | 65 | Method Cover Total %: | GE |
| Dp Pool: | 15 | L.O.D.: | 30 |
| Boulder: | 10 | In Veg.: | 35 |
| Over Veg: | 5 | Cutbank: | 5 |
| Crown Closure %: | 20 | Method Crown Closure: | GE |
| Aspect: | NE | Method Aspect: | AE |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|----------------------|------|-----------------------------|----|
| Wetted Width (m): | | Method Wetted Width (m): | |
| Mean Depth (m): | | Method Mean Depth (m): | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 B 9.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | No fish were caught or observed at sample site. |
| C2 | Adjacent cutblock for 50 m section of stream from the road culvert. |
| C3 | Stream channel disappears ~ 50 m d/s from road culvert. Flow is subsurface for ~20 m and then a defined channel reforms. |
| C4 | G3 is class S6 habitat throughout R3. |

DFO/MoELP Stream Survey Form

26-Mar-9"

Stream: GABRIEL C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-480-364-G3-2 -000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------------|-------------|-----------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G3.2 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-364-G3-2 -000-000-000-000-000 | Map #: | 0931.034 | Reach No.: | 1 |
| Location: | SURVEYED THROUGHOUT REACH 1. | U.T.M.: | 9.6062.60219 | Site No.: | 4 |
| Date: | 9/27/96 | Time: | 14:45 | Fish Card: | N |
| | | Agency: | C58 | Field: | Yes |
| | | Survey Crew: | SSUH \ \ \ \ \ \ \ \ | Air Photos: | B5/24 |
| | | | | Historical: | No |
| | | | | BCB | 91181.046 |

Channel Characteristics

| | | | | | | | | | | |
|---------------------------|-----|-----------------------------|----------------------|--------|-----|----------|-----|---------|-----|-----|
| Av. Chan. Width (m): | 1.9 | Method | Av. Chan. Width (m): | T | 2.1 | 1.4 | 1.6 | 2.3 | 1.9 | 1.9 |
| Av. Wet. Width (m): | 0.8 | Method | Av. Wet. Width (m): | T | 1.0 | 0.8 | 0.7 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | | |
| Av. Max. Pool Depth (cm): | 14 | Av. Max. Pool Depth (cm): | 9 | | | | | | | |
| Gradient (%): | 4.0 | Method | Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 65 | % Run: | 15 | % Other: | 0 | Method: | GE | |
| % Side Channel: | | Method | Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method | Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 35 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 25 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | | Compaction: | Medium |

Cover

| | | | | | | | | | | | |
|-------------------|----|---------|----------------|----------|----------|----------|--------|------------|----|----------|----|
| Cover Total % : | 30 | Method | Cover Total %: | GE | | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 50 | Boulder: | 20 | In Veg.: | 0 | Over Veg.: | 10 | Cutbank: | 20 |
| Crown Closure % : | 0 | Method | Crown Closure: | GE | Aspect : | NE | Method | Aspect: | AE | | |

Discharge

| | | | | |
|----------------------|------|--------|----------------------|----|
| Wetted Width (m): | | Method | Wetted Width (m): | |
| Mean Depth (m): | | Method | Mean Depth (m): | |
| Mean Velocity (m/s): | | Method | Mean Velocity (m/s): | VO |
| Discharge (m3/s): | 0.01 | Method | Discharge (m3/s): | |

Reach Symbol

| | | | | |
|--------|--|---|-----|------|
| (Fish) | NS | | | |
| | 2 | A | 4.0 | 4330 |
| | (Width, Valley: Channel, Slope) (Bed Material) | | | |

Banks

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|-----|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Height (m): | 0.7 | % Unstable: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|-----|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-G3.-2 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | No fish access at mouth; creek drops over a bench and in the lower 50 m of creek, flows are subsurface. Channel is intermittent in the lower 100 m. |
| C2 | No fish were observed during the survey. In R2 below the road, no fish were caught via electrofishing. Suspect creek is too small for resident fish. Class 6 habitat throughout G3.2. |
| C3 | Stream channel forms the boundary of large cutblock, 601#1, in the upper half of R1. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-G3.-2 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|----------------|----------------------|---------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G3.2 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-364-G3.-2 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.2 Method: MW |
| Location: | -100 m D/S FROM ROAD CULVERT. | Site No.: | 5 | Length surveyed (m): | 131.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6062 .60219 | Photos: | B5/23 Air Photos: BCB 91181:046 |
| Date: | 9/27/96 | Time: | 14:30 | Agency: | C58 |
| | | Survey Crew: | SSUH \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 1.8 | 1.7 | 2.3 | 1.4 | 1.2 | 1.6 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.7 | 1.7 | 0.8 | | | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 40 | % Riffle: | 60 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 50 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 35 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | Medium |

Cover

| | | | |
|------------------|----|-----------------------|----|
| Cover Total %: | 35 | Method Cover Total %: | GE |
| Dp Pool: | 10 | L.O.D.: | 25 |
| Boulder: | 45 | In Veg.: | 0 |
| Over Veg: | 20 | Cutbank: | 0 |
| Crown Closure %: | 10 | Method Crown Closure: | GE |
| Aspect: | NE | Method Aspect: | AE |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 B 8.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 1 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.5 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | FC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-G3.-2 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Electrofished 100 m length of channel; no fish were caught or observed. There is no fish access into G3.2 due to drop over bench at its confluence. Creek too small to support residents. Entire creek is class S6.
- C2Stream channel forms a boundary to massive cutblock 601#1.
- C3Poor development of deeper pool habitat. Generally low quality fish habitat.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-G3.-3 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------------|----------------------|---------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G3.3 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-364-G3.-3 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | ~200 m U/S FROM THE CONFLUENCE WITH G3. | Site No.: | 6 | Length surveyed (m): | 50.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6057 .60217 | Photos: | B5/25 Air Photos: BCB 91181.046 |
| Date: 9/27/96 | Time: 15:30 | Agency: C58 | Survey Crew: SSJH \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 0.6 | 0.8 | 1.4 | 1.4 | 0.6 | 0.7 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.2 | 0.4 | 0.6 | 0.4 | | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 10 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 3.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 40 | % Run: 40 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 3 | Compaction: | High |

Cover

| | | | |
|-----------------------|------------|-----------------------|-------------------|
| Cover Total % : | 15 | Method Cover Total %: | GE |
| Dp Pool: 0 L.O.D.: 60 | Boulder: 0 | In Veg.: 0 | Over Veg: 20 |
| Crown Closure % : | 35 | Method Crown Closure: | GE |
| | | Aspect: NE | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.5 | Method Temperature: | TC |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 1 B 4.0 | 8200 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-364-G3.-3 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Gradient of 3.5% was for the lower 35 m of G3.3. Above 35 m, flow goes subsurface through steep steps with a gradient of ~20%. |
| C2 | Habitat structure is too small to support fish; channel is discontinuous in sections. Potential fish access is in to the lower 35 m of G3.3 and some fish use is possible in this lower section. Creek is classed as S6 habitat. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-707-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------------|----------------------|-------------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G4 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-707-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.8 Method: MW |
| Location: | SAMPLED ~50 m BELOW ROAD CROSSING. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M. : | 9.6057 .60224 | Photos: | A8/20, 21 Air Photos: BCB 91181:046 |
| Date: 9/27/96 | Time: 11:00 | Agency: C58 | Survey Crew: RD\CP \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.1 | 1.3 | 1.4 | 0.7 | 1.2 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 1.1 | 1.3 | 0.7 | 0.4 | |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 4 | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 40 | % Run: 40 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | |
| % Debris Area: 20 | | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : 20 | L.O.D.: 40 | Boulder: 0 | In Veg.: 0 | Over Veg: 0 | Cutbank: 40 | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : S | Method Aspect: AE | | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| 1 A 2.0 | 1630 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 65 | Small (2-16mm): | 25 |
| | | Large (16-64mm): | 40 |
| % Larges: | 30 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.1 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | GF |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 2 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.7 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 58 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-707-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 80 | J | R | | | EL |
| DV | 2 | 117, 175 | A | S | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | CV | 1.4 |

Comments

- C1Electrofished 52 m length of stream. 2 adult DV's captured at this site; one was a spawned-out male and the other was a spawned-out female.
- C2Culvert at road is impassable to fish; 60 cm diameter culvert is 13 m long with a 0.7 m high drop at its outlet. (Photo A8/22) Should consider bridging this stream?
- C3Small, low gradient, meandering creek. Sections of good resident spawning habitat is present.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-707-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|--------------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G4 | Access: | F1 |
| Watershed Code: | 460-6006-508-480-707-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 0.6 Method: MW |
| Location: | SAMPLED ~100 m U/S FROM ROAD CULVERT. | Site No.: | 2 | Length surveyed (m): | 600.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/4/96 | Time: 15:00 | Agency: C58 | Survey Crew: RDVCP \ \ \ \ \ | Photos: | A10/20, 21 Air Photos: BCB 91181.046 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6057 .60224 | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.3 | Method Av. Chan. Width (m): | T | 1.3 | 1.9 | 0.9 | 1.2 | 1.0 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 2 | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 60 | Small cobble (64-128mm): | 60 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | High |

Cover

| | | | |
|----------------------|----|-----------------------|-------------------------------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool : 40 L.O.D.: | 40 | Boulder: 0 | In Veg.: 0 Over Veg: 10 Cutbank: 10 |
| Crown Closure % : | 60 | Method Crown Closure: | GE Aspect : S Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|----------------------|-------------------------------|
| Wetted Width (m): | Method Wetted Width (m): |
| Mean Depth (m): | Method Mean Depth (m): |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) VO |
| Discharge (m3/s): | 0.03 Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 1 A 5.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-707-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 5 | 60 - 92 | J | R | | | EL |

Obstructions

Comments

- C1 Electrofished 75 m length of stream, 1 pass with no lower net. Resident DV were caught.
- C2 In the lower 100 m u/s from the road, three 0.5 m high drops over debris were observed and are probable restrictions.
- C3 Sections of good DV spawning potential were observed. Pools and debris are abundant.
- C4 G4.3 was not observed; consists of dry meadow in block 602#5. Seepage G4.4 was observed but it has no defined channel; stream is intermittent and it has an average wetted width of 10 cm; not accessible to fish. G4.4 drains along cutblock 602#3.
- C5 G4 is accessible to fish to the top of R3. Channel is too steep to support fish in R4.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-707-G4.-2 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------------------|----------------------|---------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G4.2 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-707-G4.-2 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | D/S FROM ROAD CROSSING. | Site No.: | 3 | Length surveyed (m): | 200.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 9/27/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD\CP \ \ \ \ \ | Photos: | A8/19 Air Photos: BCB 91181:046 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.3 | Method Av. Chan. Width (m): | T | 0.4 | 0.4 | 0.3 | 0.2 | 0.3 |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | T | 0.4 | 0.4 | 0.3 | 0.2 | 0.3 |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 12 | Av. Max. Pool Depth (cm): | 4 | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 50 | % Run: 30 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 50 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 80 | Small (2-16mm): | 70 |
| | | Large (16-64mm): | 10 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 2 | Compaction: | High |

Cover

| | | | |
|----------------------|----|-----------------------|-------------|
| Cover Total % : | 50 | Method Cover Total %: | GE |
| Dp Pool : 10 L.O.D.: | 40 | Boulder: 0 | In Veg.: 0 |
| | | Over Veg: 0 | Cutbank: 50 |
| Crown Closure % : | | Method Crown Closure: | Aspect : SW |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.4 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 0 A 5.0 | 2800 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-707-G4.2 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Very small, stable creek with a trickle flow. Channel is steep and dewatered u/s. ~130 m d/s from road, creek flows over a 1 m high drop and over a bank - impassable. The G4 confluence is ~150 m d/s from the road. Assume fish access in the lower 20 m of stream. |
| C2 | Electrofished 75 m length of channel. No fish were caught or observed. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|--------------------|---|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G5 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-767-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.8 Method: MW |
| Location: | -50 m D/S FROM MAIN ROAD CULVERT CROSSING, U/S FROM G5.1. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 100.0 Method: HC |
| Date: 9/27/96 | Time: 15:00 | U.T.M.: | 9.6055 .60225 | Fish Card: | Y Field: Yes Historical: No |
| Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A9/5, 6 | Air Photos: | BCB 91181:046 |

Channel Characteristics

| | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|
| Av. Chan. Width (m): | 3.1 | Method Av. Chan. Width (m): | T | 2.7 | 3.3 | 3.3 | 3.1 |
| Av. Wet. Width (m): | 2.3 | Method Av. Wet. Width (m): | T | 2.5 | 2.9 | 2.2 | 1.4 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 8 | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 45 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 40 |
| % Larges: | 50 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | High |

Cover

| | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|
| Cover Total % : | 70 | Method Cover Total %: | GE | | |
| Dp Pool : 20 | L.O.D.: 20 | Boulder: 10 | In Veg.: 0 | Over Veg: 20 | Cutbank: 30 |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : S | Method Aspect: AE |

Banks

| | | | | |
|----------------------|-----|--------------------------|------------|-------------|
| Height (m): | 0.7 | % Unstable: | 0 | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No | Bedrock: No |
| Confinement: | 4 | | | |
| Valley: Chan. Ratio: | | | | |
| Stage: | L | | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS | |
| Braided: | N | Method Braided: | GE | |
| Bars (%): | 10 | Method Bars: | GE | |
| pH: | | Method pH: | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | |
| Water Temp. (°C): | 8.0 | Method Temperature: | FC | |
| Turb. (cm): | 200 | Method Turbidity: | GE | |
| Cond. (µmhos): | | Method Conductivity: | | |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.10 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV * | |
| 3 B 4.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 18 | 68 - 121 | J | R | S | M | EL |
| CHF | 6 | 35 - 53 | F | R | | | EL |

Obstructions

Comments

- C1 Electroshocked 43 m length of channel, 1 pass with no lower net. Two of the DV caught and recorded as juveniles were maturing (121 mm and 108 mm fork lengths). The char fry were recorded as CHF due to the inability to distinguish between DV fry and BT fry. This site was mapped as containing spawning DV (DV *) due to the ripe DV and fry present.
- C2 Creek is stable with moss covering LOD, rocks and banks of the channel. The creek is large enough to transport debris.
- C3 Complex habitat with potential for SST and CO spawning, and a large amount of cobble and vegetation cover suitable for DV and RB rearing. Small pockets of suitable DV spawning habitat are also present.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|---|--|---------------------------------|--|-----------------------------------|--|--|--|--|--|
| Stream Name: | | GABRIEL C. TRIBUTARY | | Stream "Local": | | G5 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-480-767-000-000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 0.3 Method: MW | |
| Location: | | -2.9 km U/S FROM MOUTH, ~100 m U/S FROM G5.4 CONFLUENCE; ALONG BLOCK 206#2. | | Map #: | | 093L034 | | Site No.: | | 2 Length surveyed (m): 250.0 Method: HC | |
| Date: 10/9/96 | | Time: 14:15 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | | Fish Card: | | N Field: Yes Historical: No | |
| | | | | | | | | Photos: | | A12/3-6 Air Photos: BCB 91181:056 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 1.7 Method Av. Chan. Width (m): | | T | | 2.1 1.8 2.3 0.9 1.4 1.8 | | % Fines (<2mm): | | 15 % Fines (<2mm): 15 | |
| Av. Wet. Width (m): | | 1.6 Method Av. Wet. Width (m): | | T | | | | % Gravels: | | 55 Small (2-16mm): 15 | |
| Av. Max. Rif. Depth (cm): | | 7 Av. Max. Riffle Depth (cm): | | MS | | | | | | Large (16-64mm): 40 | |
| Av. Max. Pool Depth (cm): | | 30 Av. Max. Pool Depth (cm): | | 7 | | | | % Larges: | | 30 Small cobble (64-128mm): 30 | |
| Gradient (%): | | 1.5 Method Gradient: | | CL | | | | | | Large cobble (128-256mm): 0 | |
| % Pool: 30 | | % Riffle: 30 | | % Run: 40 | | % Other: 0 | | Method: GE | | Boulder cobble (>256mm): 0 | |
| % Side Channel: | | 0 Method Side Channel: | | GE | | | | | | % Bedrock: 0 % Bedrock: 0 | |
| % Debris Area: | | 10-40 Method Debris Area: | | GE | | | | | | D90 (cm): 8 Compaction: High | |
| Cover | | | | Banks | | | | | | | |
| Cover Total % : | | 50 Method Cover Total %: | | GE | | | | Height (m): | | % Unstable: | |
| Dp Pool : 35 L.O.D.: | | 5 Boulder: 10 | | In Veg.: 0 | | Over Veg: 5 | | Cutbank: 45 | | Textures Fines: Yes Gravel: Yes Larges: No Bedrock: No | |
| Crown Closure % : | | 5 Method Crown Closure: | | GE | | Aspect : S | | Method Aspect: AE | | Confinement: 5 | |
| Discharge | | | | Specific Data | | | | Valley: Chan. Ratio: 4 | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Stage: | | L | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Flood Signs Ht(m): | | Method Flood Signs: | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | Braided: | | N Method Braided: GE | |
| Discharge (m3/s) : | | 0.04 Method Discharge (m3/s) : | | | | | | Bars (%): | | 10 Method Bars: GE | |
| Reach Symbol | | | | pH: | | | | 7.0 Method pH: PH | | | |
| | | | | (Fish) | | | | O2 (ppm): | | | |
| | | | | DV | | | | Method Dissolved Oxygen: | | | |
| | | | | 2 D 1.5 | | | | 1630 | | | |
| | | | | (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | |
| | | | | | | | | Water Temp. (°C): 6.5 Method Temperature: 14 | | | |
| | | | | | | | | Turb. (cm): 200 Method Turbidity: GE | | | |
| | | | | | | | | Cond. (µmhos): Method Conductivity: | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 71 | J | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | BD | 2.8 |
| | 1 | BD | 2.8 |
| | 1 | BD | 2.9 |
| | 1 | BD | 3.0 |

Comments

- C1 Electrofished 35 m length of creek at bottom of R2. The DV was caught at the bottom of the shock site. No fish were caught above the second beaver dam. Also electrofished a section at the top of R2 to where the creek dewatered; no fish were caught. Suspect fish may access this upper section of R2 during high flow events; classed as suspected fish to the top of R2 and confirmed fish presence up to the second beaver dam.
- C2 Excellent fish habitat below the meadow (bottom of R2); low gradient gravel channel. U/S in marsh, gradient increased slightly and a number of beaver dams were present. Channel flowed over several small drops through the marsh. Pockets of spawning were present in the 30 m d/s from where the creek dewatered.
- C3 Electrofishing was conducted on G5.5 from its confluence with G5. A 40 m length of stream was electrofished; no fish were caught. ~50 m u/s from the confluence, G5.5 channel is a seepage trickle and has an average wetted width of 0.5 m with sand/silt bed material from the u/s meadow; end of fish potential. The channel becomes undefined in the meadow, continues to an old beaver dam and forms a nearly dry pond just above the dam.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|----------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G5 | Access: | V4 |
| Watershed Code: | 460-6006-508-480-767-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 0.5 Method: MW |
| Location: | -300 m U/S FROM G5.5 CONFLUENCE; LOCATED ALONG BLOCK 602#2 | Site No.: | 3 | Length surveyed (m): | 300.0 Method: IIC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6055 .60225 | Photos: | A10/23 Air Photos: BCB 91181.056 |
| Date: 10/4/96 | Time: 16:30 | Agency: C58 | Survey Crew: RD/CP \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 4.3 | Method Av. Chan. Width (m): | T | 5.6 | 3.3 | 3.9 | 4.8 | 4.1 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|----------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | | | |
| Dp Pool : | 20 | L.O.D.: | 50 | Boulder: | 20 | In Veg.: | 0 | Over Veg: | 0 | Cutbank: | 10 |
| Crown Closure % : | 60 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | | | | |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.00 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 4 A 7.0 | 1810 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 85 | Small (2-16mm): | 55 |
| | | Large (16-64mm): | 30 |
| % Larges: | 5 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | High |

Banks

| | | | | |
|----------------------|-----|--------------------------|------------|-------------|
| Height (m): | 1.5 | % Unstable: | 0 | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No | Bedrock: No |
| Confinement: | 4 | | | |
| Valley: Chan. Ratio: | 1 | | | |
| Stage: | Dry | | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS | |
| Braided: | N | Method Braided: | GE | |
| Bars (%): | 100 | Method Bars: | GE | |
| pH: | | Method pH: | | |
| 02 (ppm): | | Method Dissolved Oxygen: | | |
| Water Temp. (°C): | | Method Temperature: | | |
| Turb. (cm): | | Method Turbidity: | | |
| Cond. (µmhos): | | Method Conductivity: | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Channel was dry with only the 20 m u/s from the marsh wetted. |
| C2 | Suspect Reach 3 is accessible to fish during extreme high flow events. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------------------|-----------------------------|-------------------|---------------------------|-----------------|----------------------------|-----------------------|------------|--------------------|---------------------------|-------------|----------------------|------------------|-----------------------------|-------------|-------------|-----------------------|----------------------------|-----------------------|------------|---------------------|------|----------------------------|-------------------|---|-----|-----|-----|-----|---------------------------|-----|-----------------------------|----|-----------------|------|---------------------------------|----------------|--------------|---------------------------|----------|---------------------------|----------------------|---|--|--|--------|---|---------------|-----|--------------------|-----|---------------------|----|----------|---|-----------------|------------|--------------|-----------|--------------|------------|-----|-----|------------|----|-----------------|---|--------------------------|----|-------------------|------|---------------------|----|-------------|----------------|-------------------|---------------------|----------------|--|----------------------|--|--|--|--|--|--|--|--|-----------------|---|-----------------|---|------------|----|-----------------|---|--|--|------------------|----|-----------|----|--------------------------|----|--|--|---------------------------|---|--|--|--------------------------|---|------------|---|------------|---|-----------|---|-------------|--------|
| Stream Name: GABRIEL C. TRIBUTARY | | Stream "Local": G5 | | Access: 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-480-767-000-000-000-000-000-000 | | Map #: 093L033 | | Reach No.: 5 | | Reach Length (km): 0.5 | | Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: 100 m SECTION D/S FROM HEADWATER LAKE. | | U.T.M.: 9.6055 .60225 | | Site No.: 4 | | Length surveyed (m): 100.0 | | Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 9/26/96 | | Time: 10:00 | | Agency: C58 | | Fish Card: N | | Field: Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Crew: RD\SS \ \ \ \ \ | | Photos: B5/11, 12 | | Air Photos: BCB 91181:056 | | Historical: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="5">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>0.4</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>0.5</td> <td>0.3</td> <td>0.3</td> <td>0.4</td> <td>0.6</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>0.4</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>0.5</td> <td>0.3</td> <td>0.3</td> <td>0.4</td> <td>0.6</td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>3</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td colspan="5"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>20</td> <td>Av. Max. Pool Depth (cm):</td> <td>3</td> <td colspan="5"></td> </tr> <tr> <td>Gradient (%):</td> <td>4.0</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="5"></td> </tr> <tr> <td>% Pool: 30</td> <td>% Riffle: 60</td> <td>% Run: 10</td> <td>% Other: 0</td> <td colspan="5">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="5"></td> </tr> <tr> <td>% Debris Area:</td> <td>0-10</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="5"></td> </tr> </tbody> </table> | | | | | | | Specific Data | | | | | Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | T | 0.5 | 0.3 | 0.3 | 0.4 | 0.6 | Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.5 | 0.3 | 0.3 | 0.4 | 0.6 | Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | | Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 3 | | | | | | Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | % Pool: 30 | % Riffle: 60 | % Run: 10 | % Other: 0 | Method: GE | | | | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>0</td> <td>% Fines (<2mm):</td> <td>0</td> </tr> <tr> <td>% Gravels:</td> <td>15</td> <td>Small (2-16mm):</td> <td>5</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>10</td> </tr> <tr> <td>% Larges:</td> <td>85</td> <td>Small cobble (64-128mm):</td> <td>80</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>5</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>0</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>8</td> <td>Compaction:</td> <td>Medium</td> </tr> </tbody> </table> | | | | | % Fines (<2mm): | 0 | % Fines (<2mm): | 0 | % Gravels: | 15 | Small (2-16mm): | 5 | | | Large (16-64mm): | 10 | % Larges: | 85 | Small cobble (64-128mm): | 80 | | | Large cobble (128-256mm): | 5 | | | Boulder cobble (>256mm): | 0 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 8 | Compaction: | Medium |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | T | 0.5 | 0.3 | 0.3 | 0.4 | 0.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.5 | 0.3 | 0.3 | 0.4 | 0.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 30 | % Riffle: 60 | % Run: 10 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 15 | Small (2-16mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 85 | Small cobble (64-128mm): | 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 8 | Compaction: | Medium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>80</td> <td>Method Cover Total %:</td> <td>GE</td> </tr> <tr> <td>Dp Pool: 10</td> <td>L.O.D.: 10</td> <td>Boulder: 40</td> <td>In Veg.: 0</td> </tr> <tr> <td></td> <td></td> <td>Over Veg: 0</td> <td>Cutbank: 40</td> </tr> <tr> <td>Crown Closure % :</td> <td></td> <td>Method Crown Closure:</td> <td>Aspect: NE</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Method Aspect: AE</td> </tr> </tbody> </table> | | | | | Cover Total % : | 80 | Method Cover Total %: | GE | Dp Pool: 10 | L.O.D.: 10 | Boulder: 40 | In Veg.: 0 | | | Over Veg: 0 | Cutbank: 40 | Crown Closure % : | | Method Crown Closure: | Aspect: NE | | | | Method Aspect: AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>0.3</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel: Yes</td> <td>Larges: No</td> </tr> <tr> <td>Confinement:</td> <td>3</td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>L</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.2</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>0</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>7.9</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>10.0</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </tbody> </table> | | | | | Height (m): | 0.3 | % Unstable: | 0 | Textures Fines: | Yes | Gravel: Yes | Larges: No | Confinement: | 3 | Bedrock: | No | Valley: Chan. Ratio: | 1 | | | Stage: | L | | | Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 0 | Method Bars: | GE | pH: | 7.9 | Method pH: | PH | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 10.0 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: 10 | L.O.D.: 10 | Boulder: 40 | In Veg.: 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Over Veg: 0 | Cutbank: 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | | Method Crown Closure: | Aspect: NE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Method Aspect: AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 0.3 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 3 | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 7.9 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 10.0 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m) :</td> <td>Method Wetted Width (m) :</td> <td colspan="2"></td> </tr> <tr> <td>Mean Depth (m) :</td> <td>Method Mean Depth (m) :</td> <td colspan="2"></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td>Method Mean Velocity (m/s)</td> <td colspan="2">VO</td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.03</td> <td colspan="2">Method Discharge (m3/s) :</td> </tr> </tbody> </table> | | | | | | | Specific Data | | Wetted Width (m) : | Method Wetted Width (m) : | | | Mean Depth (m) : | Method Mean Depth (m) : | | | Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | <table border="1"> <tbody> <tr> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2">NF</td> </tr> <tr> <td>0 A 4.0</td> <td>0280</td> </tr> <tr> <td>(Width, Valley: Channel, Slope)</td> <td>(Bed Material)</td> </tr> </tbody> </table> | | | | | (Fish) | | NF | | 0 A 4.0 | 0280 | (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 A 4.0 | 0280 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 85 m length of stream, 1 pass with no lower net; No fish were caught. Easy fish access in outlet creek. Steep section in R4 d/s may present a barrier for fish migration u/s. |
| C2 | Lake is small and tannic in color. Channel d/s of lake is stable with pockets of potential resident spawning habitat present (large gravel bed material). Creek flows through a meadow area. |
| C3 | Lat/Lon of helicopter landing site: 54 21.84 127 25.07 |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-G5.-1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1
- Small, moss/algae covered seepage in brushy bog area. Discharge is a trickle flow and water is tannic. Channel is not defined and suspect it is seasonally-wetted. Creek is stable with limited LOD.
- C2
- Electrofished 50 m length of stream (10 m u/s from road and 40 m d/s from road), 1 pass with no lower net. No fish were caught or observed. Assume no fish use in G5.1.
- C3
- G5.1.1 and G5.1.2 were surveyed: both tributaries were small seepages in bog areas with intermittent flows and no defined channels. No fish habitat was present and it was conluded that there is no fish use in G5.1.1 and G5.1.2.

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-480-767-G5.-1 -000-000-000-000-000

Header Information

| | | | | | |
|------------------------|---|------------------------|--|---------------------------|---|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G5.1 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-767-G5.-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.5 Method: MW |
| Location: | SAMPLED U/S AND D/S FROM ROAD CULVERT. | Map #: | 093L034 | Site No.: | 5 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M. : | 9.6055 .60227 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/27/96 | Time: 12:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | Photos: | A8/23, 24 Air Photos: BCB 91181-046 |

Channel Characteristics

| | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|
| Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | GE | | | | |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.4 | 0.4 | 0.3 | 0.4 |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | |
| Av. Max. Pool Depth (cm): | 10 | Av. Max. Pool Depth (cm): | 2 | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | |
| % Pool: 20 | % Riffle: 30 | % Run: 50 | % Other: 0 | Method: | GE | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | |

Bed Material

| | | | |
|---------------------------|-----|------------------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Cover

| | | | | | | | |
|--------------------------|----|------------------------------|----|------------------|----|-----------------------|----|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 10 | Boulder: | 0 | In Veg.: | 0 |
| | | | | Over Veg: | 90 | Cutbank: | 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.7 | Method Temperature: | TC |
| Turb. (cm): | 100 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Reach Symbol

| (Fish) | | | |
|---------------------------------|--|----------------|--|
| NF | | | |
| 0 A 1.0 | | F | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-480-767-G5.-2 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------------------|----------------------|-----------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G5.2 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-767-G5.-2 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | ~125 m U/S FROM G5.2 CONFLUENCE. | Site No.: | 6 | Length surveyed (m): | 90.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/27/96 | Time: 13:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ | Photos: | A9/3, 4 Air Photos: BCB 91181:056 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.0 | 0.8 | 0.4 | 0.9 | 2.2 |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 2 | | | | | |
| Gradient (%): | 13.0 | Method Gradient: | CL | | | | | |
| % Pool: | 10 | % Riffle: | 70 | % Run: | 20 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 55 | Small (2-16mm): | 40 |
| | | Large (16-64mm): | 15 |
| % Larges: | 5 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 6 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE |
| Dp Pool : | 20 | L.O.D.: | 65 |
| Crown Closure % : | | Method Crown Closure: | |
| | | Boulder: | 10 |
| | | In Veg.: | 0 |
| | | Over Veg.: | 0 |
| | | Cutbank: | 5 |
| | | Aspect : | E |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.6 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 27 | Method Conductivity: | CM |

Discharge

| | |
|-----------------------|------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : |
| Discharge (m3/s) : | Method Discharge (m3/s) : |

Specific Data

(Fish)

NS

I A 13.0 4510

(Width, Valley: Channel, Slope) (Bed Material)

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-G5.-2 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Channel is confined in a narrow gully with a trickle flow discharge. The lower section of R2 has ~10% gradient which continuously increases going u/s. The gradient is ~13-15% at the road culvert and steepens above the road. |
| C2 | R1 of G5.2 was surveyed u/s from the mouth: a 0.5 m high drop over a bank is located at the mouth of the tributary. The slope is ~13% and the creek consists of a trickle flow over moss benches with the majority of the water flowing subsurface. ~60 m u/s from the mouth, the channel becomes more defined and is bedded with fine gravel and moss. Several 30 - 40 cm high drops over debris were observed up to R2. Assume no fish use in R1 and R2 of G5.2 based on unsuitable fish habitat and steep gradient. |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-G5.-4 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------|----------------------|-----------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G5.4 | Access: | V2 |
| Watershed Code: | 460-6006-508-480-767-G5.-4 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.9 Method: MW |
| Location: | AT ROAD CROSSING. | Site No.: | 7 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/27/96 | Time: 13:00 | Map #: | 093L034 | Photos: | A9/1, 2 Air Photos: BCB 91181:056 |
| Agency: C58 | Survey Crew: RD\CP \ \ \ \ \ \ \ \ | U.T.M.: | 9.6050 .60248 | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 2.2 | 2.0 | 2.7 | 2.8 | 2.9 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | |
| Gradient (%): | 11.0 | Method Gradient: | CL | | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 50 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 25 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 50 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 13 | Compaction: | High |

Cover

| | | | |
|-------------------|---------|-----------------------|----------|
| Cover Total % : | | Method Cover Total %: | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: |
| Crown Closure % : | 60 | Method Crown Closure: | GE |
| | | Aspect : | NE |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: Yes |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | Dry | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 100 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|---------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : VO |
| Discharge (m3/s) : | 0.00 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 3 B 11.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-G5.-4 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Creek dewatered. |
| C2 | Dynamic, steep tributary, with mainly cobble and with a large amount of debris lying in the channel. Gradient steepens u/s from the road. |
| C3 | The top of R1 is located ~50 m d/s from the road. There is no defined channel throughout R1 and the creek drops over a bench at the confluence with G5.0. An average gradient of 8% is consistent throughout R1. No fish access to G5.4 based on gradient. |

DFO/MoELP Stream Survey Form

26-Mur-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-G5.-6 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------|----------------------|-------------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G5.6 | Access: | H |
| Watershed Code: | 460-6006-508-480-767-G5.-6 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.6 Method: MW |
| Location: | CHANNEL BELOW SHALLOW POND, ~1.2 km U/S FROM G5.6 CONFLUENCE. | Site No.: | 8 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6038 .60254 | Photos: | B5/13, 14 Air Photos: BCB 91181:056 |
| Date: | 9/26/96 | Time: | 16:00 | Agency: | C58 |
| | | Survey Crew: | RD/SS \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|
| Av. Chan. Width (m): | 0.3 | Method Av. Chan. Width (m): | T | 0.3 | 0.3 | 0.4 | 0.3 |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | T | 0.3 | 0.3 | 0.4 | 0.3 |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 2 | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: | GE | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 70 | Small cobble (64-128mm): | 60 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | High |

Cover

| | | | |
|-----------------------|-----------------------|-----------------------|-------------------|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool: 20 L.O.D.: 0 | Boulder: 30 | In Veg.: 0 | Over Veg: 0 |
| Crown Closure % : | Method Crown Closure: | Aspect: NE | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 0 B 7.0 | 2170 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-767-C15.-6 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1 Electroshocked 80 m length of stream below the pond. No fish were caught or observed. A Western Spotted frog was caught at the sample site.
- C2 Sampled below shallow pond. No outlet channel on small lake above. (The map showed G5.6 flowing out of the lake.)
- C3 Restricted access to outlet channel of the pond due to gradient. 200 m d/s, the channel becomes very steep.
- C4 Bed material of creek consists of cobble/fines; areas suitable for spawning are limited.
- C5 Lat/Lon of helicopter landing site: 54 22.09 127 25.06

DFO/MoELP Stream Survey Form

26-Mar-9"

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-G8 -000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------|----------------------|----------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G8 | Access: | FT |
| Watershed Code: | 460-6006-508-480-G8 -000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~250 m U/S FROM G8 CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 400.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6043 .60214 | Photos: | A10/17 Air Photos: BCB 91180:158 |
| Date: | 10/4/96 | Time: | 12:00 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 4.3 | Method Av. Chan. Width (m): | T | 3.8 | 4.9 | 3.1 | 5.2 | 4.7 |
| Av. Wet. Width (m): | 2.1 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 2 | | | | | |
| Gradient (%): | 14.0 | Method Gradient: | CL | | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: | GE | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | |
| % Debris Area: | 30 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | |
| Dp Pool: 20 | L.O.D.: 60 | Boulder: 20 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | |
| Crown Closure % : | 35 | Method Crown Closure: | GE | Aspect: NW | Method Aspect: AE | | | |

Discharge

| | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.07 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 4 A 14.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 75 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 15 |
| | | Boulder cobble (>256mm): | 20 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GL |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-G8 -000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1DV were caught d/s at the bridge. Suspect DV presence in the lower 400 m of R1.
- C2Creek channel is confined with very steep sideslopes. Gradient is 12 - 15 % and several 0.5 m high drops over debris were observed. The upper limit of fish distribution is ~380 m u/s from the G8 confluence due to the steep gradient, the confined canyon, and the numerous 1+ m high drops over bedrock that are present in this u/s section.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-G8 -000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|-----------------------------------|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G8 | Access: | 11 |
| Watershed Code: | 460-6006-508-480-G8 -000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.8 Method: MW |
| Location: | AT MEADOW AREA ALONG CREEK, ~200 m U/S FROM G8.3 CONFLUENCE. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6043 60214 | Photos: | B5/5, 6 Air Photos: BCB 91180:158 |
| Date: 9/26/96 | Time: 11:00 | Agency: C58 | Survey Crew: RD/SS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|-------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.7 | Method Av. Chan. Width (m): | T | 2.3 | 2.2 | 3.3 | 2.4 | 2.7 | 3.2 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.8 | 0.9 | 1.9 | 1.7 | 1.4 | 2.0 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 40 | % Run: 30 | % Other: 10 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 45 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 30 |
| % Large: | 45 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | Medium |

Cover

| | | | |
|------------------|------------|-----------------------|-------------|
| Cover Total %: | 75 | Method Cover Total %: | GE |
| Dp Pool: 20 | L.O.D.: 30 | Boulder: 40 | In Veg.: 0 |
| | | Over Veg: 0 | Cutbank: 10 |
| Crown Closure %: | | Method Crown Closure: | Aspect: N |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 7.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|----------------------|----------------------------|--------------------------|--|
| Wetted Width (m): | Method Wetted Width (m): | | |
| Mean Depth (m): | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s): | 0.06 | Method Discharge (m3/s): | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 3 A 5.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-G8 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Electrofished 70 m length of stream, 1 pass with no lower net. No fish were caught or observed. Suspect canyon below is impassable and R2 is classed as S5/S6 habitat.
- C2Creek contains good fish habitat. Bed material is too large for resident DV spawning (pockets of suitable DV spawning) but is suitable for CO spawning if fish were present.
- C3Creek has a high potential to move small debris.

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-G8 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|--------------------|--|
| Stream Name: | GABRIEL C. TRIBUTARY | Stream "Local": | G8 | Access: | 11 |
| Watershed Code: | 460-6006-508-480-G8 -000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.0 Method: MW |
| Location: | UPPER MEADOW ON G8, ~850 m U/S FROM G8.3 CONFLUENCE. | Map #: | 093L034 | Site No.: | 3 Length surveyed (m): 100.0 Method: IIC |
| | | U.T.M.: | 9.6043 .60214 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/26/96 | Time: 12:00 | Agency: C58 | Survey Crew: RD\SS\ \ \ \ \ \ \ \ | Photos: | B5/7, 8 Air Photos: BCB 91180:158 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.2 | 1.6 | 0.9 | 1.2 | 1.1 | 0.8 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 1.2 | 1.6 | 0.9 | 1.2 | 1.1 | 0.8 |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 0 | % Run: 80 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 5 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|------------|----|----------------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 0 |
| | | | | Over Veg.: | 10 | Cutbank: | 90 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | NE | Method Aspect: | AE |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I D 0.5 | 1900 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 90 | Small (2-16mm): | 70 |
| | | Large (16-64mm): | 20 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 3 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

26-Mar-97

Stream: GABRIEL C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-480-G8 -000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 73 m length of stream (at lower end of the meadow), 1 pass with no lower net. No fish were caught or observed. |
| C2 | Small, stable meandering creek. Gradient is very low (~1%) and no potential spawning is present (very brackish bottom). |
| C3 | R2 d/s of the meadow is steep (~10% gradient) with cobble bed material, the tributary flows along a recent cutblock. |
| C4 | Lat/Lon of helicopter landing site: 54 18.71 127 24.10 |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-493-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH27 | Access: | FT |
| Watershed Code: | 460-6006-508-493-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | ~80 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 178.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/24/96 | Time: 14:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | Photos: | A6/6, 7 Air Photos: BCB 91181:044 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6078 .60212 | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 1.8 | Method Av. Chan. Width (m): | T | 2.1 | 1.6 | 1.1 | 2.3 | 1.8 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 4 | | | | | |
| Gradient (%): | 4.5 | Method Gradient: | CL | | | | | |
| % Pool: | 10 | % Riffle: | 60 | % Run: | 30 | % Other: | 0 | Method: GE |
| % Side Channel: | 5 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|-----------|---|----------------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 10 | L.O.D.: | 50 | Boulder: | 0 | In Veg.: | 5 |
| Crown Closure % : | | Method Crown Closure: | | Over Veg: | 0 | Cutbank: | 35 |
| | | | | Aspect : | W | Method Aspect: | AE |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | (SP) | |
| 2 D 5.0 | 1630 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 60 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 50 |
| % Larges: | 30 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.1 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-493-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Th27 flows into a dry sidechannel of the Thautil R. The lower 70 m of the tributary is a fan; gradient is ~5% and there is easy fish access in slightly higher flows. Sections of suitable spawning are present.
- C2 ~70 m - 114 m u/s from the mouth, the gradient increases to 15% and numerous 40 - 50 cm high drops are present. Channel becomes confined. ~180 m u/s from mouth gradient is 20% and continues u/s (reach break).
- C3 Reach 1 is easily accessible to fish from the main Thautil River and is classified as S3 habitat.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-493-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|-----------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH27 | Access: | FI |
| Watershed Code: | 460-6006-508-493-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.7 Method: MW |
| Location: | ~200 -250 m U/S FROM MOUTH. | Site No.: | 2 | Length surveyed (m): | 250.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6078 .60212 | Photos: | A6/4, 5 Air Photos: BCB 91181:044 |
| Date: 9/24/96 | Time: 14:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 1.6 | 0.9 | 0.6 | 2.7 | 2.6 | 1.8 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 16.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 80 | % Run: 5 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 2 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 25 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|----------------|------------|--|--|--|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 0 | L.O.D.: 20 | Boulder: 80 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | | |
| Crown Closure % : | | Method Crown Closure: | Aspect: W | Method Aspect: | AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 A 16.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 30 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 15 |
| % Larges: | 55 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 21 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 3.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-493-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 No fish observed in Th27. Numerous juvenile salmonids were observed in the Thautil R. sidechannel.
- C2 Very steep and confined channel in the lower end of R2. No fish access from d/s sections. Further u/s, the gradient decreases and habitat is suitable for fish.
- C3 R2 is classed as suspected S3 habitat; possible fish use but due to the gradient obstruction d/s, the fish must be residents. Should sample u/s to determine the presence of resident fish in the upper section of R2. R3 is steep and with no fish use; classified as S6 habitat. Poor access into the mid-reach of this system with no landing sites. This will change with recent road construction.
- C4 Th27.1 was surveyed: gradient was ~25% above the confluence; no fish access. Channel width was ~70 cm wide with a trickle flow, and bed material consisted of cobble/boulder/moss. Should sample u/s to determine if resident fish are present.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH28 | Access: | H |
| Watershed Code: | 460-6006-508-513-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | ~280 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N |
| | | U.T.M.: | 9.6080 .60218 | Field: | Yes |
| Date: 9/20/96 | Time: 16:15 | Agency: C58 | Survey Crew: DB\CP\ \ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | DB2/7, 8 |
| | | | | Air Photos: | BCB 91181:044 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 6.2 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 4.0 | Method Av. Wet. Width (m): | T | 6.9 | 5.1 | 5.2 | 6.4 | 7.1 | 6.5 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 30 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|-----------|----|----------------|----|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 60 | Boulder: | 30 | In Veg.: | 0 |
| Crown Closure % : | 80 | Method Crown Closure: | GE | Over Veg: | 1 | Cutbank: | 9 |
| | | | | Aspect : | SW | Method Aspect: | AE |

Discharge

| | | | | |
|-----------------------|------|----------------------------|----|----------------------|
| Wetted Width (m) : | | Method Wetted Width (m) : | | <i>Specific Data</i> |
| Mean Depth (m) : | | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | | |

Reach Symbol

| |
|--|
| (Fish) |
| SST DV* |
| 6 C 5.0 1630 |
| (Width, Valley: Channel, Slope) (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 65 | Small (2-16mm): | 30 |
| | | Large (16-64mm): | 35 |
| % Larges: | 30 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 13 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 3 | 86 - 113 | J | R | | | EL |
| DV | 40 | <150 | A | S | M | | VO |

Obstructions

Comments

- C1Electrofished 35 m length of stream, 1 pass with no lower net.
- C240 DV actively spawning adults (<150 mm) and ~25 DV redds were visually observed ~170 - 200 m u/s from Th28 confluence with the Thautil R. mainstem.
- C3Heavy alder overstory provides excellent cover for Th28.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------|--|--|--|--------------------|--|---|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH28 | | Access: | | H | |
| Watershed Code: | | 460-6006-508-513-000-000-000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 0.9 Method: MW | |
| Location: | | ~500 m U/S FROM MOUTH. | | Map #: | | 093L034 | | Site No.: | | 2 Length surveyed (m): 200.0 Method: HC | |
| | | | | U.T.M.: | | 9.6080 .60218 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/20/96 | | Time: 16:15 | | Agency: C58 | | Survey Crew: RD\ \ \ \ \ \ \ \ | | Photos: | | A5/8, 9 Air Photos: BCB 91181:044 | |
| Channel Characteristics | | | | | | Bed Material | | | | | |
| | | | | | | Specific Data | | | | | |
| Av. Chan. Width (m): | | 6.3 Method Av. Chan. Width (m): | | T | | 7.1 | | 5.4 | | 4.9 6.5 7.0 6.6 | |
| Av. Wet. Width (m): | | 4.0 Method Av. Wet. Width (m): | | T | | | | | | | |
| Av. Max. Rif. Depth (cm): | | 11 Av. Max. Riffle Depth (cm): | | MS | | | | | | | |
| Av. Max. Pool Depth (cm): | | 38 Av. Max. Pool Depth (cm): | | H | | | | | | | |
| Gradient (%): | | 5.0 Method Gradient: | | CL | | | | | | | |
| % Pool: 20 | | % Riffle: 30 | | % Run: 40 | | % Other: 10 | | Method: GE | | | |
| % Side Channel: | | 0-10 Method Side Channel: | | GE | | | | | | | |
| % Debris Area: | | 50 Method Debris Area: | | GE | | | | | | | |
| Cover | | | | | | Banks | | | | | |
| Cover Total %: | | 60 Method Cover Total %: | | GE | | | | | | | |
| Dp Pool: 10 L.O.D.: | | 45 Boulder: 30 | | In Veg.: 0 | | Over Veg: 0 | | Cutbank: 15 | | | |
| Crown Closure %: | | 25 Method Crown Closure: | | GE | | Aspect: SW | | Method Aspect: AE | | | |
| Discharge | | | | | | Banks | | | | | |
| | | | | | | Specific Data | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) | | VO | | | | | | | |
| Discharge (m3/s): | | 0.20 Method Discharge (m3/s): | | | | | | | | | |
| Reach Symbol | | | | | | Banks | | | | | |
| | | | | | | Height (m): 1.5 % Unstable: 0 | | | | | |
| | | | | | | Textures Fines: No Gravel: Yes Larges: Yes Bedrock: No | | | | | |
| | | | | | | Confinement: 2 | | | | | |
| | | | | | | Valley: Chan. Ratio: 2 | | | | | |
| | | | | | | Stage: M | | | | | |
| | | | | | | Flood Signs Ht(m): 0.3 Method Flood Signs: MS | | | | | |
| | | | | | | Braided: N Method Braided: GE | | | | | |
| | | | | | | Bars (%): 20 Method Bars: GE | | | | | |
| | | | | | | pH: Method pH: | | | | | |
| | | | | | | O2 (ppm): Method Dissolved Oxygen: | | | | | |
| | | | | | | Water Temp. (°C): 5.0 Method Temperature: TC | | | | | |
| | | | | | | Turb. (cm): 200 Method Turbidity: GE | | | | | |
| | | | | | | Cond. (µmhos): Method Conductivity: | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | R2 was not sampled. Assume DV and SST are present due to their presence d/s in R1. |
| C2 | Dynamic creek; channel contains large amounts of LOD. Bed material consists primarily of cobble/fines; limited spawning potential. |
| C3 | R3 was surveyed by air; habitat is suitable for fish and suspect fish use. No landing sites in the mid-reach areas. Should be road access into this section within the year. |
| C4 | Th28.1 to Th28.4 were surveyed by air; suspect Th28.1 may have fish use based on gradient; Th28.2 to Th28.4 tributaries all flow into Th28 over a steep embankment, so are suspected to be barren due to no fish access and due to the steep gradient and small size of each creek. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|--------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH28 | Access: | II |
| Watershed Code: | 460-6006-508-513-000-000-000-000-000-000-000 | Reach No.: | 4 | Reach Length (km): | 2.2 Method: MW |
| Location: | TOP END OF TH28, ~3300 m U/S FROM MOUTH. | Site No.: | 3 | Length surveyed (m): | 200.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6080 60218 | Photos: | A14/17, 18 Air Photos: BCB 91181.044 |
| Date: | 10/22/96 | Time: | 13:00 | Agency: | C58 |
| | | Survey Crew: | RDICP \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 1.6 | 2.4 | 1.8 | 1.1 | 2.6 | 1.9 |
| Av. Wet. Width (m): | 1.9 | Method Av. Wet. Width (m): | T | 1.6 | 2.4 | 1.8 | 1.1 | 2.6 | 1.9 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 24 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 40 | % Run: | 40 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 60 | % Fines (<2mm): | 60 |
| % Gravels: | 40 | Small (2-16mm): | 25 |
| | | Large (16-64mm): | 15 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 3 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 50 | Method Cover Total %: | GE |
| Dp Pool : | 15 | L.O.D.: | 15 |
| | | Boulder: | 0 |
| | | In Veg.: | 30 |
| | | Over Veg.: | 30 |
| | | Cutbank: | 10 |
| Crown Closure % : | 20 | Method Crown Closure: | GE |
| | | Aspect : | SW |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 C 3.0 | 6400 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electroshocked 120 m length of stream, 1 pass with no lower net. No fish were caught or observed although habitat appears to be suitable for fish. |
| C2 | Small, stable creek. Abundant instream grass/weeds. Bed material consists primarily of sand/silt and fine gravels; no potential spawning areas were observed. |
| C3 | Old beaver dams and shallow ponded sections are present in this area, -0.3 m high drops were observed below the ponds. |
| C4 | Based on the sample site and air observations, R4 and all creeks entering it were classed as S6 habitat. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-818-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|---------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH28.8 | Access: | 11 |
| Watershed Code: | 460-6006-508-513-818-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | Method: MW |
| Location: | SMALL HEADWATER POND. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6016 .60233 | Photos: | DB2/1 Air Photos: BCB 91181:044 |
| Date: 9/19/96 | Time: 15:00 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | |
|---------------------------|-----------------------------|-------------------------|
| Av. Chan. Width (m): | Method Av. Chan. Width (m): | |
| Av. Wet. Width (m): | Method Av. Wet. Width (m): | |
| Av. Max. Rif. Depth (cm): | Av. Max. Riffle Depth (cm): | |
| Av. Max. Pool Depth (cm): | Av. Max. Pool Depth (cm): | |
| Gradient (%): | Method Gradient: | |
| % Pool: | % Riffle: | % Run: % Other: Method: |
| % Side Channel: | Method Side Channel: | |
| % Debris Area: | Method Debris Area: | |

Specific Data

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: High |

Cover

| | |
|-------------------|--|
| Cover Total % : | Method Cover Total %: |
| Dp Pool: L.O.D.: | Boulder: In Veg.: Over Veg.: Cutbank: |
| Crown Closure % : | Method Crown Closure: Aspect: Method Aspect: |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | L |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | 7.7 Method pH: PH |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | 10.5 Method Temperature: TC |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

Discharge

| | |
|----------------------|----------------------------|
| Wetted Width (m): | Method Wetted Width (m): |
| Mean Depth (m): | Method Mean Depth (m): |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) |
| Discharge (m3/s): | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-513-818-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1 Set 5 minnow traps in pond overnight; no fish were caught. Aquatic leeches and beetles were observed.
- C2 Pond dimensions: ~50 m x 75 m. No outflow of Th28.8 channel was observed.
- C3 Pond lilies and sedges lined the edge of the pond and conifers grew where the pond had dried out.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -30 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------|--------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH30 | Access: | 11 |
| Watershed Code: | 460-6006-508-TH -30 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.0 Method: MW |
| Location: | ~40 m U/S FROM CONFLUENCE WITH THE THAUTIL R. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M.: | 9.6080 .60238 | Fish Card: | N Field: Yes Historical: No |
| Date: | 9/24/96 | Time: | 17:00 | Agency: | C58 |
| Survey Crew: | CP \ \ \ \ \ \ \ \ | Photos: | A6/8, 9 | Air Photos: | BCB 91181:045 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.4 | 0.3 | 0.8 | 0.5 | 0.4 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 5 | | | | | |
| Gradient (%): | 15.0 | Method Gradient: | CL | | | | | |
| % Pool: | 10 | % Riffle: | 80 | % Run: | 10 | % Other: | 0 | Method: GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 10 | Boulder: | 60 | In Veg.: | 0 | Over Veg: | 5 |
| Crown Closure % : | 40 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | Cutbank: | 25 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 15.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 50 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 30 |
| % Larges: | 45 | Small cobble (64-128mm): | 35 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.3 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -30 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 5 | F | 0.0 |

Comments

- C15 m drop at the confluence of Th30; inaccessible to fish.
- C2Th30 was not sampled; no fish habitat was present due to the creek's steep gradient.
- C3Th30 flows into a sidechannel of the Thautil R.

27-Mar-97

Stream: DENYS C.

Watershed Code:

460-6006-508-584-000-000-000-000-000-000-000

| | | | | | |
|------------------------|--|------------------------|---------------------------------------|---------------------------|--|
| Stream Name: | DENYS C. | Stream "Local": | DENYS C. (TH31) | Access: | 11 |
| Watershed Code: | 460-6006-508-584-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 5.1 Method: MW |
| Location: | ~350 m U/S FROM D7 CONFLUENCE. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 5100.0 Method: HC |
| | | U.T.M. : | 9.6105 .60256 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/18/96 | Time: 9:25 | Agency: C58 | Survey Crew: JH\ \ \ \ \ \ \ \ | Photos: | B1/21 Air Photos: BCB 91181:060 |

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|------|------|------|------|
| Av. Chan. Width (m): | 15.9 | Method Av. Chan. Width (m): | T | 18.0 | 14.8 | 15.7 | 18.4 | 16.0 | 12.7 |
| Av. Wet. Width (m): | 11.8 | Method Av. Wet. Width (m): | T | 8.4 | 13.3 | 15.6 | 9.8 | | |
| Av. Max. Rif. Depth (cm): | 42 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 72 | Av. Max. Pool Depth (cm): | 42 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

| | | | |
|---------------------------|----|------------------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 85 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 21 | Compaction: | Medium |

| | | | | | | | |
|---------------------|----|-----------------------|------------|--------------|----------------|----|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | |
| Dp Pool: 10 L.O.D.: | 5 | Boulder: 55 | In Veg.: 0 | Over Veg: 20 | Cutbank: | 10 | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: | Al | |

| | | | | | |
|-----------------------------|-----|---------------------------------|--------------------|-----------------|----|
| Height (m): | 1.2 | % Unstable: | 5 | | |
| Textures Fines: | No | Gravel: No | Larges: Yes | Bedrock: | No |
| Confinement: | 2 | | | | |
| Valley: Chan. Ratio: | 2 | | | | |
| Stage: | M | | | | |
| Flood Signs Illt(m): | 0.5 | Method Flood Signs: | | | MS |
| Braided: | N | Method Braided: | | | GE |
| Bars (%): | 25 | Method Bars: | | | GE |
| pH: | 8.1 | Method pH: | | | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | | | |
| Water Temp. (°C): | 6.0 | Method Temperature: | | | TC |
| Turb. (cm): | 200 | Method Turbidity: | | | GE |
| Cond. (umhos): | | Method Conductivity: | | | |

| | |
|---------------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) |
| Discharge (m ³ /s) : | Method Discharge (m ³ /s) : |

| (Fish) | |
|---------------------------------|----------------|
| CO DV BT RB (SST) | |
| 16 B 1.5 | 1180 |
| (Width, Valley; Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1
- This site was not fish sampled; an index site located in R1 ~250 m d/s from this site indicated the presence of CO, DV, BT, and RB. Suspect SST are also present.
- C2
- Eroding banks were observed in R1: 50 m high x 30 m wide eroding bank at bend ~1390 m u/s from Denys confluence (Photo B1/21); 30 m high x 20 m wide eroding bank ~612 m u/s from D5 confluence.
- C3
- Well-used animal trails were observed along the benches on both sides of Denys C. for much of R1.
- C4
- Tributaries D2 and D3 were surveyed; no defined channels were present in the dry gullies. Tributary D8 was surveyed and had no defined channel and no potential fish habitat. There is no fish access to D8 from Denys C.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------|--------------------|--|
| Stream Name: | DENYS C. | Stream "Local": | DENYS C. (TH31) | Access: | 11 |
| Watershed Code: | 460-6006-508-584-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 4.5 Method: MW |
| Location: | ~200 m U/S FROM D15, ~1800 m U/S FROM LOLJUH C. CONFLUENCE. | Map #: | 093L034 | Site No.: | 2 Length surveyed (m): 4500.0 Method: HC |
| Date: 9/19/96 | Time: 17:00 | U.T.M.: | 9.6105 60256 | Fish Card: | N Field: Yes Historical: No |
| Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | B3/17 | Air Photos: | BCB 91181:173 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|------|-----|------|------|
| Av. Chan. Width (m): | 11.3 | Method Av. Chan. Width (m): | T | 13.5 | 11.6 | 10.6 | 9.5 | 10.2 | 12.4 |
| Av. Wet. Width (m): | 8.6 | Method Av. Wet. Width (m): | T | 9.1 | 9.8 | 7.0 | | | |
| Av. Max. Rif. Depth (cm): | 32 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 68 | Av. Max. Pool Depth (cm): | 32 | | | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Large: | 80 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 35 | Compaction: | Medium |

Cover

| | | | |
|------------------------|-------------|-----------------------|-------------------|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: 10 | Boulder: 60 | In Veg.: 0 | Over Veg: 15 |
| Crown Closure % : | 5 | Method Crown Closure: | GE |
| | | Aspect: SW | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 1.5 | % Unstable: | 10 |
| Textures Fines: | No | Gravel: No | Larges: Yes |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 1.5 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 25 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | FC |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|----------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) |
| Discharge (m3/s) : | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) (BT) | |
| 11 C 1.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Evidence of very high flows in R2; floodsigns extended up to 60 m over from the stream edge. |
| C2 | Unstable banks were observed in R2: 45 m high x 20 m wide unstable bank ~133 m u/s from D19 (Photos B4/8, 9); 60 m high x 30 m wide eroding bank ~100 m u/s from D20B. |
| C3 | Well-used animal trails were observed on the floodplain. |
| C4 | No stream channels were found for tributaries D13, D14, D16, and D21. D18 and D19 were observed but did not have defined channels, showed no evidence of surface flow, and contained no fish habitat. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|---------------------------------|-------------------|----------------|----------------|-----------------------------|-----------------------|------------|-------------------|-----------|--------------------------|----------------------|-----------------|-----------------------------|------------------------|------------|----------------------|------|-----------------------------|------|---------------------|------|----------------------------|-------------------|---|-----|-----|-----|-----|---------------------------|-----|-----------------------------|----|-----------------|------|---------------------------------|----------------|--------------|---------------------------|----------|---------------------------|----------------------|---|--|--|--------|---|---------------|-----|--------------------|-----|---------------------|----|----------|---|-----------------|------------|--------------|-----------|--------------|------------|-----|-----|------------|----|-----------------|------|--------------------------|----|-------------------|-----|---------------------|----|-------------|----------------|-------------------|---------------------|----------------|----|----------------------|----|--|--|---|--|--|--|--|-----------------|---|-----------------|---|------------|----|-----------------|---|--|--|------------------|----|-----------|----|--------------------------|----|--|--|---------------------------|----|--|--|--------------------------|----|------------|---|------------|---|-----------|----|-------------|--------|
| Stream Name: DENYS C. | | Stream "Local": DENYS C. (TH31) | | Access: H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-584-000-000-000-000-000-000-000 | | Map #: 093L044 | | Reach No.: 3 | | Reach Length (km): 3.5 | | Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: ~140 m U/S FROM D24 CONFLUENCE. | | U.T.M.: 9.6105 .60256 | | Site No.: 3 | | Length surveyed (m): 3500.0 | | Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/15/96 | | Time: 16:00 | | Agency: C58 | | Fish Card: N | | Field: Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Crew: RD\CP\ \ \ \ \ \ | | Photos: A14/5, 6 | | Air Photos: BC | | Historical: No | | 7326:242 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="5">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>10.9</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>10.7</td> <td>10.2</td> <td>10.5</td> <td>12.6</td> <td>10.3</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>7.5</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>10.1</td> <td>7.9</td> <td>8.1</td> <td>6.4</td> <td>4.9</td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>19</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td colspan="5"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>45</td> <td>Av. Max. Pool Depth (cm):</td> <td>19</td> <td colspan="5"></td> </tr> <tr> <td>Gradient (%):</td> <td>1.5</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="5"></td> </tr> <tr> <td>% Pool: 10</td> <td>% Riffle: 70</td> <td>% Run: 20</td> <td>% Other: 0</td> <td colspan="5">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0-10</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="5"></td> </tr> <tr> <td>% Debris Area:</td> <td>0-10</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="5"></td> </tr> </tbody> </table> | | | | | | | Specific Data | | | | | Av. Chan. Width (m): | 10.9 | Method Av. Chan. Width (m): | T | 10.7 | 10.2 | 10.5 | 12.6 | 10.3 | Av. Wet. Width (m): | 7.5 | Method Av. Wet. Width (m): | T | 10.1 | 7.9 | 8.1 | 6.4 | 4.9 | Av. Max. Rif. Depth (cm): | 19 | Av. Max. Riffle Depth (cm): | MS | | | | | | Av. Max. Pool Depth (cm): | 45 | Av. Max. Pool Depth (cm): | 19 | | | | | | Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | | % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>5</td> <td>% Fines (<2mm):</td> <td>5</td> </tr> <tr> <td>% Gravels:</td> <td>15</td> <td>Small (2-16mm):</td> <td>5</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>10</td> </tr> <tr> <td>% Larges:</td> <td>80</td> <td>Small cobble (64-128mm):</td> <td>30</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>40</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>10</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>26</td> <td>Compaction:</td> <td>Medium</td> </tr> </tbody> </table> | | | | | % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | % Gravels: | 15 | Small (2-16mm): | 5 | | | Large (16-64mm): | 10 | % Larges: | 80 | Small cobble (64-128mm): | 30 | | | Large cobble (128-256mm): | 40 | | | Boulder cobble (>256mm): | 10 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 26 | Compaction: | Medium |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 10.9 | Method Av. Chan. Width (m): | T | 10.7 | 10.2 | 10.5 | 12.6 | 10.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 7.5 | Method Av. Wet. Width (m): | T | 10.1 | 7.9 | 8.1 | 6.4 | 4.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 19 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 45 | Av. Max. Pool Depth (cm): | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 10 | % Riffle: 70 | % Run: 20 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 15 | Small (2-16mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 80 | Small cobble (64-128mm): | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 26 | Compaction: | Medium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total %:</td> <td>70</td> <td>Method Cover Total %:</td> <td>GE</td> </tr> <tr> <td>Dp Pool: 25</td> <td>L.O.D.: 5</td> <td>Boulder: 65</td> <td>In Veg.: 0</td> </tr> <tr> <td></td> <td></td> <td>Over Veg: 0</td> <td>Cutbank: 5</td> </tr> <tr> <td>Crown Closure %:</td> <td>5</td> <td>Method Crown Closure:</td> <td>GE</td> </tr> <tr> <td></td> <td></td> <td>Aspect: SW</td> <td>Method Aspect: AE</td> </tr> </tbody> </table> | | | | | Cover Total %: | 70 | Method Cover Total %: | GE | Dp Pool: 25 | L.O.D.: 5 | Boulder: 65 | In Veg.: 0 | | | Over Veg: 0 | Cutbank: 5 | Crown Closure %: | 5 | Method Crown Closure: | GE | | | Aspect: SW | Method Aspect: AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>1.0</td> <td>% Unstable:</td> <td>5</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel: Yes</td> <td>Larges: No</td> </tr> <tr> <td>Confinement:</td> <td>3</td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.8</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>30</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>7.6</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>2.0</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td>60</td> <td>Method Conductivity:</td> <td>CM</td> </tr> </tbody> </table> | | | | | Height (m): | 1.0 | % Unstable: | 5 | Textures Fines: | Yes | Gravel: Yes | Larges: No | Confinement: | 3 | Bedrock: | No | Valley: Chan. Ratio: | 2 | | | Stage: | M | | | Flood Signs Ht(m): | 0.8 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 30 | Method Bars: | GE | pH: | 7.6 | Method pH: | PH | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 2.0 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | 60 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total %: | 70 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: 25 | L.O.D.: 5 | Boulder: 65 | In Veg.: 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Over Veg: 0 | Cutbank: 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure %: | 5 | Method Crown Closure: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Aspect: SW | Method Aspect: AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 1.0 | % Unstable: | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 3 | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.8 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 30 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 7.6 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | 60 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m):</td> <td></td> <td>Method Wetted Width (m):</td> <td></td> </tr> <tr> <td>Mean Depth (m):</td> <td></td> <td>Method Mean Depth (m):</td> <td></td> </tr> <tr> <td>Mean Velocity (m/s):</td> <td></td> <td>Method Mean Velocity (m/s):</td> <td>VO</td> </tr> <tr> <td>Discharge (m3/s):</td> <td>0.85</td> <td>Method Discharge (m3/s):</td> <td></td> </tr> </tbody> </table> | | | | | | | Specific Data | | Wetted Width (m): | | Method Wetted Width (m): | | Mean Depth (m): | | Method Mean Depth (m): | | Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | Discharge (m3/s): | 0.85 | Method Discharge (m3/s): | | <table border="1"> <tbody> <tr> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2">DV BT</td> </tr> <tr> <td>11 B 1.5</td> <td>1170</td> </tr> <tr> <td>(Width, Valley: Channel, Slope)</td> <td>(Bed Material)</td> </tr> </tbody> </table> | | | | | (Fish) | | DV BT | | 11 B 1.5 | 1170 | (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s): | 0.85 | Method Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DV BT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 B 1.5 | 1170 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

| | |
|----|---|
| C1 | Air Temp: 0.5 C. |
| C2 | This site was not sampled; assume BT and DV are present due to their presence at index site In2, located ~1400 m d/s from this site, and due to easy fish access throughout this reach. |
| C3 | Bed material consists primarily of boulder/cobble, but isolated pockets of good BT spawning are present. No redds were observed. |
| C4 | Large gravel banks and unstable silt-gravel banks were observed in R3 |

DFO/MoELP Stream Survey Form

2-Min-9

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|------------------------------------|
| Stream Name: | DENYS C. | Stream "Local": | DENYS C. (TH31) | Access: | H |
| Watershed Code: | 460-6006-508-584-000-000-000-000-000-000-000 | Reach No.: | 5 | Reach Length (km): | 4.6 Method: MW |
| Location: | ~300 m U/S FROM D26 CONFLUENCE. | Site No.: | 4 | Length surveyed (m): | 4600.0 Method: IIC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6105 .60256 | Photos: | B11/19, 20 Air Photos: BC 7326 152 |
| Date: | 10/16/96 | Time: | 9:00 | Agency: | C58 |
| | | Survey Crew: | SSUH \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|------|----------|-----|---------|------|
| Av. Chan. Width (m): | 10.5 | Method Av. Chan. Width (m): | T | 15.4 | 12.8 | 7.8 | 6.5 | 9.5 | 10.9 |
| Av. Wet. Width (m): | 8.0 | Method Av. Wet. Width (m): | T | 9.1 | 9.8 | 7.0 | 6.5 | 5.4 | 10.3 |
| Av. Max. Rif. Depth (cm): | 23 | Av. Max. Riffle Depth (cm): | MS | 25 | 25 | 20 | | | |
| Av. Max. Pool Depth (cm): | 48 | Av. Max. Pool Depth (cm): | 23 | 50 | 45 | 50 | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 25 | % Riffle: | 70 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|------------|---|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 15 | L.O.D.: | 5 | Boulder: | 70 | In Veg.: | 0 | Over Veg.: | 5 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | SW | Method Aspect: | AE | | |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.40 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* BT* | |
| 11 B 1.0 | 1171 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 75 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 5 | % Bedrock: | 5 |
| D90 (cm): | 52 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 0.7 | % Unstable: | 5 |
| Textures Fines: | No | Gravel: No | Larges: Yes |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | X | 15.0 |

Comments

- C1 Air Temp: -1 C.
- C2 A log jam was observed ~300 m u/s from D27, 2 m high x 20 m wide x 7 m long.
- C3 This site was not sampled; suspect spawning DV and BT are present in R4 due to the DV redd observed ~600 m u/s from D27 and the BT redd observed ~400 m u/s from D26. DV and BT were also caught at the index site in R4, located ~1500 m further u/s.
- C4 30 m high x 30 m long eroding bank was observed ~ 420 m u/s from D26

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000-000

| Header Information | | | | | | | | | |
|--|--|---------------------------------|--|-------------------------|--|------------------------------------|--|-------------------------|--|
| Stream Name: DENYS C. | | Stream "Local": DENYS C. (TH31) | | Access: 11 | | | | | |
| Watershed Code: 460-6006-508-584-000-000-000-000-000-000-000 | | Map #: 093L044 | | Reach No.: 5 | | Reach Length (km): 5.4 | | Method: MW | |
| Location: BETWEEN D35 CONFLUENCE AND D36 CONFLUENCE | | U.T.M.: 9.6105 .60256 | | Site No.: 5 | | Length surveyed (m): 100.0 | | Method: HC | |
| Date: 10/15/96 | | Time: 16:00 | | Agency: C58 | | Survey Crew: DB\CP \ \ \ \ \ \ \ \ | | Fish Card: N | |
| | | | | | | Field: Yes | | Historical: No | |
| | | | | | | Photos: not available | | Air Photos: BC 7326:155 | |
| Channel Characteristics | | | | | | | | | |
| Av. Chan. Width (m): 4.1 | | Method Av. Chan. Width (m): T | | Specific Data | | | | | |
| Av. Wet. Width (m): 3.8 | | Method Av. Wet. Width (m): T | | 4.4 3.3 4.4 3.7 3.8 5.1 | | | | | |
| Av. Max. Rif. Depth (cm): 21 | | Av. Max. Riffle Depth (cm): MS | | 4.4 3.3 3.7 3.7 3.8 3.7 | | | | | |
| Av. Max. Pool Depth (cm): 37 | | Av. Max. Pool Depth (cm): 21 | | 20 20 22 | | | | | |
| Gradient (%): 3.0 | | Method Gradient: CL | | 45 35 30 | | | | | |
| % Pool: 10 | | % Riffle: 80 | | % Run: 10 | | % Other: 0 | | Method: GE | |
| % Side Channel: 0 | | Method Side Channel: GE | | | | | | | |
| % Debris Area: 0-10 | | Method Debris Area: GE | | | | | | | |
| Bed Material | | | | | | | | | |
| % Fines (<2mm): 5 | | % Fines (<2mm): 5 | | | | | | | |
| % Gravels: 15 | | Small (2-16mm): 5 | | | | | | | |
| | | Large (16-64mm): 10 | | | | | | | |
| % Larges: 80 | | Small cobble (64-128mm): 40 | | | | | | | |
| | | Large cobble (128-256mm): 30 | | | | | | | |
| | | Boulder cobble (>256mm): 10 | | | | | | | |
| % Bedrock: 0 | | % Bedrock: 0 | | | | | | | |
| D90 (cm): 25 | | Compaction: High | | | | | | | |
| Cover | | | | | | | | | |
| Cover Total %: 70 | | Method Cover Total %: GE | | | | | | | |
| Dp Pool: 5 | | L.O.D.: 0 | | Boulder: 75 | | In Veg.: 0 | | Over Veg.: 0 | |
| Crown Closure %: 5 | | Method Crown Closure: GE | | Aspect: SW | | Method Aspect: AE | | Cutbank: 20 | |
| Discharge | | | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | Specific Data | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): VO | | | | | | | |
| Discharge (m3/s): 0.40 | | Method Discharge (m3/s): | | | | | | | |
| Reach Symbol | | | | | | | | | |
| | | (Fish) | | | | | | | |
| | | NF | | | | | | | |
| | | 4 C 3.0 | | 1180 | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | |
| Banks | | | | | | | | | |
| Height (m): 0.5 | | % Unstable: 0 | | | | | | | |
| Textures Fines: Yes | | Gravel: No | | Larges: Yes | | Bedrock: No | | | |
| Confinement: 4 | | | | | | | | | |
| Valley: Chan. Ratio: 3 | | | | | | | | | |
| Stage: M | | | | | | | | | |
| Flood Signs Ht(m): 0.3 | | Method Flood Signs: MS | | | | | | | |
| Braided: N | | Method Braided: GE | | | | | | | |
| Bars (%): 1 | | Method Bars: GE | | | | | | | |
| pH: 8.0 | | Method pH: PH | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | |
| Water Temp. (°C): 2.5 | | Method Temperature: 10 | | | | | | | |
| Turb. (cm): 200 | | Method Turbidity: GE | | | | | | | |
| Cond. (µmhos): 40 | | Method Conductivity: CM | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C.

Watershed Code:

Stream Survey Report

460-6006-508-584-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction Ht(m) | Type | Location |
|-------------------|------|----------|
| 2 | F | 17.9 |
| 4 | C | 18.1 |
| 4 | F | 18.3 |

Comments

- C1Obstructions were observed d/s from the sample site; The 1.5 m high falls is a restriction to fish; the 4 m high chute may be impassable to fish; the 3.5 m high falls is a definite barrier to fish and marks the end of fish distribution in R5.
- C2Air Temp: - 1 C.
- C3Electrofished 59 m length of stream, 1 pass with no lower net. No fish were caught. Habitat is excellent for fish; suspect upper reach is barren.
- C4Lat/Lon of helicopter landing site: 54 26.77 127 10.75
- C5Tributaries D31 and D32 were not observed during the Denys C. ground survey. Tributary D35 was observed and is classed as S6 habitat

DFO/MoELP Stream Survey Form

2"-Mar-97

Stream: DENYS C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-D1 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------|----------------------|------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D1 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-D1 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.1 Method: MW |
| Location: | ~30 m U/S FROM D1 CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N |
| | | U.T.M.: | 9.6084 .60242 | Field: | Yes |
| Date: | 9/16/96 | Agency: | C58 | Historical: | No |
| Time: | 11:30 | Survey Crew: | SSUH \ \ \ \ \ | Photos: | B1/20 |
| | | | | Air Photos: | BCB 91181.060 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.8 | Method Av. Chan. Width (m): | T | 1.8 | 2.1 | 1.5 | 1.6 | 2.2 | 1.7 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.0 | 1.0 | 0.4 | 0.9 | 1.8 | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 22.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 50 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total %: | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 0 | L.O.D.: | 70 | Boulder: | 20 | In Veg.: | 0 | Over Veg: | 10 |
| Crown Closure %: | 60 | Method Crown Closure: | GE | Aspect: | W | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 2 A 22.0 | 3340 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 30 | % Fines (<2mm): | 30 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 40 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 1 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 8.3 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D1 -000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Comments

- | | |
|----|---|
| C1 | 40% gradient from mouth of D1; no fish access. |
| C2 | 2 m + high banks with soft eroding sections were observed along D1. |

Obstructions

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D4 -000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D4 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-D4 -000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | ~20 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/16/96 | Time: 13:30 | Map #: | 093L034 | Photos: | B1/22 Air Photos: BCB 91181:030 |
| Agency: C58 | Survey Crew: SSJH \ \ \ \ \ \ | U.T.M.: | 9.6091 .60250 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 1.0 | 1.0 | 1.1 | 0.5 | 0.4 | 1.1 |
| Av. Wet. Width (cm): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 25.0 | Method Gradient: | CL | | | | | | |
| % Pool: 0 | % Riffle: 0 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|-----|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 5 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 15 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | Low |

Cover

| | | | |
|-------------------|---------|-----------------------|----------|
| Cover Total % : | | Method Cover Total %: | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: |
| Crown Closure % : | 0 | Method Crown Closure: | GE |
| | | Aspect : | S |
| | | Method Aspect: | AE |
| | | Over Veg: | Cutbank: |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.00 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 25.0 | 8110 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | Dry | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 100 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | | Method Turbidity: | |
| Cond (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D4 -000-000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Dry channel; bed material has sections covered with moss and forest floor material. |
| C2 | Low potential to move debris. |
| C3 | No fish habitat present. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-039-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D5 | Access: | HI |
| Watershed Code: | 460-6006-508-584-039-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.1 Method: MW |
| Location: | ~20 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 90.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6095 .60252 | Photos: | B1/23 Air Photos: BCB 91181:060 |
| Date: 9/16/96 | Time: 15:00 | Agency: C58 | Survey Crew: SSUH \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.7 | Method Av. Chan. Width (m): | T | 0.5 | 0.5 | 0.8 | 1.0 | 0.6 | 0.6 |
| Av. Wet. Width (m): | 0.6 | Method Av. Wet. Width (m): | T | 0.5 | 0.5 | 0.6 | 0.8 | 0.6 | 0.5 |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: 0 | % Riffle: 0 | % Run: 100 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 0 | L.O.D.: 30 | Boulder: 0 | In Veg.: 0 | Over Veg: 70 | Cutbank: 0 | | | | |
| Crown Closure % : | 10 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 1 D 4.0 | 9100 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 90 | % Fines (<2mm): | 90 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.25 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 8.3 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-039-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Possible fish access at higher flows into the lower 100 m of D5.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-039-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D5 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-039-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | -150 m U/S FROM MOUTH. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6095 .60252 | Photos: | B1/24 Air Photos: BCB 91181:060 |
| Date: | 9/16/96 | Time: | 15:00 | Agency: | C58 |
| | | Survey Crew: | SSJH \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 0.9 | 1.1 | 1.3 | 0.9 | 0.9 | 1.2 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.6 | 0.6 | 1.1 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 24.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 20 | Boulder: | 40 | In Veg.: | 0 | Over Veg: | 30 |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|------|
| | (Fish) | |
| | NS | |
| 1 | A | 24.0 |
| | | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 75 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | Medium |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.3 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-039-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | R2 lower boundary is at the base of a gully. The gradient continually increases w/s from ~17-35%. |
| C2 | End of potential fish use at the lower R2 boundary. |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-128-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D6 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-128-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 158.0 Method: HC |
| | | Map #: | 093L034 | Field: | Yes Historical: No |
| | | U.T.M.: | 9.6102 .60254 | Fish Card: | N |
| Date: 9/16/96 | Time: 17:00 | Agency: C58 | Survey Crew: SSJH \ \ \ \ \ \ | Photos: | B1/25 Air Photos: BCB 91181.060 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.1 | Method Av. Chan. Width (m): | T | 1.9 | 2.2 | 1.7 | 3.0 | 2.2 | 1.8 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.0 | 1.0 | 0.9 | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: 50 | % Riffle: 50 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 55 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | Medium |

Cover

| | | | |
|-----------------------|-------------|-----------------------|-------------------|
| Cover Total %: | 50 | Method Cover Total %: | GE |
| Dp Pool: 0 L.O.D.: 10 | Boulder: 25 | In Veg.: 0 | Over Veg: 60 |
| Crown Closure %: | 10 | Method Crown Closure: | GE |
| | | Aspect: SE | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 30 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|----------------------|-------------------------------|
| Wetted Width (m): | Method Wetted Width (m): |
| Mean Depth (m): | Method Mean Depth (m): |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) VO |
| Discharge (m3/s): | 0.01 Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 D 6.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-128-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 D6 disappears into a dry channel through slide alder. During high flow, possible access into the lower 325 m of this creek.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-128-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|-----------------------------|-------------|-----------------------|-------------------|------------------------------------|-----|-----------------------|-----|---------------------------------------|-----|-----------------------------|------------|-----------------|------------|------------------------|------------|---------------------------------|-----|----------------------------|-----|----------------------------|-------------------|--|-----|-----|-----|--|--|---------------------------|-----|-----------------------------|----|-----------------|----|------------|-------------|-------------|--------------|---------------------------|----|---------------------------|----|----------------------|---|--|--|--|--------|---------------|------|------------------|----|--------------------|-----|---------------------|----|----------|---|-----------------|--------------|-----------|------------|--------------|----|-----|-----|------------|----|-----------------|---|--------------------------|----|-------------------|-----|---------------------|----|-------------|-----|-------------------|----|---------------------|----|----------------------|--|--|--|--|--|--|--|--|--|--|--|-----------------|---|-----------------|---|------------|----|-----------------|--|--|--|------------------|--|-----------|----|--------------------------|--|--|--|---------------------------|--|--|--|--------------------------|--|------------|----|------------|----|-----------|----|-------------|--------|
| Stream Name: DENYS C. TRIBUTARY | | | | Stream "Local": D6 | | | | Access: 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-584-128-000-000-000-000-000-000 | | | | Map #: 093L034 | | | | Reach No.: 2 | | Reach Length (km): 1.2 Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: ~240 m U/S FROM MOUTH. | | | | U.T.M.: 9.6102 .60254 | | | | Site No.: 2 | | Length surveyed (m): 175.0 Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 9/16/96 | | Time: 16:15 | | Agency: C58 | | Survey Crew: SSUJH \ \ \ \ \ \ \ \ | | Fish Card: N | | Field: Yes Historical: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | Photos: not available | | Air Photos: BCB 91181.060 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>1.9</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>1.4</td> <td>1.4</td> <td>1.5</td> <td>1.5</td> <td>2.6</td> <td>3.2</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>0.8</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>0.7</td> <td>0.7</td> <td>0.8</td> <td>1.0</td> <td></td> <td></td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>14</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>29</td> <td>Av. Max. Pool Depth (cm):</td> <td>14</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gradient (%):</td> <td>17.0</td> <td>Method Gradient:</td> <td>CL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% Pool: 15</td> <td>% Riffle: 85</td> <td>% Run: 0</td> <td>% Other: 0</td> <td colspan="6">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>% Debris Area:</td> <td>10</td> <td>Method Debris Area:</td> <td>HC</td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 1.4 | 1.4 | 1.5 | 1.5 | 2.6 | 3.2 | Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.7 | 0.7 | 0.8 | 1.0 | | | Av. Max. Rif. Depth (cm): | 14 | Av. Max. Riffle Depth (cm): | MS | | | | | | | Av. Max. Pool Depth (cm): | 29 | Av. Max. Pool Depth (cm): | 14 | | | | | | | Gradient (%): | 17.0 | Method Gradient: | CL | | | | | | | % Pool: 15 | % Riffle: 85 | % Run: 0 | % Other: 0 | Method: GE | | | | | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | % Debris Area: | 10 | Method Debris Area: | HC | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>5</td> <td>% Fines (<2mm):</td> <td>5</td> </tr> <tr> <td>% Gravels:</td> <td>10</td> <td>Small (2-16mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td></td> </tr> <tr> <td>% Larges:</td> <td>75</td> <td>Small cobble (64-128mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td></td> </tr> <tr> <td>% Bedrock:</td> <td>10</td> <td>% Bedrock:</td> <td>10</td> </tr> <tr> <td>D90 (cm):</td> <td>35</td> <td>Compaction:</td> <td>Medium</td> </tr> </tbody> </table> | | | | | | % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | % Gravels: | 10 | Small (2-16mm): | | | | Large (16-64mm): | | % Larges: | 75 | Small cobble (64-128mm): | | | | Large cobble (128-256mm): | | | | Boulder cobble (>256mm): | | % Bedrock: | 10 | % Bedrock: | 10 | D90 (cm): | 35 | Compaction: | Medium |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 1.4 | 1.4 | 1.5 | 1.5 | 2.6 | 3.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.7 | 0.7 | 0.8 | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 14 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 29 | Av. Max. Pool Depth (cm): | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 17.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 15 | % Riffle: 85 | % Run: 0 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 10 | Small (2-16mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 75 | Small cobble (64-128mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 10 | % Bedrock: | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 35 | Compaction: | Medium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>40</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Dp Pool: 5</td> <td>L.O.D.: 25</td> <td>Boulder: 50</td> <td>In Veg.: 0</td> <td>Over Veg: 20</td> <td>Cutbank: 0</td> </tr> <tr> <td>Crown Closure % :</td> <td>25</td> <td>Method Crown Closure:</td> <td>GE</td> <td>Aspect: SE</td> <td>Method Aspect: AE</td> </tr> </tbody> </table> | | | | | | Cover Total % : | 40 | Method Cover Total %: | GE | | | Dp Pool: 5 | L.O.D.: 25 | Boulder: 50 | In Veg.: 0 | Over Veg: 20 | Cutbank: 0 | Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect: SE | Method Aspect: AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>1.5</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>No</td> <td>Gravel: No</td> <td>Larges: Yes</td> <td>Bedrock: No</td> </tr> <tr> <td>Confinement:</td> <td>1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.4</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>0</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>8.1</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>02 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>6.5</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </tbody> </table> | | | | | | Height (m): | 1.5 | % Unstable: | 0 | Textures Fines: | No | Gravel: No | Larges: Yes | Bedrock: No | Confinement: | 1 | | | | Valley: Chan. Ratio: | 1 | | | | Stage: | M | | | | Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 0 | Method Bars: | GE | pH: | 8.1 | Method pH: | PH | 02 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 6.5 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: 5 | L.O.D.: 25 | Boulder: 50 | In Veg.: 0 | Over Veg: 20 | Cutbank: 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect: SE | Method Aspect: AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 1.5 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | No | Gravel: No | Larges: Yes | Bedrock: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 8.1 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 02 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m):</td> <td></td> <td>Method Wetted Width (m):</td> <td></td> </tr> <tr> <td>Mean Depth (m):</td> <td></td> <td>Method Mean Depth (m):</td> <td></td> </tr> <tr> <td>Mean Velocity (m/s):</td> <td></td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> </tr> <tr> <td>Discharge (m3/s):</td> <td>0.01</td> <td>Method Discharge (m3/s):</td> <td></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | Wetted Width (m): | | Method Wetted Width (m): | | Mean Depth (m): | | Method Mean Depth (m): | | Mean Velocity (m/s): | | Method Mean Velocity (m/s) | VO | Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">(Fish)</th> </tr> <tr> <th colspan="2"></th> <th colspan="2">(SP)</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>A 17.0</td> <td>1171</td> <td></td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td colspan="2">(Bed Material)</td> </tr> </tbody> </table> | | | | | | | | (Fish) | | | | (SP) | | 2 | A 17.0 | 1171 | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (SP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | A 17.0 | 1171 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-128-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1
- Gradient gradually increases from ~12% to a continuous 20%+ from the base of R2 to ~175 m u/s.
- C2
- 175 m u/s from the base of R2 is the end of possible fish distribution, based on gradient.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-134-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------|--|----------------------|-----------------|-----|------------------------------------|-----|------------|-----|-----------------|----|-----------------------|----|--------------------|--|-------------|--|---------|--|----------------------|-----|---------------------------|----------------------|----------|-----|----------|-----|-----------|-----|---------------------|-----|-------------------------|---------------------|-----------------------|-----|----------|-----|----------------|-----|---------------------------------|---|-----------------------------|----|--|--|--|--|--|--|---------------------------|------|---------------------------|---|-------------|-----|-------------|---|-----------------|-----|---------------|-----|------------------|----|----------|----|--------------|---|--|--|---------|----|-----------|----------------------|--------|---|----------|---|------------|--|-----------------|---|----------------------|----|--|--|--|---------------------|-----|---------------------|----------------|----------|---------------------|-----------------|----|-----------|---|--------------|----|-----|---|------------|----|-----------|--|--------------------------|--|-------------------|-----|---------------------|-----------------|-------------|-----------------|-------------------|------------|----------------|-----------------|----------------------|--|--|------------------|--|-----------|----|--------------------------|--|--|--|---------------------------|--|--|--|--------------------------|--|------------|---|------------|---|-----------|---|-------------|------|
| Stream Name: | | DENYS C. TRIBUTARY | | Stream "Local": | | D7 | | Access: | | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: | | 460-6006-508-584-134-000-000-000-000-000-000-000 | | | | | | | | Reach No.: | | 1 | | Reach Length (km): | | 0.1 | | Method: | | MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | | -35 m U/S FROM D7 MOUTH. | | Map #: | | 093L034 | | Site No.: | | 1 | | Length surveyed (m): | | 80.0 | | Method: | | HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | U.T.M.: | | 9.6103 .60254 | | Fish Card: | | N | | Field: | | Yes | | Historical: | | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 9/16/96 | | Time: 17:30 | | Agency: C58 | | Survey Crew: SSU11 \ \ \ \ \ \ \ \ | | Photos: | | B2/1 | | Air Photos: | | BCD 91181-060 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="2">Specific Data</th> <th colspan="2"></th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>0.8</td> <td>Method</td> <td>Av. Chan. Width (m):</td> <td>T</td> <td>0.7</td> <td>0.7</td> <td>1.0</td> <td>0.6</td> <td>0.8</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>0.8</td> <td>Method</td> <td>Av. Wet. Width (m):</td> <td>T</td> <td>0.7</td> <td>0.7</td> <td>1.0</td> <td>0.6</td> <td>0.8</td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>5</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td colspan="6"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>15</td> <td>Av. Max. Pool Depth (cm):</td> <td>5</td> <td colspan="6"></td> </tr> <tr> <td>Gradient (%):</td> <td>3.0</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="6"></td> </tr> <tr> <td>% Pool:</td> <td>25</td> <td>% Riffle:</td> <td>75</td> <td>% Run:</td> <td>0</td> <td>% Other:</td> <td>0</td> <td colspan="2">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>% Debris Area:</td> <td>20</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | Av. Chan. Width (m): | 0.8 | Method | Av. Chan. Width (m): | T | 0.7 | 0.7 | 1.0 | 0.6 | 0.8 | Av. Wet. Width (m): | 0.8 | Method | Av. Wet. Width (m): | T | 0.7 | 0.7 | 1.0 | 0.6 | 0.8 | Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | | Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 5 | | | | | | | Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | | % Pool: | 25 | % Riffle: | 75 | % Run: | 0 | % Other: | 0 | Method: GE | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | % Debris Area: | 20 | Method Debris Area: | GE | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>25</td> <td>% Fines (<2mm):</td> <td>25</td> </tr> <tr> <td>% Gravels:</td> <td>65</td> <td>Small (2-16mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td></td> </tr> <tr> <td>% Larges:</td> <td>10</td> <td>Small cobble (64-128mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td></td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>6</td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | | | | | | | | | % Fines (<2mm): | 25 | % Fines (<2mm): | 25 | % Gravels: | 65 | Small (2-16mm): | | | | Large (16-64mm): | | % Larges: | 10 | Small cobble (64-128mm): | | | | Large cobble (128-256mm): | | | | Boulder cobble (>256mm): | | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 6 | Compaction: | High |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 0.8 | Method | Av. Chan. Width (m): | T | 0.7 | 0.7 | 1.0 | 0.6 | 0.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 0.8 | Method | Av. Wet. Width (m): | T | 0.7 | 0.7 | 1.0 | 0.6 | 0.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: | 25 | % Riffle: | 75 | % Run: | 0 | % Other: | 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 25 | % Fines (<2mm): | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 65 | Small (2-16mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 10 | Small cobble (64-128mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 6 | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>70</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>Dp Pool :</td> <td>15</td> <td>L.O.D.:</td> <td>15</td> <td>Boulder:</td> <td>0</td> <td>In Veg.:</td> <td>0</td> <td>Over Veg:</td> <td>35</td> <td>Cutbank:</td> <td>35</td> </tr> <tr> <td>Crown Closure % :</td> <td>5</td> <td>Method Crown Closure:</td> <td>GE</td> <td>Aspect :</td> <td>NW</td> <td>Method Aspect:</td> <td>AE</td> <td colspan="4"></td> </tr> </tbody> </table> | | | | | | | | | | Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | | Dp Pool : | 15 | L.O.D.: | 15 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 35 | Cutbank: | 35 | Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | | | | | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>0.4</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel:</td> <td>No</td> <td>Larges:</td> <td>No</td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Confinement:</td> <td>5</td> <td colspan="5"></td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>4</td> <td colspan="5"></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td colspan="5"></td> </tr> <tr> <td>Flood Signs III(m):</td> <td>0.5</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>0</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>8.2</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>8.0</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | Height (m): | 0.4 | % Unstable: | 0 | Textures Fines: | Yes | Gravel: | No | Larges: | No | Bedrock: | No | Confinement: | 5 | | | | | | Valley: Chan. Ratio: | 4 | | | | | | Stage: | M | | | | | | Flood Signs III(m): | 0.5 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 0 | Method Bars: | GE | pH: | 8.2 | Method pH: | PH | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 8.0 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool : | 15 | L.O.D.: | 15 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 35 | Cutbank: | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 0.4 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: | No | Larges: | No | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs III(m): | 0.5 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 8.2 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 8.0 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="2">Specific Data</th> <th colspan="2"></th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m) :</td> <td></td> <td>Method Wetted Width (m) :</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>Mean Depth (m) :</td> <td></td> <td>Method Mean Depth (m) :</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td></td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> <td colspan="6"></td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.02</td> <td>Method Discharge (m3/s) :</td> <td></td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">(Fish)</th> <th colspan="2"></th> <th colspan="2"></th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td colspan="2">NS</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2">1 D 3.0</td> <td colspan="2">2710</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td colspan="2">(Bed Material)</td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | | | | | (Fish) | | | | | | | | | | NS | | | | | | | | | | 1 D 3.0 | | 2710 | | | | | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 D 3.0 | | 2710 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-134-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | F | 0.0 |

Comments

C1 -0.9 m drop into a plunge pool ~3.9 m u/s from D7 mouth was observed. Drop is above the high water mark; probable barrier to fish.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-134-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------|----------------------|--------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D7 | Access: | It |
| Watershed Code: | 460-6006-508-584-134-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | ~100 m U/S FROM D7 MOUTH. | Site No.: | 2 | Length surveyed (m): | 130.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6103 .60254 | Photos: | B2/2 Air Photos: BCB 91181:060 |
| Date: | 9/16/96 | Time: | 17:30 | Agency: | C58 |
| | | Survey Crew: | SSUJH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 0.7 | 1.1 | 1.0 | 0.9 | 0.8 | 0.7 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.7 | 1.1 | 1.0 | 0.9 | 0.8 | 0.7 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 17.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | HC | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 40 | Boulder: | 15 | In Veg.: | 0 | Over Veg: | 30 |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 17.0 | 2440 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 40 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 40 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 8.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-134-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 Steady gradient in the lower 50 m of R2, ~16 -19%. Suspect no fish use based on high gradient and the 0.9 m high barrier found at the base of R1.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-134-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------|--------------------|---|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D7 | Access: | II |
| Watershed Code: | 460-6006-508-584-134-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | HEADWATER LAKE AT THE TOP OF D7; LANDED IN MEADOW ON WEST SIDE. | Map #: | 093L034 | Site No.: | 3 Length surveyed (m): 100.0 Method: GE |
| Date: 9/19/96 | Time: 14:00 | U.T.M.: | 9.6105 .60243 | Fish Card: | N Field: Yes Historical: No |
| Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | Photos: | DB1/25 | Air Photos: | BCB 91181:060 |

Channel Characteristics

| | | | |
|---------------------------|-----------------------------|----------------------|------------------|
| Av. Chan. Width (m): | Method Av. Chan. Width (m): | <i>Specific Data</i> | |
| Av. Wet. Width (m): | Method Av. Wet. Width (m): | | |
| Av. Max. Rif. Depth (cm): | Av. Max. Riffle Depth (cm): | | |
| Av. Max. Pool Depth (cm): | Av. Max. Pool Depth (cm): | | |
| Gradient (%): | Method Gradient: | | |
| % Pool: | % Riffle: | % Run: | % Other: Method: |
| % Side Channel: | Method Side Channel: | | |
| % Debris Area: | Method Debris Area: | | |

Cover

| | | | | | |
|-------------------|-----------------------|----------|----------|----------------|----------|
| Cover Total % : | Method Cover Total %: | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg: | Cutbank: |
| Crown Closure % : | Method Crown Closure: | Aspect : | NE | Method Aspect: | AE |

Discharge

| | | |
|-----------------------|----------------------------|----------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | |
| Discharge (m3/s) : | Method Discharge (m3/s) : | |

Reach Symbol

| |
|--|
| (Fish) |
| NF |
| (Width, Valley: Channel, Slope) (Bed Material) |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: High |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | M |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | 8.0 Method pH: PH |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | 9.0 Method Temperature: TC |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-134-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1Lake dimensions: ~75 m wide x 300 m long. No significant inflows were observed. Unable to get to outlet channel.
- C2Set 5 minnow traps overnight on the North end of the lake; no rises were observed and no fish were caught. Assume this lake is barren.
- C3Conifer timber growing right up to the edge of the lake - no landing sites on lake edge. Sedges and water lilies grow along the shoreline; edges are shallow but look deeper in mid sections.
- C4Lat/Lon of helicopter landing site: 52 21.26 127 18 13

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D9 -000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | |
|---------------------------|------|--|----|--|-----|--------------------------|-----|--------------|-----|--------------------------|----|---------------------------|------|
| Stream Name: | | DENYS C. TRIBUTARY | | Stream "Local": | | D9 | | Access: | | H | | | |
| Watershed Code: | | 460-6006-508-584-D9 -000-000-000-000-000-000 | | Map #: | | 093L034 | | Reach No.: | | 1 | | | |
| Location: | | ~50 m U/S FROM MOUTH. | | U.T.M.: | | 9.6110 .60258 | | Site No.: | | 1 | | | |
| Date: | | 9/18/96 | | Time: | | 10:45 | | Fish Card: | | N | | | |
| Agency: | | C58 | | Survey Crew: | | JHV \ \ \ \ \ \ \ \ | | Field: | | Yes | | | |
| | | | | | | | | Photos: | | B2/22 | | | |
| | | | | | | | | Air Photos: | | BCB 91181:060 | | | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | | | |
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.5 | 0.7 | 0.5 | 0.4 | 0.4 | 0.4 | % Fines (<2mm): | 60 | % Fines (<2mm): | 60 |
| Av. Wet. Width (m): | 0.2 | Method Av. Wet. Width (m): | T | 0.2 | 0.3 | 0.1 | | | | % Gravels: | 40 | Small (2-16mm): | |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | | | Large (16-64mm): | | Small cobble (64-128mm): | |
| Av. Max. Pool Depth (cm): | 7 | Av. Max. Pool Depth (cm): | 2 | | | | | | | % Larges: | 0 | Large cobble (128-256mm): | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | | Boulder cobble (>256mm): | | | |
| % Pool: | 60 | % Riffle: | 40 | % Run: | 0 | % Other: | 0 | Method: | GE | % Bedrock: | 0 | % Bedrock: | 0 |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | D90 (cm): | 2 | Compaction: | High |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | | | | | |
| Cover | | | | Banks | | | | | | | | | |
| Cover Total %: | 80 | Method Cover Total %: | GE | Height (m): | 0.3 | % Unstable: | 0 | | | | | | |
| Dp Pool: | 0 | L.O.D.: | 0 | Textures Fines: | Yes | Gravel: | No | | | | | | |
| Boulder: | 0 | In Veg.: | 0 | Confinement: | 2 | Larges: | No | | | | | | |
| Over Veg: | 85 | Cutbank: | 15 | Valley: Chan. Ratio: | 4 | Bedrock: | No | | | | | | |
| Aspect: | S | Method Aspect: | AE | Stage: | L | | | | | | | | |
| Crown Closure %: | 5 | Method Crown Closure: | GE | Flood Signs Ill(m): | 0.2 | Method Flood Signs: | MS | | | | | | |
| | | | | Braided: | N | Method Braided: | GE | | | | | | |
| | | | | Bars (%): | 0 | Method Bars: | GE | | | | | | |
| | | | | pH: | 8.2 | Method pH: | PH | | | | | | |
| | | | | O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | |
| | | | | Water Temp. (°C): | 6.0 | Method Temperature: | TC | | | | | | |
| | | | | Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | |
| | | | | Cond. (µmhos): | | Method Conductivity: | | | | | | | |
| Discharge | | | | Reach Symbol | | | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | <div style="text-align: center;"> <p>(Fish)</p> <p>NS</p> <hr/> <p>I D 4.0 6400</p> <p>(Width, Valley: Channel, Slope) (Bed Material)</p> </div> | | | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D9 -000-000-000-000-000-000

Stream/Valley Cross-Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Stream channel disappears completely near the mainstem Denys C.; no channel is present at the confluence and all flow is subsurface. Suspect no juvenile fish access even at high flows. |
| C2 | FSZ classification for the lower 70 m of D9 (to the base of the gully). |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-179-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------------------|----------------------|------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D10 | Access: | H |
| Watershed Code: | 460-6006-508-584-179-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.9 Method: MW |
| Location: | -400 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 860.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N |
| | | U.T.M.: | 9.6112 .60259 | Field: | Yes |
| Date: 9/18/96 | Time: 1:45 | Agency: C58 | Survey Crew: JHV \ \ \ \ \ | Historical: | No |
| | | | | Photos: | B2/23, 24; B3/1 |
| | | | | Air Photos: | BCB 91181:062 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 3.6 | Method Av. Chan. Width (m): | T | 4.8 | 4.5 | 3.5 | 2.4 | 2.9 | 3.3 |
| Av. Wet. Width (m): | 3.2 | Method Av. Wet. Width (m): | T | 3.6 | 2.6 | 3.3 | | | |
| Av. Max. Rif. Depth (cm): | 18 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 32 | Av. Max. Pool Depth (cm): | 18 | | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: 25 | % Riffle: 65 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | |
| Dp Pool: 20 | L.O.D.: 20 | Boulder: 30 | In Veg.: 0 | Over Veg: 20 | Cutbank: 10 | | |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect: NW | Method Aspect: AE | | |

Discharge

| | | | |
|----------------------|----------------------------|--------------------------|--|
| Wetted Width (m): | Method Wetted Width (m): | | |
| Mean Depth (m): | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s): | 0.06 | Method Discharge (m3/s): | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 4 C 4.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 40 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 50 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.1 |

Comments

- C1 ~80 m u/s from the D10 mouth, a 0.7 m high debris drop was observed (Photo B2/24); barrier to fry. Suspect fish use throughout R1 based on the presence of DV u/s at Site 4.
- C2 ~15 m high eroding bank on river right was observed 481 m u/s from the mouth (Photo B3/1).

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|--------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D10 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-179-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.4 Method: MW |
| Location: | -305 m U/S FROM D10.1 CONFLUENCE WITH D10. | Site No.: | 2 | Length surveyed (m): | 640.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6112 .60259 | Photos: | B3/6 Air Photos: BCB 91181:062 |
| Date: | 9/18/96 | Time: | 17:20 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 2.6 | Method Av. Chan. Width (m): | T | 2.6 | 3.0 | 2.5 | 2.2 | 2.6 |
| Av. Wet. Width (m): | 2.1 | Method Av. Wet. Width (m): | T | 2.0 | 2.0 | 2.3 | | |
| Av. Max. Rif. Depth (cm): | 14 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 14 | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | |
| % Pool: | 15 | % Riffle: | 85 | % Run: | 0 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 70 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool : | 5 | L.O.D.: | 5 |
| | | Boulder: | 30 |
| | | In Veg.: | 0 |
| | | Over Veg.: | 50 |
| | | Cutbank: | 10 |
| Crown Closure % : | 5 | Method Crown Closure: | GE |
| | | Aspect : | W |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: | No |
| | | Larges: | Yes |
| | | Bedrock: | No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 2 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|---------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : VO |
| Discharge (m3/s) : | 0.06 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 3 B 6.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Habitat is suitable for fish production and there are no fish barriers in the lower 650 m of R2. Assume fish use in the lower 650 m of R2 based on the presence of DV u/s at Site 4. The upper 600 m of R2 and R3 was surveyed by air; suspect fish use in the upper 600 m of R2; suspect no fish use in R3 based on high gradient. |
| C2 | 20 m high x 30 m long eroding bank was observed on D10, 400 m u/s from the D10.1 confluence. |
| C3 | D10.2, D10.3, and D10.4, located 300 m, 500 m and 600 m u/s from the base of R2 respectively, were surveyed; each tributary had no defined channel with subsurface flow. No fish habitat. |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-143-000-000-000-000-000

Header Information

| | | | | | | | | | |
|-----------------|--|-----------------|---------------|----------------------|---------|--------------|---------------------|-------------|----|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D10.1 | Access: | H | | | | |
| Watershed Code: | 460-6006-508-584-179-143-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.5 | Method: | MW | | |
| Location: | ~250 m U/S FROM CONFLUENCE WITH D10. | Site No.: | 3 | Length surveyed (m): | 250.0 | Method: | HC | | |
| | | Map #: | 093L034 | Fish Card: | N | Field: | Yes | Historical: | No |
| | | U.T.M.: | 9.6117 .60252 | Photos: | B3/3, 4 | Air Photos: | BCB 91181:062 | | |
| Date: | 9/18/96 | Time: | 13:30 | Agency: | C58 | Survey Crew: | JHR \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 3.0 | Method Av. Chan. Width (m): | T | 2.9 | 3.0 | 4.3 | 2.8 | 2.3 | 2.9 |
| Av. Wet. Width (m): | 1.9 | Method Av. Wet. Width (m): | T | 2.3 | 1.9 | 1.6 | | | |
| Av. Max. Rif. Depth (cm): | 17 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 33 | Av. Max. Pool Depth (cm): | 17 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 80 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|----------|----|
| Cover Total %: | 35 | Method Cover Total %: | GE | | | | | | | | |
| Dp Pool: | 5 | L.O.D.: | 5 | Boulder: | 35 | In Veg.: | 0 | Over Veg.: | 30 | Cutbank: | 25 |
| Crown Closure %: | 10 | Method Crown Closure: | GE | Aspect: | NW | Method Aspect: | AE | | | | |

Discharge

| | | | | | | | | | |
|----------------------|----------------------------|--------------------------|--|--|--|--|--|--|--|
| Wetted Width (m): | Method Wetted Width (m): | | | | | | | | |
| Mean Depth (m): | Method Mean Depth (m): | | | | | | | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s): | 0.04 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 3 B 6.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 75 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 19 | Compaction: | Medium |

Banks

| | | | | | | | |
|----------------------|-----|--------------------------|-----|---------|----|----------|----|
| Height (m): | 0.8 | % Unstable: | 10 | | | | |
| Textures Fines: | No | Gravel: | Yes | Larges: | No | Bedrock: | No |
| Confinement: | 2 | | | | | | |
| Valley: Chan. Ratio: | 2 | | | | | | |
| Stage: | M | | | | | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS | | | | |
| Braided: | N | Method Braided: | GE | | | | |
| Bars (%): | 10 | Method Bars: | GE | | | | |
| pH: | 8.2 | Method pH: | PH | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | |

DFO/MoELP Stream Survey Form

2~Mur-9~

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-143-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.4 |

Comments

- C1 Discharge and channel characteristics of the stream are suitable to support fish. Assume DV present in R1 based on DV caught ~450 m further u/s.
- C2 1.2 m debris/rock jam was observed ~390 m u/s from mouth (Photo B3/3); barrier to u/s migration. May be passable during very high flows. Other smaller debris jams were observed in the vicinity; caused by ~70 m long x 20 m high bank failure located immediately u/s (Photo B3/4).
- C3 D10.1.1 confluence is located ~80 u/s on D10.1 from the mouth. D10.1.1 has no defined channel and no fish habitat is present.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-143-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D10.1 | Access: | II |
| Watershed Code: | 460-6006-508-584-179-143-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.5 Method: MW |
| Location: | ~700 m U/S FROM CONFLUENCE WITH D10. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/18/96 | Time: 9:15 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | Photos: | DB1/6, 7 Air Photos: BCB 91181-060 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6117 .60252 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.7 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 2.7 | Method Av. Wet. Width (m): | T | 2.7 | 2.2 | 2.8 | 3.0 | 2.2 | 3.3 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | 2.7 | 2.2 | 2.8 | 3.0 | 2.2 | 3.3 |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 12 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: 5 | % Riffle: 95 | % Run: 0 | % Other: 0 | Method: | GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|-------------|----------------|----------|----|--|--|--|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 0 | L.O.D.: 10 | Boulder: 20 | In Veg.: 10 | Over Veg: 30 | Cutbank: | 30 | | | |
| Crown Closure % : | | Method Crown Closure: | Aspect: NW | Method Aspect: | AE | | | | |

Discharge

| | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.10 | Method Discharge (m3/s) : | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 3 B 7.0 | 0370 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs III(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-143-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 7 | 107 - 126 | J | R | | | MT |

Obstructions

Comments

- C1 5 minnow traps were set overnight; DV were caught.
- C2 Landed in a meadow above the creek. Lat/Lon of helicopter landing site: 54 21.32 127 16.56
- C3 D10 was surveyed by air above Site 4: assume fish use up to 1350 m from mouth, suspected fish use between 1350 m and 2450 m from mouth, and no fish use u/s of 2450 m due to steep gradient.
- C4 D10.1.2 was ground surveyed; No fish habitat was present and channel was not defined.
- C5 D10.1.3, D10.1.4, D10.1.5 and D10.1.6 were all surveyed by air; there was no possible potential fish use in each tributary

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-D10-.5 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|--------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D10.5 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-179-D10-.5 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | LOCATED ~100 m U/S FROM D10.5 MOUTH. | Site No.: | 5 | Length surveyed (m): | 100.0 Method: GE |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6124 .60252 | Photos: | B3/9 Air Photos: BCB 91181:062 |
| Date: | 9/18/96 | Time: | 16:15 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.7 | 0.6 | 0.7 | 0.5 | 0.3 | 0.3 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.7 | 0.6 | 0.7 | 0.5 | 0.3 | 0.3 |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 8 | Av. Max. Pool Depth (cm): | 2 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 80 | % Riffle: | 20 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 25 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|------------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 25 | Boulder: | 0 | In Veg.: | 35 | Over Veg.: | 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | W | Method Aspect: | AE | Cutbank: | 40 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 B 7.0 | 9100 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 90 | % Fines (<2mm): | 90 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | 1 | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | 14 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-179-D10-5 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1

Discontinuous, small channel with very low discharge. Tributary is too small to support fish and there is no access for fry during flooding (8% gradient, pool-stepping). Creek is classed as S6 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-210-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D11 | Access: | H |
| Watershed Code: | 460-6006-508-584-210-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.1 Method: MW |
| Location: | SITE LOCATED ~950 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 1100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/19/96 | Time: 10:30 | Agency: C58 | Survey Crew: JH\ \ \ \ \ \ \ \ | Photos: | B3/10 Air Photos: BCB 91181:062 |
| | | Map #: | 093L034 | | |
| | | U.T.M. : | 9.6115 .60261 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.2 | 1.3 | 1.5 | 1.5 | 1.6 | 1.2 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 0.9 | 1.2 | 0.9 | 0.7 | 1.1 | 1.1 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 85 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|
| Cover Total % : | 25 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 15 | Boulder: | 35 | In Veg.: | 0 | Over Veg.: | 35 |
| Crown Closure % : | 70 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | (DV) | |
| I B 8.0 | 1540 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 55 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 40 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 21 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: | No |
| Confinement: | 2 | Larges: Yes | Bedrock: No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-210-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | The top of R1 is the end of fish distribution based on habitat suitability (pools are few and most are < 15 cm deep). D11 is classed as S4 habitat to the top of R1 and S6 habitat above R1. |
| C2 | Inaccessible to fry due to steep gradient. Residents are assumed to be presence of DV in similar habitat as adjacent stream (D10). |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-210-D11-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D11.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-210-D11-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM MOUTH. | Site No.: | 2 | Length surveyed (m): | 50.0 Method: GE |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6123 .60256 | Photos: | B3/11 Air Photos: BCB 91181 062 |
| Date: | 9/19/96 | Time: | 11:00 | Agency: | C58 |
| | | Survey Crew: | JHV \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.3 | Method Av. Chan. Width (m): | T | 0.6 | 0.3 | 0.3 | 0.0 | 0.4 | 0.2 |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | T | 0.5 | 0.2 | 0.3 | | | |
| Av. Max. Rif. Depth (cm): | 1 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 8 | Av. Max. Pool Depth (cm): | 1 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 25 | % Riffle: | 75 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 70 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 20 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 0 | Method Cover Total %: | GE |
| Dp Pool : | 0 | L.O.D.: | 0 |
| | | Boulder: | 0 |
| | | In Veg.: | 0 |
| | | Over Veg: | 0 |
| | | Cutbank: | 0 |
| Crown Closure % : | 50 | Method Crown Closure: | GE |
| | | Aspect : | SW |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.6 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|---------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : VO |
| Discharge (m3/s) : | 0.01 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 0 B 7.0 | 1720 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-210-D11-.1 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 Channel is discontinuous and discharge is a trickle flow. No fish habitat present due to the small size of the tributary.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-208-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|--------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D12 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-208-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | SITE LOCATED ~200 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 900.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9 6116 60262 | Photos: | DB4/23, 24 Air Photos: BCB 91181:174 |
| Date: | 10/15/96 | Time: | 13:00 | Agency: | C58 |
| | | Survey Crew: | DB\CP \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 3.8 | Method Av. Chan. Width (m): | T | 4.2 | 5.7 | 4.0 | 3.3 | 2.9 | 2.6 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.4 | 0.9 | 1.9 | 1.7 | 1.8 | 1.0 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | 15 | 10 | 10 | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 12 | 25 | 30 | 30 | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 5 | % Riffle: | 95 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|-----------|----|----------------|----|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 30 | Boulder: | 60 | In Veg.: | 0 |
| Crown Closure % : | 35 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE |
| | | | | Over Veg: | 10 | Cutbank: | 0 |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.07 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV RB* | |
| 4 A 9.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 35 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 20 |
| % Larges: | 60 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.6 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 3 | Larges: | Yes |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | FC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 80 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-208-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 3 | 71 - 123 | J | R | | | EL |
| DV | 3 | 35 - 38 | F | R | | | EL |
| RB | 6 | 27 - 29 | F | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | X | 0.9 |

Comments

- C1 Electrofished 65 m length of stream, 1 pass with no lower net. The char fry caught were recorded as DV fry. Suspect RB fry caught are residents due to their small size. RB spawning must occur u/s from the sample site for RB fry to be present here.
- C2 Dynamic creek based on extensive bar development and large amounts of debris present.
- C3 ~600 m u/s from the mouth, numerous small debris jams are present (Photo B3/13). ~890 m u/s from mouth, a 2 m high debris jam in 2 steps was observed; currently a migration barrier but not a permanent barrier (Photo B3/14).
- C4 Lat/Lon of helicopter landing site: 54 22.45 127 16.92
- C5 Air Temp 1 C

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-208-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D12 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-208-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 2.2 Method: MW |
| Location: | SITE LOCATED ~1200 m U/S FROM MOUTH. | Site No.: | 2 | Length surveyed (m): | 150.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6116 .60262 | Photos: | B3/15 Air Photos: BCB 91181:174 |
| Date: | 9/19/96 | Time: | 13:30 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 2.1 | Method Av. Chan. Width (m): | T | 1.8 | 1.8 | 2.2 | 2.6 | 1.8 | 2.4 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.3 | 1.7 | 1.4 | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 16 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 85 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 10 | Boulder: | 50 | In Veg.: | 0 |
| Crown Closure % : | 65 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE |
| | | Over Veg: | 20 | Cutbank: | 20 | | |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 B 7.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.7 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: | No |
| Confinement: | 2 | Larges: | Yes |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | tc |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-208-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | No complete barriers to fish between Site 2 and D12 mouth. D12 is classed as having fish up to 400 m u/s in R2; above this, the creek gradient is a continuous 20% and cannot support fish. |
| C2 | D12.1 was surveyed and has no defined channel (enters D12 as a seepage). No fish habitat present. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C.

Watershed Code:

Stream Survey Report

460-6006-508-584-214-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------|-----------------------------|------------|--------------|----------------|------------------------------|-----------------------|---------------------------|-------------|----------------------|-------------|-----------------------------|------------------|-----|-----------------------|------------|----------------------------|---|----------------|---------------------------|---|-----------------------------|----|------|---------------------------|-------------|---------------------------|-------------|-----|---|-----|------------------|------------|--------------|------------|--------------|-------------|----------------------|---------|-----------------------|---------------------------------|----------------|---|--|---------------------|------------------------|-----|---------------------|----|---|---|-----------------|----|-----------|-----------------|--------------|-----------------|-----|------------|------------|-----------------|-----------|--|--------------------------|------------------|-------------------|-----------|---------------------|--------------------------|-------------|-----|-------------------|---------------------------|----------------|--|----------------------|--------------------------|---|------------|---|------------|---|-----------|----|-------------|--------|
| Stream Name: LOLJUH C. | | Stream "Local": LOLJUH C. | | Access: FT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-584-214-000-000-000-000-000-000 | | Map #: 093L034 | | Reach No.: 1 | | Reach Length (km): 6.2 | | Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: SITE LOCATED ~3200 m U/S FROM LOLJUH C. CONFLUENCE. | | U.T.M.: 9.6118 .60262 | | Site No.: 1 | | Length surveyed (m): 6200.0 | | Method: HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 9/16/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: RD/CP \ \ \ \ \ | | Fish Card: Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | Photos: A1/18, 19 | | Air Photos: BCB 91181-173 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="5">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>8.7</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>8.3</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>6.4</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>8.3</td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>20</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td>10.4</td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>65</td> <td>Av. Max. Pool Depth (cm):</td> <td>20</td> <td>9.6</td> </tr> <tr> <td>Gradient (%):</td> <td>1.0</td> <td>Method Gradient:</td> <td>CL</td> <td>7.5</td> </tr> <tr> <td>% Pool: 25</td> <td>% Riffle: 50</td> <td>% Run: 25</td> <td>% Other: 0</td> <td>8.1</td> </tr> <tr> <td>% Side Channel: 10-40</td> <td>Method Side Channel: GE</td> <td colspan="3">Method: GE</td> </tr> <tr> <td>% Debris Area: 0-10</td> <td>Method Debris Area: GE</td> <td colspan="3"></td> </tr> </tbody> </table> | | | | | Specific Data | | | | | Av. Chan. Width (m): | 8.7 | Method Av. Chan. Width (m): | T | 8.3 | Av. Wet. Width (m): | 6.4 | Method Av. Wet. Width (m): | T | 8.3 | Av. Max. Rif. Depth (cm): | 20 | Av. Max. Riffle Depth (cm): | MS | 10.4 | Av. Max. Pool Depth (cm): | 65 | Av. Max. Pool Depth (cm): | 20 | 9.6 | Gradient (%): | 1.0 | Method Gradient: | CL | 7.5 | % Pool: 25 | % Riffle: 50 | % Run: 25 | % Other: 0 | 8.1 | % Side Channel: 10-40 | Method Side Channel: GE | Method: GE | | | % Debris Area: 0-10 | Method Debris Area: GE | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>5</td> <td>% Fines (<2mm):</td> <td>5</td> </tr> <tr> <td>% Gravels:</td> <td>30</td> <td>Small (2-16mm):</td> <td>15</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>15</td> </tr> <tr> <td>% Larges:</td> <td>65</td> <td>Small cobble (64-128mm):</td> <td>40</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>23</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>2</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>18</td> <td>Compaction:</td> <td>Medium</td> </tr> </tbody> </table> | | | | | % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | % Gravels: | 30 | Small (2-16mm): | 15 | | | Large (16-64mm): | 15 | % Larges: | 65 | Small cobble (64-128mm): | 40 | | | Large cobble (128-256mm): | 23 | | | Boulder cobble (>256mm): | 2 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 18 | Compaction: | Medium |
| Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 8.7 | Method Av. Chan. Width (m): | T | 8.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 6.4 | Method Av. Wet. Width (m): | T | 8.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 20 | Av. Max. Riffle Depth (cm): | MS | 10.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 65 | Av. Max. Pool Depth (cm): | 20 | 9.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 25 | % Riffle: 50 | % Run: 25 | % Other: 0 | 8.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: 10-40 | Method Side Channel: GE | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: 0-10 | Method Debris Area: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 30 | Small (2-16mm): | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 65 | Small cobble (64-128mm): | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 18 | Compaction: | Medium | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total %:</td> <td>80</td> <td>Method Cover Total %:</td> <td>GE</td> </tr> <tr> <td>Dp Pool: 10</td> <td>L.O.D.: 10</td> <td>Boulder: 75</td> <td>In Veg.: 0</td> </tr> <tr> <td>Crown Closure %:</td> <td></td> <td>Method Crown Closure:</td> <td>Aspect: SW</td> </tr> <tr> <td></td> <td></td> <td>Method Aspect:</td> <td>AE</td> </tr> </tbody> </table> | | | | | Cover Total %: | 80 | Method Cover Total %: | GE | Dp Pool: 10 | L.O.D.: 10 | Boulder: 75 | In Veg.: 0 | Crown Closure %: | | Method Crown Closure: | Aspect: SW | | | Method Aspect: | AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>1.0</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel: Yes</td> <td>Larges: No</td> </tr> <tr> <td>Confinement:</td> <td>4</td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.7</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>25</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>8.3</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>6.0</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </tbody> </table> | | | | | Height (m): | 1.0 | % Unstable: | 0 | Textures Fines: | Yes | Gravel: Yes | Larges: No | Confinement: | 4 | Bedrock: | No | Valley: Chan. Ratio: | 3 | | | Stage: | M | | | Flood Signs Ht(m): | 0.7 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 25 | Method Bars: | GE | pH: | 8.3 | Method pH: | PH | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 6.0 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | |
| Cover Total %: | 80 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: 10 | L.O.D.: 10 | Boulder: 75 | In Veg.: 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure %: | | Method Crown Closure: | Aspect: SW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Method Aspect: | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 1.0 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: Yes | Larges: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 4 | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.7 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 25 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 8.3 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="5">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m):</td> <td></td> <td>Method Wetted Width (m):</td> <td></td> <td></td> </tr> <tr> <td>Mean Depth (m):</td> <td></td> <td>Method Mean Depth (m):</td> <td></td> <td></td> </tr> <tr> <td>Mean Velocity (m/s):</td> <td></td> <td>Method Mean Velocity (m/s):</td> <td>VO</td> <td></td> </tr> <tr> <td>Discharge (m3/s):</td> <td>1.00</td> <td>Method Discharge (m3/s):</td> <td></td> <td></td> </tr> </tbody> </table> | | | | | Specific Data | | | | | Wetted Width (m): | | Method Wetted Width (m): | | | Mean Depth (m): | | Method Mean Depth (m): | | | Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | Discharge (m3/s): | 1.00 | Method Discharge (m3/s): | | | <table border="1"> <tbody> <tr> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2">BT* DV (RB)</td> </tr> <tr> <td>9 C 1.0</td> <td>1360</td> </tr> <tr> <td>(Width, Valley: Channel, Slope)</td> <td>(Bed Material)</td> </tr> </tbody> </table> | | | | | (Fish) | | BT* DV (RB) | | 9 C 1.0 | 1360 | (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s): | 1.00 | Method Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BT* DV (RB) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 C 1.0 | 1360 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C.

Watershed Code:

Stream Survey Report

460-6006-508-584-214-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 112 - 150 | A | S | | | MT |
| BT | 1 | 92 | J | R | | | MT |

Obstructions

Comments

- C1 Set 5 minnow traps overnight at site card location. DV caught were mature males suspected to be spawning or to be already spawned-out. A juvenile BT was also caught at the trap site.
- C2 Suspected BT redds were observed: 1 BT redd ~500 m u/s from the Loljuh confluence; 1 BT redd ~500 m u/s from L5 confluence. Suspect this is a significant area for BT spawning in the Thautil R. watershed.
- C3 Numerous char fry and juvenile salmonids were observed throughout R1.
- C4 Dynamic creek with a high potential to transport debris. Debris jams were observed on this creek.
- C5 Bed material consists primarily of cobble; sections suitable for CO/RB/BT spawning are present.
- C6 ~2500 m u/s from the Loljuh confluence, an unstable bank was observed on river left. ~4200 m u/s from the Loljuh confluence, a slump on R. right was noted (Photo A3/8). ~5100 m u/s from the Loljuh confluence, another unstable bank was observed.
- C7 L1 and L4 were not observed during Loljuh C. survey

DFO/MoELP Stream Survey Form

2"-Mar-97

Stream: LOLJUH C.

Watershed Code:

Stream Survey Report

460-6006-508-584-214-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------|----------------------|---------------|
| Stream Name: | LOLJUH C. | Stream "Local": | LOLJUH C. | Access: | FI |
| Watershed Code: | 460-6006-508-584-214-000-000-000-000-000-000-000 | | | Reach No.: | 2 |
| Location: | SITE LOCATED ~1000 m U/S FROM BASE OF R2, ~7200 m U/S FROM MOUTH. | Map #: | 093L035 | Reach Length (km): | 1.2 |
| Date: 9/18/96 | Time: 17:00 | U.T.M.: | 9.6118 60262 | Length surveyed (m): | 1200.0 |
| Agency: C58 | Survey Crew: RD\ \ \ \ \ \ \ \ | | | Method: | MW |
| | | | | Site No.: | 2 |
| | | | | Length surveyed (m): | 1200.0 |
| | | | | Method: | HC |
| | | | | Fish Card: | N |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Photos: | A4/8, 9 |
| | | | | Air Photos: | BCB 91181:170 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 3.3 | Method Av. Chan. Width (m): | T | 4.1 | 4.3 | 2.8 | 2.5 | 2.7 |
| Av. Wet. Width (m): | 3.3 | Method Av. Wet. Width (m): | T | 4.1 | 4.3 | 2.8 | 2.5 | 2.7 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 38 | Av. Max. Pool Depth (cm): | 8 | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 75 | % Run: 5 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|-----------|----|----------------|----|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 10 | Boulder: | 90 | In Veg.: | 0 |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE |
| | | | | Over Veg: | 0 | Cutbank: | 0 |

Discharge

| | | | | | |
|-----------------------|------|----------------------------|----|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | |
| Discharge (m3/s) : | 0.60 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 3 A 4.0 | 0370 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 35 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs 1ft(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C.

Watershed Code:

Stream Survey Report

460-6006-508-584-214-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 250 | A | S | | | VO |
| DV | 1 | | J | R | | | VO |
| DV | 2 | | F | R | | | VO |

Obstructions

Comments

- C1 The DV visually observed in R2 were confirmed as DV once sampling results showed that R2 and u/s exclusively contain DV.
- C2 Channel is more stable in R2 than in R1. Debris steps were also present in R2; may be restrictions to BT migration at certain flows.
- C3 Limited spawning potential present in this section of R2.
- C4 ~500 m u/s from base of R2, an unstable bank on river left was observed.
- C5 L11 and L12 enter Loljuh C. mainstem over a steep embankment; no defined channels were observed for both tributaries, and no fish habitat is present. L14, L15, and L16 were not observed during Loljuh C. survey.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C.

Watershed Code:

Stream Survey Report

460-6006-508-584-214-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------|----------------------|--------------------|
| Stream Name: | LOLJUH C. | Stream "Local": | LOLJUH C. | Access: | 11 |
| Watershed Code: | 460-6006-508-584-214-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 0.3 Method: MW |
| Location: | SITE LOCATED ~150 m U/S FROM THE R3 BOUNDARY. | Site No.: | 3 | Length surveyed (m): | 300 0 Method: HC |
| | Map #: 093L035 | Fish Card: | N | Field: | Yes Historical: No |
| | U.T.M. : 9.6118 .60262 | Photos: | A4/15, 16 | Air Photos: | BCB 91181.170 |
| Date: | 9/19/96 | Time: | 13:00 | Agency: | C58 |
| | | Survey Crew: | RD\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.4 | 2.1 | 1.1 | 1.3 | 0.9 | 1.3 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.4 | 2.1 | 1.1 | 1.3 | 0.9 | 1.3 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 55 | % Run: | 25 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 5 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 60 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 35 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | Medium |

Cover

| | | | |
|----------------------|----|-----------------------|-------------------|
| Cover Total % : | 75 | Method Cover Total %: | GE |
| Dp Pool : 10 L.O.D.: | 5 | Boulder: 25 | In Veg.: 0 |
| Crown Closure % : | | Over Veg: 20 | Cutbank: 40 |
| | | Method Crown Closure: | Aspect : NW |
| | | | Method Aspect: AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| 1 A 5.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C.

Watershed Code:

Stream Survey Report

460-6006-508-584-214-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 2 | 147 - 150 | A | S | M | | MT |
| DV | 2 | 102 - 122 | J | R | | | MT |

Obstructions

Comments

- C1 5 minnow traps were set for 24 hours; the DV adults caught were ripe males. A spawning pair of DV ~250 - 300 mm long were visually observed; this confirms that DV are spawning in R3. Numerous juvenile fish were also observed in this reach.
- C2 Stable lake outlet (ie. the lower lake) with cobble bed material and sections of gravel suitable for spawning. The lower 100 m of R1 contains excellent small fish spawning gravels.
- C3 The lower lake is very shallow with a muddy bottom and weeds surround the edge of the lake. The channel between the two lakes is heavily weeded with small cobble bed material and has no spawning potential. Gradient is <1%. The upper lake outlet consists of a breached 1.5 m high beaver dam - presently a restriction to juveniles with a 30 cm high drop at outlet and estimated 5 cfs flow.
- C4 Tributaries L21 and L22 were not observed during the Loljuh C. survey.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-224-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------|----------------------|-------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L2 | Access: | F1 |
| Watershed Code: | 460-6006-508-584-214-224-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.7 Method: MW |
| Location: | SITE LOCATED ~150 m U/S FROM L2 MOUTH. | Site No.: | 1 | Length surveyed (m): | 200.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9 6134 .60270 | Photos: | A1/16, 17 Air Photos: BCB 91181:173 |
| Date: | 9/16/96 | Time: | 12:30 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.8 | 1.7 | 1.3 | 1.1 | 1.3 | 1.4 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 8 | Av. Max. Pool Depth (cm): | 4 | | | | | | |
| Gradient (%): | 16.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 5 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 70 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 16 | Compaction: | Medium |

Cover

| | | | |
|------------------|-----------|-----------------------|------------|
| Cover Total %: | 70 | Method Cover Total %: | GE |
| Dp Pool: 0 | L.O.D.: 0 | Boulder: 100 | In Veg.: 0 |
| | | Over Veg: 0 | Cutbank: 0 |
| Crown Closure %: | | Method Crown Closure: | Aspect: NW |
| | | Method Aspect: | AE |

Discharge

| | | | |
|----------------------|----------------------------|--------------------------|--|
| Wetted Width (m): | Method Wetted Width (m): | | |
| Mean Depth (m): | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s): | 0.06 | Method Discharge (m3/s): | |

Specific Data

Banks

| | | | |
|----------------------|------|--------------------------|-------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.12 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 2 | Method Bars: | GE |
| pH: | 8.5 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GT |
| Cond. (µmhos): | | Method Conductivity: | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 16.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

2~Mar~9~

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-224-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Stable system - potential to move small debris in flood events.
- C2Gradient ~24% in the lower 30 m of tributary; D2 not accessible to fish due to small size of creek and high gradient.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-285-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L3 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-285-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | ~300 m U/S FROM L3 CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 500.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N |
| | | U.T.M.: | 9.6137 .60271 | Field: | Yes |
| Date: 9/16/96 | Time: 14:30 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | A1/20, 21 |
| | | | | Air Photos: | BCB 91181.173 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 5.1 | Method Av. Chan. Width (m): | T | 4.5 | 4.6 | 4.4 | 5.3 | 6.1 | 5.5 |
| Av. Wet. Width (m): | 4.5 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 20 | L.O.D.: 10 | Boulder: 70 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect: NW | Method Aspect: AE | | | | |

Discharge

| | | | | | |
|----------------------|----------------------------|--------------------------|--|--|--|
| Wetted Width (m): | Method Wetted Width (m): | | | | |
| Mean Depth (m): | Method Mean Depth (m): | | | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s): | 0.14 | Method Discharge (m3/s): | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | SP |
| 5 A 9.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 15 |
| % Larges: | 75 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 22 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (umhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-285-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | X | 0.5 |

Comments

- C1 Small, stable stream with moderate gradient. Bed material consists of cobble; no potential spawning.
- C2 Numerous ~0.3 m high drops over stops logs were observed in R1; barriers to fry and may be barriers to juveniles. ~500 m u/s from the mouth and at the top of R1, a 1.2 m high drop over a debris jam was noted; barrier to fry and juveniles, restriction to adults.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-285-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|----------------------|----------------------|-------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L3 | Access: | FI |
| Watershed Code: | 460-6006-508-584-214-285-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~650 m U/S FROM L3 CONFLUENCE, ~150 m U/S FROM REACH BREAK. | Site No.: | 2 | Length surveyed (m): | 150.0 Method: IIC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6137 .60271 | Photos: | A1/22, 23 Air Photos: BCB 91181:173 |
| Date: | 9/16/96 | Time: | 15:00 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 4.6 | Method Av. Chan. Width (m): | T | 4.5 | 4.4 | 5.0 | 4.3 | 4.8 |
| Av. Wet. Width (m): | 4.0 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 7 | | | | | |
| Gradient (%): | 12.0 | Method Gradient: | CL | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: GE |
| % Side Channel: | | Method Side Channel: | GE | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 10 | L.O.D.: | 10 | Boulder: | 80 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | NW | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.10 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 5 A 12.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 15 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 28 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 3 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs 1ft(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.8 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-285-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Gradient is ~16% for the lower 20 m of R2 and then decreases to an average of 12% for the remainder of R2. Suspect no fish above 1.2 m debris jam (top of R1) and 16% section, but fish presence is possible. R2 is classed as suspected S3 based on the presence of fish above large falls in L10 and L17.
- C2 Bed material in R2 consists of boulder/cobble; very limited potential spawning.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-363-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------|----------------------|-----------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L5 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-363-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | -100 m U/S FROM L5 CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 235.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6143 60273 | Photos: | A2/2, 3 Air Photos: BCB 91181.173 |
| Date: | 9/16/96 | Time: | 17:10 | Agency: | CS8 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | |
|---------------------------|-------|-----------------------------|----|
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T |
| Av. Wet. Width (m): | 2.5 | Method Av. Wet. Width (m): | T |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 8 |
| Gradient (%): | 3.0 | Method Gradient: | CL |
| % Pool: | 15 | % Riffle: | 75 |
| % Side Channel: | 0 | % Run: | 10 |
| % Debris Area: | 10-40 | % Other: | 0 |
| | | Method: | GE |
| | | Method Side Channel: | GE |
| | | Method Debris Area: | GE |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 40 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 25 |
| % Larges: | 55 | Small cobble (64-128mm): | 35 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 13 | Compaction: | Medium |

Cover

| | | | |
|-------------------|---------|-----------------------|----------|
| Cover Total % : | | Method Cover Total %: | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: |
| Crown Closure % : | 10 | Method Crown Closure: | GE |
| | | Aspect : | S |
| | | Method Aspect: | AE |
| | | Over Veg: | Cutbank: |

Banks

| | | | |
|----------------------|------|--------------------------|-----|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ill(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|-----------------------|------|------------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) : | VO |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| SP (DV) (BT) | |
| 3 B 3.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

27-Mar-97

460-6006-508-584-214-363-000-000-000-000-000

Stream/Valley Cross Section

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SP | | | J | | | | VO |

| | |
|----|--|
| C1 | Observed juvenile salmonids in the lower 120 m; suspect DV/BT are present. |
|----|--|

C1 Observed juvenile salmonids in the lower 120 m; suspect DV/BT are present.

C2 Small creek. Easy fish access in lower R1. Potential spawning gravels were noted; no fry were observed. Fish distribution ends at the top of R1 based on the 1 m high drop at the reach break and the steep gradient in R2.

C3 Moderate potential for trib. to move small debris.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-363-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------------------|----------------------|-------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L5 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-363-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | ~350 m U/S FROM L5 CONFLUENCE, ~120 m U/S FROM REACH BREAK. | Site No.: | 2 | Length surveyed (m): | 150.0 Method: IIC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/16/96 | Time: 16:50 | Agency: C58 | Survey Crew: RD\CP \ \ \ \ \ | Photos: | A1/24, 25 Air Photos: BCB 91181:173 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.7 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | |
| Av. Wet. Width (m): | 2.7 | Method Av. Wet. Width (m): | T | 1.9 | 2.4 | 3.7 | 3.1 | 2.2 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | 1.9 | 2.4 | 3.7 | 3.1 | 2.2 |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 6 | | | | | |
| Gradient (%): | 12.0 | Method Gradient: | CL | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | HC | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|-------------|----------------|----|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | |
| Dp Pool: 0 | L.O.D.: 0 | Boulder: 100 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect: S | Method Aspect: | AE | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|----------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | | <i>Specific Data</i> |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 3 B 12 0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 20 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 29 | Compaction: | Medium |

Banks

| | | | |
|----------------------|------|--------------------------|-------------------------|
| Height (m): | 8.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: Yes |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GL |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUI C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-363-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.2 |

Comments

- C1 Short section at the bottom of R2 with ~18% gradient and 1 to 1.5 m high drops. End of fish access at 234 m (1 m high debris jam).
- C2 Very confined and steep single channel throughout R2.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-214-363-L5.-2 -000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|----------------------|--------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L5.2 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-214-363-L5.-2 -000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~50 M D/S FROM HEADWATER LAKE. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/18/96 | Time: 11:15 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | Photos: | DB1/10, 11 Air Photos: BCB 91181:173 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6140 .60284 | | |

Channel Characteristics

| | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|--|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | | |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 6 | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | |
| % Pool: 70 | % Riffle: 30 | % Run: 0 | % Other: 0 | Method: GE | |
| % Side Channel: | 0 | Method Side Channel: | GE | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 60 | Small (2-16mm): | 40 |
| | | Large (16-64mm): | 20 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 3 | Compaction: | High |

Cover

| | | | | | |
|-----------------------|------------|-----------------------|--------------|-------------|-------------------|
| Cover Total % : | 100 | Method Cover Total %: | GE | | |
| Dp Pool: 0 L.O.D.: 20 | Boulder: 0 | In Veg.: 0 | Over Veg: 30 | Cutbank: 50 | |
| Crown Closure % : | 70 | Method Crown Closure: | GE | Aspect: E | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I A 6.0 | 4600 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-363-1.5.-2 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 5 minnow traps were set overnight: 3 traps in the outlet creek, 2 traps in the lake-ponded outlet. No fish were caught or observed. Assume barren of fish.
- C2 3 Western Spotted frogs were noted in the wetland area around the lake.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L6 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|-----------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L6 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-L6 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.9 Method: MW |
| Location: | ~150 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6147 .60273 | Photos: | A3/2, 3 Air Photos: BCB 91181:171 |
| Date: 9/18/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.6 | 0.5 | 0.3 | 0.4 | 0.6 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.6 | 0.5 | 0.3 | 0.4 | 0.6 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 8 | Av. Max. Pool Depth (cm): | 6 | | | | | |
| Gradient (%): | 21.0 | Method Gradient: | CL | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|-------------|-------------------|--|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | |
| Dp Pool : 0 | L.O.D.: 5 | Boulder: 95 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : SW | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 21.0 | 0280 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 50 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 0.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L6 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Small, confined, steep channel with a trickle flow discharge. Low energy creek. No fish access. No fish habitat present.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L7 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|-----------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L7 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-L7 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.0 Method: MW |
| Location: | -100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 350.0 Method: HC |
| | | Map #: | 0931.034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6148 .60273 | Photos: | A3/6, 7 Air Photos: BCB 91181-171 |
| Date: 9/18/96 | Time: 11:30 | Agency: C58 | Survey Crew: RD \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.6 | 0.7 | 0.4 | 0.5 | 0.6 | 0.4 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.6 | 0.7 | 0.4 | 0.5 | 0.6 | 0.4 |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 4 | | | | | | |
| Gradient (%): | 20.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 95 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 45 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 21 | Compaction: | High |

Cover

| | | | |
|-------------------|-----|-----------------------|-------------------------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool : | 0 | L.O.D.: | 0 |
| Boulder: | 100 | In Veg.: | 0 |
| Over Veg: | 0 | Cutbank: | 0 |
| Crown Closure % : | | Method Crown Closure: | Aspect : SW Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 20.0 | 0280 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLI/UE C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L7 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Lower 50 m of L7: <1% gradient, gravel/sand/silt bed material, and overgrown with brush. The tributary flows into a large flood channel. Although no fish were observed, suspect fish use in the lower 50 m of D7. No fish use further u/s based on no fish access above 50 m (steep gradient) and no fish habitat (forest/moss channel with some standing bog areas).

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L7 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Lower 50 m of L7: <1% gradient, gravel/sand/silt bed material, and overgrown with brush. The tributary flows into a large flood channel. Although no fish were observed, suspect fish use in the lower 50 m of D7. No fish use further u/s based on no fish access above 50 m (steep gradient) and no fish habitat (forest/moss channel with some standing bog areas).

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L8 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|-----------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L8 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-L8 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.0 Method: MW |
| Location: | ~80 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6148 .60273 | Photos: | A3/4, 5 Air Photos: BCB 91181:171 |
| Date: | 9/18/96 | Time: | 11:00 | Agency: | C58 |
| | | Survey Crew: | RD\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 0.9 | 0.7 | 1.2 | 1.1 | 0.9 | 1.3 |
| Av. Wet. Width (m): | 0.2 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 3 | | | | | | |
| Gradient (%): | 55.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|-----|----------------|----|-----------|---|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 100 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | 60 | Method Crown Closure: | GE | Aspect : | N | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 55.0 | 0190 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 90 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 50 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | Medium |

Banks

| | | | |
|----------------------|------|--------------------------|-------------|
| Height (m): | 1.3 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 50 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GL |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L8 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Comments

C1 Very confined, steep, low energy tributary. Channel is stable (moss covered boulders within channel).

C2 No potenial fish access or fish use.

Obstructions

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L9 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L9 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-L9 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.1 Method: MW |
| Location: | LOWER 100 m OF L9. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/18/96 | Time: 11:00 | Agency: C58 | Survey Crew: RD \ \ \ \ \ \ \ \ | Photos: | A3/9, 10 Air Photos: BCB 91181-171 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.4 | 0.6 | 0.3 | 0.5 | 0.9 | 0.4 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 30.0 | Method Gradient: | CL | | | | | | |
| % Pool: 0 | % Riffle: 0 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 50 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | Medium |

Cover

| | | | |
|----------------------|--------------|-----------------------|---------------------------------|
| Cover Total % : | 70 | Method Cover Total %: | GE |
| Dp Pool: 0 L.O.D.: 0 | Boulder: 100 | In Veg.: 0 | Over Veg: 0 Cutbank: 0 |
| Crown Closure % : | 20 | Method Crown Closure: | GE Aspect : N Method Aspect: AE |

Banks

| | | | |
|----------------------|------|--------------------------|------------------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | Dry | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 100 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.00 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 30.0 | 1190 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-L9 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Small, steep, dewatered channel which enters into an active flood channel of main Loljuh C.

C2 No fish access and no suitable fish habitat in L9.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-521-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|-------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L10 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-521-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.4 Method: MW |
| Location: | LOWER REACH OF L10, ~400 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 500.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6154 .60273 | Photos: | A3/11, 12 Air Photos: BCB 91181.171 |
| Date: 9/18/96 | Time: 13:30 | Agency: C58 | Survey Crew: RD\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 5.1 | Method Av. Chan. Width (m): | T | 4.4 | 6.5 | 4.7 | 4.1 | 5.2 | 5.7 |
| Av. Wet. Width (m): | 4.9 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 60 | % Run: | 25 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|------------|---|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 5 | L.O.D.: | 20 | Boulder: | 70 | In Veg.: | 0 | Over Veg.: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | SW | Method Aspect: | AE | Cutbank: | 5 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.40 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV |
| 5 A 7.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 20 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 15 |
| % Larges: | 70 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 21 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs 1lt(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 1 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-521-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 4 | F | 0.8 |
| | 3 | F | 0.8 |

Comments

- C1 Easy fish access into L10.
- C2 Bed material primarily consists of cobble but sections of gravel with potential for spawning were observed.
- C3 LOD is present across the channel. Tributary is large with a high potential to move debris.
- C4 The 4 m high falls and 3 m high falls observed ~800 m u/s from the mouth are barriers, but resident DV were found further u/s.
- C5 L10.1 - L10.4 were not observed by air. Due to the steepness of the sideslopes off the bench, the tributaries are inaccessible and not fish bearing if they are at all existent.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-521-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|----------------------|--------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L10 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-214-521-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 3.2 Method: MW |
| Location: | ~3.8 km U/S FROM MOUTH, ~1.4 km U/S FROM REACH BREAK. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | Y Field: Yes Historical: No |
| | | U.T.M.: | 9.6154 .60273 | Photos: | DB1/12, 13 Air Photos: BCB 91181:196 |
| Date: 9/18/96 | Time: 12:00 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 2.8 | Method Av. Chan. Width (m): | T | 3.5 | 2.3 | 2.9 | 2.8 | 3.1 | 2.1 |
| Av. Wet. Width (m): | 2.6 | Method Av. Wet. Width (m): | T | 2.1 | 2.9 | 2.8 | 3.1 | 2.1 | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 60 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|-------------|--------------|-------------------|--|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | |
| Dp Pool : 0 | L.O.D.: 0 | Boulder: 0 | In Veg.: 30 | Over Veg: 30 | Cutbank: 40 | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.10 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV* |
| 3 B 2.0 | 0550 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 50 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 40 |
| % Larges: | 50 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-521-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 15 | 102 - 130 | A | S | M | | MT |
| DV | 12 | 76 - 100 | J | R | | | MT |

Obstructions

Comments

- C1 5 minnow traps were set overnight and DV were caught. Majority of the adult DV were either spent or ripe. Two ~10 cm DV were visually observed and were suspected to be DV spawners. Assume DV are spawning in this section. Resident population presumably associated with headwater lake on this system.
- C2 Lat/Lon of helicopter landing site: 54 24 57 127 13.43
- C3 L10.5, L10.6 and L10.7 were surveyed by air; the lower reach of each tributary is accessible to fish based on gradient.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-583-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|-----------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L13 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-583-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6159 .60273 | Photos: | A4/2, 3 Air Photos: BCB 91181:171 |
| Date: | 9/18/96 | Time: | 13:50 | Agency: | C58 |
| | | Survey Crew: | RD \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.2 | Method Av. Chan. Width (m): | T | 0.4 | 0.3 | 0.0 | 0.2 | 0.1 | 0.2 |
| Av. Wet. Width (m): | 0.2 | Method Av. Wet. Width (m): | T | 0.4 | 0.3 | 0.0 | 0.2 | 0.1 | 0.2 |
| Av. Max. Rif. Depth (cm): | 2 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 11 | Av. Max. Pool Depth (cm): | 2 | | | | | | |
| Gradient (%): | 15.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 80 | % Run: | 10 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|------------|---|
| Cover Total % : | 10 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 90 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 10 | Over Veg.: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | N | Method Aspect: | AE | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 0 A 15.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | 1. | | |
| Flood Signs III(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-583-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Sand/silt-bedded seepage with moss covered banks. Very, very small tributary with no possible fish use.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-690-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|--|--|-----------------|--|-------------------------|--|--|--|---|--|
| Stream Name: | | LOLJUH C. TRIBUTARY | | Stream "Local": | | L17 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-584-214-690-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 2.1 Method: MW | |
| Location: | | ~250 m U/S FROM MOUTH. | | Map #: | | 093L034 | | Site No.: | | 1 Length surveyed (m): 400.0 Method: HC | |
| Date: | | 9/18/96 | | U.T.M.: | | 9.6167 .60274 | | Fish Card: | | N Field: Yes Historical: No | |
| Time: | | 15:00 | | Agency: | | C58 | | Photos: | | A4/4, 5 Air Photos: BCB 91181:171 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 5.5 Method Av. Chan. Width (m): | | T | | 6.4 4.3 5.7 4.8 5.4 6.6 | | % Fines (<2mm): | | 5 % Fines (<2mm): 5 | |
| Av. Wet. Width (m): | | 4.5 Method Av. Wet. Width (m): | | T | | | | % Gravels: | | 25 Small (2-16mm): 5 | |
| Av. Max. Rif. Depth (cm): | | 15 Av. Max. Riffle Depth (cm): | | MS | | | | % Largess: | | 70 Small cobble (64-128mm): 60 | |
| Av. Max. Pool Depth (cm): | | 35 Av. Max. Pool Depth (cm): | | 15 | | | | | | Large cobble (128-256mm): 10 | |
| Gradient (%): | | 9.0 Method Gradient: | | CL | | | | | | Boulder cobble (>256mm): 0 | |
| % Pool: 15 | | % Riffle: 80 | | % Run: 5 | | % Other: 0 | | Method: GE | | | |
| % Side Channel: | | 0 Method Side Channel: | | GE | | | | % Bedrock: | | 0 % Bedrock: 0 | |
| % Debris Area: | | 40 Method Debris Area: | | GE | | | | D90 (cm): | | 12 Compaction: Medium | |
| Cover | | | | | | | | Banks | | | |
| Cover Total % : | | 80 Method Cover Total %: | | GE | | | | Height (m): | | 2.0 % Unstable: 0 | |
| Dp Pool: 0 L.O.D.: | | 30 Boulder: 70 | | In Veg.: 0 | | Over Veg: 0 | | Textures Fines: | | Yes Gravel: Yes Largess: No Bedrock: No | |
| Crown Closure % : | | Method Crown Closure: | | Aspect: SW | | Method Aspect: AE | | Confinement: | | 2 | |
| Discharge | | | | Specific Data | | | | Valley: Chan. Ratio: | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Stage: | | M | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Flood Signs 11t(m): | | 0.35 Method Flood Signs: MS | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | | | | | Braided: | | N Method Braided: GE | |
| Discharge (m3/s) : | | Method Discharge (m3/s) : | | | | | | Bars (%): | | 10 Method Bars: GE | |
| Reach Symbol | | | | | | | | pH: | | | |
| | | | | (Fish) | | | | 8.1 Method pH: PH | | | |
| | | | | SP(DV) | | | | 02 (ppm): Method Dissolved Oxygen: | | | |
| | | | | 6 A 9.0 1270 | | | | Water Temp. (°C): 7.0 Method Temperature: 10 | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | Turb. (cm): 200 Method Turbidity: GE | | | |
| | | | | | | | | Cond. (µmhos): Method Conductivity: | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-690-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | C | 0.0 |
| | 1 | C | 0.0 |

Comments

- C1 Large, dynamic creek with large amounts of debris lying within the channel.
- C2 Two 0.5 m high bedrock chutes were observed at 30 m from the mouth, barrier to fry and juveniles.
- C3 Observed a char ~150 m u/s from mouth; suspected to be DV based on other sampling results which show only DV in the upper reaches of Loljuh C. Accessible to fish to the top of R1. Above R1, creek is too steep to support fish.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-690-062-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|--|--|--------------------------------|--|----------------------|--|--|--|
| Stream Name: | | LOLJUH C. TRIBUTARY | | Stream "Local": | | L17.1 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-584-214-690-062-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 1.7 Method: MW | |
| Location: | | ~50 m U/S FROM L17.1 CONFLUENCE. | | Map #: | | 093L034 | | Site No.: | | 2 Length surveyed (m): 200.0 Method: HC | |
| | | | | U.T.M.: | | 9.6167 .60278 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/18/96 | | Time: 16:00 | | Agency: C58 | | Survey Crew: RD\ \ \ \ \ \ \ \ | | Photos: | | A4/6 Air Photos: BCB 91181:171 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 2.1 Method Av. Chan. Width (m): | | T | | 1.7 1.9 2.2 2.4 2.3 1.9 | | % Fines (<2mm): | | 5 % Fines (<2mm): 5 | |
| Av. Wet. Width (m): | | 1.9 Method Av. Wet. Width (m): | | T | | | | % Gravels: | | 65 Small (2-16mm): 20 | |
| Av. Max. Rif. Depth (cm): | | 8 Av. Max. Riffle Depth (cm): | | MS | | | | | | Large (16-64mm): 45 | |
| Av. Max. Pool Depth (cm): | | 20 Av. Max. Pool Depth (cm): | | 8 | | | | % Larges: | | 30 Small cobble (64-128mm): 20 | |
| Gradient (%): | | 7.0 Method Gradient: | | CL | | | | | | Large cobble (128-256mm): 10 | |
| % Pool: 10 | | % Riffle: 80 | | % Run: 10 | | % Other: 0 | | Method: GE | | Boulder cobble (>256mm): 0 | |
| % Side Channel: | | 0 Method Side Channel: | | GE | | | | | | % Bedrock: 0 % Bedrock: 0 | |
| % Debris Area: | | 10 Method Debris Area: | | GE | | | | | | D90 (cm): 13 Compaction: High | |
| Cover | | | | Banks | | | | | | | |
| Cover Total % : | | 60 Method Cover Total %: | | GE | | | | Height (m): | | 1.5 % Unstable: 0 | |
| Dp Pool: 10 L.O.D.: 30 | | Boulder: 60 | | In Veg.: 0 | | Over Veg: 0 | | Cutbank: 0 | | Textures Fines: Yes Gravel: Yes Larges: No Bedrock: No | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : SW | | Method Aspect: AE | | | | Confinement: 2 | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Valley: Chan. Ratio: | | 1 | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Stage: | | M | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | | | | | Flood Signs Ht(m): | | 0.15 Method Flood Signs: MS | |
| Discharge (m3/s) : | | Method Discharge (m3/s) : | | | | | | Braided: | | N Method Braided: GE | |
| | | | | | | | | Bars (%): | | 5 Method Bars: GE | |
| | | | | | | | | pH: | | 7.8 Method pH: PH | |
| | | | | | | | | O2 (ppm): | | Method Dissolved Oxygen: | |
| | | | | | | | | Water Temp. (°C): | | 7.0 Method Temperature: 10 | |
| | | | | | | | | Turb. (cm): | | 200 Method Turbidity: GE | |
| | | | | | | | | Cond. (µmhos): | | Method Conductivity: | |
| Reach Symbol | | | | | | | | | | | |
| | | | | (Fish) | | | | | | | |
| | | | | DV | | | | | | | |
| | | | | 2 A 7.0 1630 | | | | | | | |
| | | | | (Width, Valley: Channel, Slope) (Bed Material) | | | | | | | |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-690-062-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | | J | R | | | VO |

Obstructions

Comments

C1 Observed DV juvenile ~30 m u/s from mouth.

C2 The lower 40 m of channel has a gradient of 7% and habitat is suitable for fish. Above 40 m the channel becomes very confined/boulder-bedded with a gradient of 14 - 18% and increasing u/s. Tributary is accessible to fish in the lower 40 m; no potential fish use above 40 m.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-690-365-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------|--------------------|---|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L17.2 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-214-690-365-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.2 Method: MW |
| Location: | ~800 m U/S FROM MOUTH, ~400 m U/S FROM REACH BREAK. | Map #: | 093L044 | Site No.: | 3 Length surveyed (m): 200.0 Method: HC |
| Date: 9/18/96 | Time: 15:00 | Agency: C58 | U.T.M.: 9.6169 .60293 | Fish Card: | N Field: Yes Historical: No |
| Survey Crew: | DB\ \ \ \ \ \ \ \ | Photos: | DB1/14, 15 | Air Photos: | BCB 91181:196 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 1.9 | 1.2 | 2.8 | 1.7 | 1.0 | 1.3 |
| Av. Wet. Width (m): | 1.7 | Method Av. Wet. Width (m): | T | 1.9 | 1.2 | 2.8 | 1.7 | 1.0 | 1.3 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 90 | % Riffle: | 10 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 100 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 90 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | SE | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.05 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 6.0 | 8020 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 20 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-690-365-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Set 5 minnow traps overnight; no fish were caught or observed. Suspected fish access to the top of R1 (the lower 400 m of L17.2).
- C2Channel is heavily overgrown with willow cover. No deep water lake area for overwintering present.
- C3Large clay bank was observed at mouth of L17.2.
- C4Lat/Lon of helicopter landing site: 54 24.18 127 12.29

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-696-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|-------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L18 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-696-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~500 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 700.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/19/96 | Time: 9:30 | Agency: C58 | Survey Crew: RD\ \ \ \ \ \ \ \ | Photos: | A4/10, 11 Air Photos: BCB 91181:170 |
| | | Map #: | 093L035 | | |
| | | U.T.M.: | 9.6171 .60274 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 3.5 | Method Av. Chan. Width (m): | T | 3.8 | 4.0 | 3.2 | 2.9 | 3.5 | 3.7 |
| Av. Wet. Width (m): | 3.4 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 25 | % Riffle: | 65 | % Run: | 10 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 45 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 40 | Boulder: | 20 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : | SW | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | SP(DV*) |
| 4 A 5.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 40 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 25 |
| % Larges: | 50 | Small cobble (64-128mm): | 45 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-696-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SP | 1 | | F | R | | | VO |

Obstructions

Comments

- C1One char fry was observed ~400 m w/s from mouth; suspected to be DV, and suspect DV spawning is occurring in this reach.
- C2LOD is abundant in stream channel and the majority is stable. Numerous small drops over debris are present.
- C3Good spawning habitat is present throughout most of R1.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-696-L18-.1 -000-000-000-000

| Header Information | | | | | | | | | | |
|---------------------------------|----|--|-----------------------------|-----------------|------|--------------------------------|----------------|-------------|----------|---------------|
| Stream Name: | | LOLJUH C. TRIBUTARY | | Stream "Local": | | L18.1 | | Access: | | FF |
| Watershed Code: | | 460-6006-508-584-214-696-L18-.1 -000-000-000-000 | | Map #: | | 093L035 | | Reach No.: | | 1 |
| Location: | | ~100 m U/S FROM L18.1 CONFLUENCE. | | U.T.M.: | | 9.6178 .60278 | | Site No.: | | 2 |
| Date: 9/19/96 | | Time: 11:00 | | Agency: C58 | | Survey Crew: RD\ \ \ \ \ \ \ \ | | Fish Card: | | N |
| | | | | | | | | Photos: | | A4/12 |
| | | | | | | | | Air Photos: | | BCB 91181-170 |
| Channel Characteristics | | | | | | | | | | |
| Av. Chan. Width (m): | | 0.5 | Method Av. Chan. Width (m): | | T | Specific Data | | | | |
| Av. Wet. Width (m): | | 0.5 | Method Av. Wet. Width (m): | | T | 0.6 | 0.7 | 0.4 | 0.5 | 0.4 |
| Av. Max. Rif. Depth (cm): | | 4 | Av. Max. Riffle Depth (cm): | | MS | 0.6 | 0.7 | 0.4 | 0.5 | 0.4 |
| Av. Max. Pool Depth (cm): | | 20 | Av. Max. Pool Depth (cm): | | 4 | | | | | |
| Gradient (%): | | 19.0 | Method Gradient: | | CL | | | | | |
| % Pool: | 15 | % Riffle: | 75 | % Run: | 10 | % Other: | 0 | Method: GE | | |
| % Side Channel: | 0 | Method Side Channel: | | GE | | | | | | |
| % Debris Area: | 30 | Method Debris Area: | | GE | | | | | | |
| Bed Material | | | | | | | | | | |
| % Fines (<2mm): | | 10 | % Fines (<2mm): | | 10 | | | | | |
| % Gravels: | | 90 | Small (2-16mm): | | 40 | | | | | |
| | | | Large (16-64mm): | | 50 | | | | | |
| % Larges: | | 0 | Small cobble (64-128mm): | | 0 | | | | | |
| | | | Large cobble (128-256mm): | | 0 | | | | | |
| | | | Boulder cobble (>256mm): | | 0 | | | | | |
| % Bedrock: | | 0 | % Bedrock: | | 0 | | | | | |
| D90 (cm): | | 5 | Compaction: | | High | | | | | |
| Cover | | | | | | | | | | |
| Cover Total % : | | 70 | Method Cover Total %: | | GE | | | | | |
| Dp Pool : | 40 | L.O.D.: | 50 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 0 | Cutbank: |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | | S | Method Aspect: | | AE | |
| Banks | | | | | | | | | | |
| Height (m): | | 0.5 | % Unstable: | | 0 | | | | | |
| Textures Fines: | | Yes | Gravel: | | Yes | Larges: | | No | Bedrock: | |
| Confinement: | | 2 | | | | | | | | |
| Valley: Chan. Ratio: | | 1 | | | | | | | | |
| Stage: | | L | | | | | | | | |
| Flood Signs Ht(m): | | 0.1 | Method Flood Signs: | | MS | | | | | |
| Braided: | | N | Method Braided: | | GE | | | | | |
| Bars (%): | | 0 | Method Bars: | | GE | | | | | |
| pH: | | 7.8 | Method pH: | | PH | | | | | |
| O2 (ppm): | | | Method Dissolved Oxygen: | | | | | | | |
| Water Temp. (°C): | | 4.0 | Method Temperature: | | TC | | | | | |
| Turb. (cm): | | 200 | Method Turbidity: | | GE | | | | | |
| Cond. (µmhos): | | | Method Conductivity: | | | | | | | |
| Discharge | | | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | Specific Data | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | | | |
| Discharge (m3/s) : | | 0.03 | Method Discharge (m3/s) : | | | | | | | |
| Reach Symbol | | | | | | | | | | |
| (Fish) | | NS | | | | | | | | |
| | | 1 A 19.0 | | 1900 | | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-696-L18-1 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Small, steep, stable, confined creek. Moss covers the channel banks. Several 0.3 m - 0.5 m high drops over LOD are present in R1. Not accessible to fish. |
| C2 | R2 was surveyed by air: creek is nearly stagnant with sections having no defined channel. No fish potential throughout R2 |
| C3 | L18.1 is classed as S6 habitat throughout |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-696-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L18 | Access: | LI |
| Watershed Code: | 460-6006-508-584-214-696-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~500 m U/S FROM REACH BREAK; ADJACENT TO MEADOW, NEAR OLD MINING CAMP. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L035 | Fish Card: | N |
| | | U.T.M.: | 9.6171 .60274 | Field: | Yes |
| Date: | 9/18/96 | Agency: | C58 | Historical: | No |
| Time: | 15:30 | Survey Crew: | DB\ \ \ \ \ \ \ \ | Photos: | DBI/16, 17 |
| | | | | Air Photos: | BCB 91181:198 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 2.7 | 1.3 | 2.2 | 1.9 | 2.0 | 1.8 |
| Av. Wet. Width (m): | 2.0 | Method Av. Wet. Width (m): | T | 2.7 | 1.3 | 2.2 | 1.9 | 2.0 | 1.8 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 25 | % Riffle: | 75 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 60 | Small (2-16mm): | 40 |
| | | Large (16-64mm): | 20 |
| % Larges: | 30 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | High |

Cover

| | | | |
|------------------|----|-----------------------|----|
| Cover Total %: | 75 | Method Cover Total %: | GE |
| Dp Pool: | 0 | L.O.D.: | 80 |
| Boulder: | 0 | In Veg: | 0 |
| Over Veg: | 0 | Cutbank: | 20 |
| Crown Closure %: | 50 | Method Crown Closure: | GE |
| Aspect: | SW | Method Aspect: | AE |

Discharge

| | |
|----------------------|-------------------------------|
| Wetted Width (m): | Method Wetted Width (m): |
| Mean Depth (m): | Method Mean Depth (m): |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) VO |
| Discharge (m3/s): | 0.11 Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 2 A 6.0 | 1630 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.7 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Larges: | No | Bedrock: | No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.7 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 1 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-696-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 3 | 93 - 103 | J | R | | | MT |
| DV | 4 | 108 - 130 | A | S | M | | MT |

Obstructions

Comments

- C1 5 minnow traps were set overnight adjacent to the meadow. All of the DV adults caught were males. Fish distribution is to the top of R2; above the reach break, creek is too steep to support fish.
- C3 Lat/Lon of helicopter landing site: 54 23.28 127 10.29
- C4 Tributaries L18.2 and L18.3 were surveyed by air; the creeks are very small and steep and have no fish access.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: LOLJUH C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-214-L19-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|-------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L19 | Access: | FT |
| Watershed Code: | 460-6006-508-584-214-L19-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 150.0 Method: IIC |
| | | Map #: | 093L035 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6174 .60272 | Photos: | no photo Air Photos: BCB 9/1181:170 |
| Date: 9/19/96 | Time: 11:30 | Agency: C58 | Survey Crew: RD \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.7 | 0.5 | 0.6 | 0.4 | 0.5 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.7 | 0.5 | 0.6 | 0.4 | 0.5 |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 12 | Av. Max. Pool Depth (cm): | 4 | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | |
| % Pool: 10 | % Riffle: 60 | % Run: 30 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 80 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 60 |
| % Larges: | 10 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 7 | Compaction: | High |

Cover

| | | | |
|------------------------|------------------------|-----------------------|-------------------|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: 20 | Boulder: 0 In Veg.: 20 | Over Veg: 0 | Cutbank: 50 |
| Crown Closure % : | Method Crown Closure: | Aspect: NE | Method Aspect: AE |

Banks

| | | | |
|----------------------|------|--------------------------|------------------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.01 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.01 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 3.0 | 1810 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mur-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-119-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Small, stable creek with a trickle flow discharge. Bed material primarily consists of fine gravels with some sections suitable for resident DV spawning. |
| C2 | Fish access in the lower 20 m; further u/s, numerous 0.2 m - 0.3 m high debris drops are present. ~120 m u/s from the mouth, the gradient increases to ~15%. The channel disappears into the ground ~150 m u/s from the tributary mouth. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-214-800-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|--------------------------------------|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L20 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-214-800-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.2 Method: MW |
| Location: | -400 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 850.0 Method: 11C |
| | | Fish Card: | Y | Field: | Yes Historical: No |
| Date: 9/19/96 | Time: 15:45 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | Photos: | DB1/18, 19 Air Photos: BCB 91181:170 |
| | | Map #: | 093L035 | | |
| | | U.T.M.: | 9.6175 .60272 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 3.2 | Method Av. Chan. Width (m): | T | 3.0 | 2.6 | 3.8 | 4.4 | 2.5 | 2.7 |
| Av. Wet. Width (m): | 2.2 | Method Av. Wet. Width (m): | T | 1.5 | 2.5 | 2.7 | | | |
| Av. Max. Rif. Depth (cm): | 15 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 50 | Av. Max. Pool Depth (cm): | 15 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: 30 | % Riffle: 70 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|---------------------|----|-----------------------|------------|-------------|-------------------|--|--|--|--|
| Cover Total % : | 50 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 0 L.O.D.: | 50 | Boulder: 30 | In Veg.: 0 | Over Veg: 0 | Cutbank: 20 | | | | |
| Crown Closure % : | 50 | Method Crown Closure: | GE | Aspect : N | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV* |
| 3 C 9.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 50 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 30 |
| % Larges: | 40 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 24 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLIUP C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-800-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 64 - 102 | J | R | | | MT |
| DV | 2 | 50, 53 | F | R | | | MT |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | F | 0.9 |

Comments

- C1 Set 6 minnow traps overnight and caught DV. Newly-emerged DV fry were visually observed throughout lower section of R1 up to the impassable falls. Suspect DV are spawning in I.20 based on the presence of newly emerged fry above debris drops which would pose as barriers to the fry. No BT were caught at this site; suitable BT habitat is present with several nice pools located in the lower end of R1.
- C2 Large/high bars suggest some high flow events occur and that the creek is dynamic.
- C3 The 2.3 m high bedrock falls located ~850 m w/s from the mouth is a barrier to fish based on the falls' confined nature (Photo A4/14). I.20 is classed as S5 habitat above the falls based on no catch further w/s at site 2.
- C4 Lat/Lon of helicopter landing site: 54 22.49 127 11.33

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-800-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|--------------------|---|
| Stream Name: | LOLJUH C. TRIBUTARY | Stream "Local": | L20 | Access: | H |
| Watershed Code: | 460-6006-508-584-214-800-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 2.7 Method: MW |
| Location: | ~1.8 km U/S FROM BASE OF REACH 2; LOCATED IN A MEADOW IN THE UPPER SECTION OF R2. | Map #: | 093L035 | Site No.: | 2 Length surveyed (m): 100.0 Method: HC |
| Date: 9/19/96 | Time: 17:00 | Agency: C58 | Survey Crew: DB\ \ \ \ \ \ \ \ | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6175 .60272 | Photos: | DB1/22, 23 Air Photos: BCB 91181-065 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 0.9 | 1.0 | 1.1 | 0.7 | 1.8 | 1.1 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 0.9 | 1.0 | 1.1 | 0.7 | 1.8 | 1.1 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|---------------------|----|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 0 L.O.D.: | 0 | Boulder: 40 | In Veg.: 0 | Over Veg: 10 | Cutbank: 50 | | | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : NE | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 A 8.0 | 0550 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 45 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 30 |
| % Larges: | 55 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-800-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Set 5 minnow traps overnight; no fish were caught. Assume creek to be barren u/s of 2.3 m high impassable falls located in R1.
- C2Lat/Lon of helicopter landing site: 54 21.92 127 13.42

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-933-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|--|--|--|--|-----------------|--|---|--|--------------------|--|---|--|
| Stream Name: | | LOLJUH C. TRIBUTARY | | Stream "Local": | | L23 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-584-214-933-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 1.0 Method: MW | |
| Location: | | ~100 m U/S FROM LAKE INLET (INLET CREEK). | | Map #: | | 093L035 | | Site No.: | | 1 Length surveyed (m): 300.0 Method: HC | |
| | | | | U.T.M.: | | 9.6183 .60266 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/19/96 | | Time: 15:00 | | Agency: C58 | | Survey Crew: RD \ \ \ \ \ \ \ | | Photos: | | A4/17, 18 Air Photos: BCB 91181 169 | |
| Channel Characteristics | | | | | | Bed Material | | | | | |
| <div> <div> <div>Av. Chan. Width (m): 1.0 Method Av. Chan. Width (m): GE</div> <div>Av. Wet. Width (m): 0.0 Method Av. Wet. Width (m): GE</div> <div>Av. Max. Rif. Depth (cm): 0 Av. Max. Riffle Depth (cm): GE</div> <div>Av. Max. Pool Depth (cm): 0 Av. Max. Pool Depth (cm): 0</div> <div>Gradient (%): 5.0 Method Gradient: CL</div> <div>% Pool: 0 % Riffle: 0 % Run: 0 % Other: 0 Method: GE</div> <div>% Side Channel: 0 Method Side Channel: GE</div> <div>% Debris Area: 0 Method Debris Area: GE</div> </div> <div>Specific Data</div> </div> | | | | | | <div> <div>% Fines (<2mm): 10 % Fines (<2mm): 10</div> <div>% Gravels: 40 Small (2-16mm): 20 Large (16-64mm): 20</div> <div>% Larges: 50 Small cobble (64-128mm): 50 Large cobble (128-256mm): 0 Boulder cobble (>256mm): 0</div> <div>% Bedrock: 0 % Bedrock: 0</div> <div>D90 (cm): 9 Compaction: Medium</div> </div> | | | | | |
| Cover | | | | | | Banks | | | | | |
| <div> <div>Cover Total % :</div> <div>Method Cover Total %:</div> <div>Dp Pool: L.O.D.: Boulder: In Veg.: Over Veg.: Cutbank:</div> <div>Crown Closure % : Method Crown Closure: Aspect : Method Aspect:</div> </div> | | | | | | <div> <div>Height (m): 1.2 % Unstable: 0</div> <div>Textures Fines: Yes Gravel: Yes Larges: No Bedrock: No</div> <div>Confinement: 2</div> <div>Valley: Chan. Ratio: 1</div> <div>Stage: Dry</div> <div>Flood Signs Ht(m): 0.3 Method Flood Signs: MS</div> <div>Braided: Y Method Braided: GE</div> <div>Bars (%): 100 Method Bars: GE</div> <div>pH: Method pH:</div> <div>O2 (ppm): Method Dissolved Oxygen:</div> <div>Water Temp. (°C): Method Temperature:</div> <div>Turb. (cm): Method Turbidity:</div> <div>Cond. (µmhos): Method Conductivity:</div> </div> | | | | | |
| Discharge | | | | | | | | | | | |
| <div> <div>Wetted Width (m): Method Wetted Width (m):</div> <div>Mean Depth (m): Method Mean Depth (m):</div> <div>Mean Velocity (m/s): Method Mean Velocity (m/s) VO</div> <div>Discharge (m3/s): 0.00 Method Discharge (m3/s):</div> </div> | | | | | | Specific Data | | | | | |
| Reach Symbol | | | | | | | | | | | |
| <div> <div>(Fish)</div> <div>NS</div> <div>1 A 5.0 1450</div> <div>(Width, Valley: Channel, Slope) (Bed Material)</div> </div> | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: LOLJUH C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-214-933-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Channel is dewatered. In the lower 100 m the channel is braided throughout a meadow; above 100 m, no defined channel is present.
- C2 No spawning potential present in L23. No fish observed at the confluence with the upper lake, and no fish were caught and no followers were observed during angling in the lake.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D15-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------------------|--------------------|--|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D15 | Access: | H |
| Watershed Code: | 460-6006-508-584-D15-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | TRIBUTARY LOCATED ~2000 m U/S FROM THE LOLIUH C. MOUTH. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 85.0 Method: HC |
| | | U.T.M.: | 9.6125 .60278 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/19/96 | Time: 16:00 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | B3/16 Air Photos: BCB 91181:173 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.7 | Method Av. Chan. Width (m): | T | 0.7 | 0.8 | 0.6 | 0.7 | 0.7 | 0.7 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.6 | 0.5 | 0.3 | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 12 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 13.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 50 | % Riffle: | 50 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total %: | 50 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 0 | L.O.D.: | 10 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 70 |
| Crown Closure %: | 10 | Method Crown Closure: | GE | Aspect: | SW | Method Aspect: | AE | Cutbank: | 20 |

Discharge

| | | | |
|----------------------|----------------------------|--------------------------|--|
| Wetted Width (m): | Method Wetted Width (m): | | |
| Mean Depth (m): | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| I C 13.0 | 8200 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 3 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | GE |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D15-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Gradient increases to 20% at the base of the gully which is located ~90 m u/s from the mouth. |
| C2 | Habitat structure is too small for fish use except for fry, but 8% gradient and small debris jams restrict fry to the lower section within the Denys floodplain. |
| C3 | D15 is classified as S4 habitat in the lower 90 m and S6 habitat u/s of 90 m. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-D15-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------|----------------------|------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D15.1 | Access: | II |
| Watershed Code: | 460-6006-508-584-D15-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~100 m U/S FROM D15.1 MOUTH. | Site No.: | 2 | Length surveyed (m): | 50.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6125 .60278 | Photos: | no photo Air Photos: BCB 91181:173 |
| Date: | 9/19/96 | Time: | 16:00 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 0.6 | 0.8 | 1.2 | 0.8 | 0.5 | 1.4 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.6 | 0.5 | 0.3 | | | |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 5 | Av. Max. Pool Depth (cm): | 3 | | | | | | |
| Gradient (%): | 15.0 | Method Gradient: | GE | | | | | | |
| % Pool: | 10 | % Riffle: | 90 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|
| Cover Total %: | 50 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 0 | L.O.D.: | 30 | Boulder: | 10 | In Veg.: | 10 | Over Veg.: | 30 |
| Crown Closure %: | 40 | Method Crown Closure: | GE | Aspect: | W | Method Aspect: | AE | Cutbank: | 20 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 15.0 | 1910 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 90 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 5 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 4 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.4 | % Unstable: | 15 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 1 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | 1 | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | GE |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D15-1-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Gradient increases to 20%+ at the base of gully, ~25 m u/s from D15 confluence. Possible fish use in the lower 25 m of D15.1. Tributary is classed as S6 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D17-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------------------|--------------------|--|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D17 | Access: | H |
| Watershed Code: | 460-6006-508-584-D17-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.0 Method: MW |
| Location: | TRIB. LOCATED 692 m U/S FROM D15 CONFLUENCE, SITE LOCATED ~10 m U/S FROM CONFLUENCE. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 20.0 Method: HC |
| Date: 9/24/96 | Time: 11:00 | Agency: C58 | Survey Crew: JHSSA \ \ \ \ \ | Fish Card: | N Field: Yes Historical: No |
| | | | | Photos: | B4/6 Air Photos: BCB 91181-173 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 0.4 | 0.5 | 1.0 | 1.0 | 1.6 | 1.4 |
| Av. Wet. Width (m): | 0.3 | Method Av. Wet. Width (m): | T | 0.2 | 0.4 | | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 31.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|---------|-----------------------|----------|-----------|----------|----------------|----|
| Cover Total % : | 0 | Method Cover Total %: | GE | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg: | Cutbank: | | |
| Crown Closure % : | 85 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 31.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 25 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 24 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.4 | % Unstable: | 10 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-1217-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 No fish habitat; slope >20% from mouth. Tributary classed as S6 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-336-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|--------------------|---|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D20 | Access: | II |
| Watershed Code: | 460-6006-508-584-336-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.2 Method: MW |
| Location: | TRIB. LOCATED 370 m U/S FROM DI9 CONFLUENCE, SITE LOCATED ~35 m U/S FROM MOUTH. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 270.0 Method: HC |
| Date: 9/24/96 | Time: 14:00 | U.T.M.: | 9.6128 .60293 | Fish Card: | N Field: Yes Historical: No |
| Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ \ \ \ | Photos: | B4/10 | Air Photos: | BCB 91181:173 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 1.5 | 0.9 | 1.4 | 1.5 | 0.7 | 1.0 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 1.0 | 0.6 | 1.4 | 0.6 | | |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 13.0 | Method Gradient: | CL | | | | | | |
| % Pool: 30 | % Riffle: 70 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|--|--|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 5 | L.O.D.: 15 | Boulder: 40 | In Veg.: 0 | Over Veg: 5 | Cutbank: 35 | | | | |
| Crown Closure % : | 60 | Method Crown Closure: | GE | Aspect: W | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 1 A 13.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 60 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-336-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 D20 is accessible to fish in the lower 270 m; above this, the gradient increases to 20% and is continuous.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D20-B -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------|--------------------|---|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D20B | Access: | II |
| Watershed Code: | 460-6006-508-584-D20-B -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | TRIB. LOCATED AT 90 DEGREE S-BEND IN DENYS C.; SITE LOCATED ~159 m U/S FROM MOUTH. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 244.0 Method: HC |
| Date: 9/24/96 | Time: 15:15 | U.T.M.: | 9.6127 .60294 | Fish Card: | N Field: Yes Historical: No |
| Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | B4/14 | Air Photos: | BCB 91181,194 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 1.4 | 1.6 | 0.9 | 0.8 | 1.0 | 1.6 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 1.4 | 1.3 | 0.7 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | |
| % Pool: 35 | % Riffle: 15 | % Run: 50 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 10 | L.O.D.: 10 | Boulder: 0 | In Veg.: 0 | Over Veg: 40 | Cutbank: 40 | | | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect: SW | Method Aspect: AE | | | | |

Discharge

| | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| I D 3.0 | F |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 15 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: No | |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.05 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D20-B -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 70 - 120 | J | | | | VO |

Obstructions

Comments

- C1Previously unmapped tributary.
- C2DV were observed ~159 m u/s from the mouth. Assume fish use throughout R1.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D20-B -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------------------|----------------------|---------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D20B | Access: | H |
| Watershed Code: | 460-6006-508-584-D20-B -000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.5 Method: MW |
| Location: | SITE LOCATED ~400 m U/S FROM MOUTH. | Site No.: | 2 | Length surveyed (m): | 271.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 9/24/96 | Time: 15:00 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | B4/13 Air Photos: BCB 91181:194 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6127 60294 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.5 | Method Av. Chan. Width (m): | T | 0.4 | 0.3 | 0.6 | 0.7 | 0.3 | 0.9 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.4 | 0.3 | 0.6 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 23.0 | Method Gradient: | CL | | | | | | |
| % Pool: 0 | % Riffle: 99 | % Run: 1 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | |
|-------------------|-----------|-----------------------|-------------------|
| Cover Total % : | 0 | Method Cover Total %: | GE |
| Dp Pool : 0 | L.O.D.: 0 | Boulder: 0 | In Veg.: 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE |
| | | Aspect : W | Method Aspect: AE |
| | | Over Veg: 0 | Cutbank: 0 |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.01 Method Discharge (m3/s) : |

Reach Symbol

| |
|--|
| (Fish) |
| NS |
| 1 D 23.0 5410 |
| (Width, Valley: Channel, Slope) (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 55 | % Fines (<2mm): | 55 |
| % Gravels: | 35 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 20 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-D20-B -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 R2 has a continuous gradient >20% and the channel is intermittent. No fish habitat in R2; fish use is up to the top of R1.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|----------------------|----------------------|------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D22 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-442-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.1 Method: MW |
| Location: | ~100 m U/S FROM MOUTH, JUST U/S FROM D22.1 CONFLUENCE | Site No.: | 1 | Length surveyed (m): | 450.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N |
| | | U.T.M.: | 9.6124 .60304 | Field: | Yes |
| Date: | 10/15/96 | Agency: | C58 | Historical: | No |
| Time: | 14.00 | Survey Crew: | SS\RD\ \ \ \ \ \ \ \ | Photos: | A13/15, 16 |
| | | | | Air Photos: | BCB 91181:193 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 3.1 | Method Av. Chan. Width (m): | T | 3.4 | 3.1 | 2.8 | 3.4 | 2.9 | 3.2 |
| Av. Wet. Width (m): | 3.0 | Method Av. Wet. Width (m): | T | 3.1 | 3.1 | 2.7 | 3.4 | 2.8 | |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 12 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 70 | % Run: | 10 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|-----------|----|----------------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 15 | L.O.D.: | 5 | Boulder: | 40 | In Veg.: | 0 |
| Crown Closure % : | 60 | Method Crown Closure: | GE | Aspect : | NE | Method Aspect: | AE |
| | | | | Over Veg: | 30 | Cutbank: | 10 |

Discharge

| | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | |
| Discharge (m3/s) : | 0.10 | Method Discharge (m3/s) : | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV |
| 3 B 7.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 75 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 35 |
| | | Boulder cobble (>256mm): | 15 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 27 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 2.1 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 3 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.7 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 50 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 71 - 123 | J | R | | | EL |

Obstructions

Comments

- C1 Electroshocked 53 m length of stream, 1 pass with no lower net. 1 of the DV recorded was visually observed as it was lost in the boulders.
- C2 Creek with moderate gradient and very limited potential spawning. Good BT habitat although only DV were caught at the sample site.
- C3 Lat/Lon of helicopter landing site: 54 24.62 127 16.24

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-D22-.1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|--------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D22.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-442-D22-.1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.1 Method: MW |
| Location: | ~50 m U/S FROM D22 - D22.1 CONFLUENCE. | Site No.: | 2 | Length surveyed (m): | 120.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/15/96 | Time: 14:30 | Agency: C58 | Survey Crew: SS\RD\ \ \ \ \ \ \ \ | Photos: | A13/17, 18 Air Photos: BCB 91181:193 |
| | | Map #: | 093L044 | | |
| | | U.T.M.: | 9.6124 .60304 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 2.9 | 1.9 | 1.8 | 1.5 | 1.6 | 1.5 |
| Av. Wet. Width (m): | 1.8 | Method Av. Wet. Width (m): | T | 2.7 | 1.8 | 1.7 | 1.5 | 1.6 | 1.5 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 24 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 25 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 15 |
| % Larges: | 65 | Small cobble (64-128mm): | 50 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 15 | Compaction: | Medium |

Cover

| | | | |
|----------------------|----|-----------------------|-------------------|
| Cover Total % : | 75 | Method Cover Total %: | GE |
| Dp Pool : 20 L.O.D.: | 5 | Boulder: 40 | In Veg.: 0 |
| Crown Closure % : | 10 | Method Crown Closure: | GE |
| | | Aspect : SE | Method Aspect: AE |
| | | Over Veg: 30 | Cutbank: 5 |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | 1 | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 70 | Method Conductivity: | CM |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.08 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|----------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 2 C 6.0 | 1270 |
| (Widthb, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-D22-1 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | X | 0.6 |

Comments

- C1 Electrofished ~57 m length of stream, 1 pass with no lower net. No fish were caught or observed.
- C2 Restricted access into creek due to 8% section for ~15 m, the slight drop at the trib. mouth, and the confined nature of the creek in this section of channel.
- C3 Small creek consisting of a series of log steps; suitable DV habitat is present.
- C4 D22.1 is suspected to be class S3 habitat in the lower 650 m of creek and is S6 habitat u/s of this point. Although no fish were caught, the lower 650 m contains suitable habitat and fish use is possible. Above 650 m, the gradient is too steep (20%+) to support fish and the 0.8 m debris jam at 647 m poses as a barrier to fish.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-442-D22-.1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------|----------------------|------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D22.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-442-D22-.1 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.7 Method: MW |
| Location: | UPPER MEADOW, ~1400 m U/S FROM MOUTH. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N |
| | | U.T.M.: | 9.6124 .60304 | Field: | Yes |
| Date: | 10/15/96 | Agency: | C58 | Historical: | No |
| Time: | 15:00 | Survey Crew: | SSURD \ \ \ \ \ \ \ \ | Photos: | A13/19, 20 |
| | | | | Air Photos: | BCB 91181.193 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.3 | Method Av. Chan. Width (m): | T | 1.5 | 1.2 | 1.5 | 1.5 | 1.2 | 1.0 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | 1.7 | 1.1 | 1.0 | 1.5 | 1.1 | 1.0 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 70 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total %: | 45 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 15 | L.O.D.: | 5 | Boulder: | 10 | In Veg.: | 0 | Over Veg: | 55 |
| Crown Closure %: | 10 | Method Crown Closure: | GE | Aspect: | SE | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.06 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 C 8.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|----|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 5 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.05 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.7 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 30 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-D22-.1 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1Electrofished 75 m length of stream, 1 pass with no lower net. No fish were caught or observed.
- C2Suitable fish habitat is present. Suspect R2 is inaccessible to fish due to the steep gradient and the debris jam barrier located in R1.
- C3Lat/Lon of helicopter landing site: 54 24.90 127 17.14

DFO/MoELP Stream Survey Form

27-Mar-96

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-418-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|----------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D22.2 | Access: | H |
| Watershed Code: | 460-6006-508-584-442-418-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~450 m U/S FROM MOUTH, JUST BELOW OLD EXPLORATION ROAD CROSSING. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Field: | Yes Historical: No |
| | | U.T.M.: | 9.6116 .60298 | Fish Card: | N |
| Date: 10/15/96 | Time: 14:15 | Agency: C58 | Survey Crew: DB\CP \ \ \ \ \ | Photos: | DB4/25 Air Photos: BCB 91181:193 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 2.3 | Method Av. Chan. Width (m): | T | 2.4 | 3.3 | 2.2 | 2.0 | 2.0 | 2.0 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.4 | 2.4 | 1.5 | 1.4 | 1.8 | 1.2 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | 10 | 16 | 10 | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 12 | 35 | 45 | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 5 | % Riffle: | 95 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 0 | L.O.D.: | 40 | Boulder: | 60 | In Veg.: | 0 |
| Crown Closure % : | 30 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE |
| | | Over Veg: | 0 | Cutbank: | 0 | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| 2 A 10.0 | 0370 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 35 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 25 |
| % Larges: | 65 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.8 | % Unstable: | 25 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 3 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 50 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-418-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 4 | 62 - 77 | J | R | | | EL |
| CHF | 2 | 36 - 37 | F | R | | | EL |

Obstructions

Comments

- C1 Electrofished 50 m length of stream, 1 pass with no lower net. DV were caught. The char fry caught were recorded as CHF (char fry) due to the inability to distinguish between DV and BT fry.
- C2 Air Temp: 0 C.
- C3 LOD stepping present in creek - important for trapping sediments. Sections of smaller gravels suitable for spawning were observed.
- C4 Unstable slumps were noted along D22.2.
- C5 Lat/Lon of helicopter landing site: 54 24.36 127 17.35

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-000-000-000-000-000-000

Header Information

| | | | | | | | | | | | |
|-----------------|--|-----------------|---------------|--------------------|-----|----------------------|--------------------|-------------|---------------|-------------|---------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D22 | Access: | 11 | | | | | | |
| Watershed Code: | 460-6006-508-584-442-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.5 | Method: | MW | | | | |
| Location: | ADJACENT TO SMALL MEADOW, ~1700 m U/S FROM MOUTH, ~550 m U/S FROM REACH BREAK. | Map #: | 093L044 | Site No.: | 5 | Length surveyed (m): | 100.0 | Method: | HC | | |
| | | U.T.M.: | 9.6124 .60304 | Fish Card: | N | Field: | Yes | Historical: | No | | |
| Date: | 10/15/96 | Time: | 15:00 | Agency: | C58 | Survey Crew: | DB\CP\ \ \ \ \ \ \ | Photos: | not available | Air Photos: | BCB 91181:193 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.2 | 0.9 | 1.0 | 1.1 | 0.9 | 0.8 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.7 | 0.9 | 1.0 | 1.1 | 0.9 | 0.8 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | 8 | 10 | 10 | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 9 | 30 | 30 | 25 | | | |
| Gradient (%): | 15.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 80 | % Run: | 10 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|----------|---|
| Cover Total %: | 70 | Method Cover Total %: | GE | | | | | | | | |
| Dp Pool: | 0 | L.O.D.: | 30 | Boulder: | 60 | In Veg.: | 0 | Over Veg: | 5 | Cutbank: | 5 |
| Crown Closure %: | 30 | Method Crown Closure: | GE | Aspect: | NE | Method Aspect: | AE | | | | |

Discharge

| | | | | | | | | | |
|----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s): | 0.03 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 1 A 15.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 25 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 15 |
| % Larges: | 65 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | Medium |

Banks

| | | | | | | | |
|----------------------|-----|--------------------------|----|---------|-----|----------|----|
| Height (m): | 0.4 | % Unstable: | 0 | | | | |
| Textures Fines: | Yes | Gravel: | No | Larges: | Yes | Bedrock: | No |
| Confinement: | 3 | | | | | | |
| Valley: Chan. Ratio: | 1 | | | | | | |
| Stage: | M | | | | | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS | | | | |
| Braided: | N | Method Braided: | GE | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | |
| pH: | 8.2 | Method pH: | PH | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | |
| Water Temp. (°C): | 1.5 | Method Temperature: | TC | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | |
| Cond. (µmhos): | 50 | Method Conductivity: | CM | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-442-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Air Temp: - 2 C. |
| C2 | Electrofished 75 m length of stream, 1 pass with no lower net. No fish were caught or observed. Fish distribution is to the top of R1 based on the steep nature of R2. |
| C3 | Heavy brush cover. Some LOD stepping is present. Steep, small creek. |
| C4 | Lat/Lon of helicopter landing site (~50 m from site, on top of bench): 54 24.07 127 17.30 |

DFO/MoELP Stream Survey Form

27-Mar-96

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-498-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D23 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-498-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~150 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6124 .60313 | Photos: | A13/21, 22 Air Photos: BC 7326:242 |
| Date: | 10/15/96 | Time: | 16:00 | Agency: | C58 |
| | | Survey Crew: | SSIRD \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 1.2 | 1.3 | 1.2 | 1.1 | 1.1 | 1.3 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | 1.1 | 1.3 | 1.2 | 1.0 | 1.1 | 1.3 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | 15 | 10 | 12 | | | |
| Av. Max. Pool Depth (cm): | 32 | Av. Max. Pool Depth (cm): | 12 | 35 | 30 | 30 | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 60 | % Run: | 25 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 30 | % Fines (<2mm): | 30 |
| % Gravels: | 60 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | Medium |

Cover

| | | | |
|------------------|----|-----------------------|----|
| Cover Total %: | 60 | Method Cover Total %: | GE |
| Dp Pool: | 10 | L.O.D.: | 25 |
| Boulder: | 5 | In Veg.: | 0 |
| Over Veg: | 50 | Cutbank: | 10 |
| Crown Closure %: | 15 | Method Crown Closure: | GE |
| Aspect: | SE | Method Aspect: | AE |

Banks

| | | | |
|----------------------|------|--------------------------|----|
| Height (m): | 2.3 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: | No |
| Larges: | No | Bedrock: | No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

Discharge

| | | | |
|----------------------|------|-----------------------------|----|
| Wetted Width (m): | | Method Wetted Width (m): | |
| Mean Depth (m): | | Method Mean Depth (m): | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO |
| Discharge (m3/s): | 0.03 | Method Discharge (m3/s): | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| I B 5.0 | 3610 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-498-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 3 | 59 - 120 | J | R | | | EL |
| CHF | 1 | 30 | F | R | | | EL |

Obstructions

Comments

- C1 Electrofished 22 m length of stream, 1 pass with no lower net. The char fry that was caught was recorded as CHF(char fry) due to the inability to distinguish between BT and DV fry.
- C2 Heavy debris within channel provides good cover. Suitable spawning gravels were noted in this stream section.
- C3 Lat/Lon of helicopter landing site: 54 25.14 127 16.42
- C4 Fish use extends to the top of R1; further u/s the gradient is steep (~18%) and continuous. Seepage D23.1 is accessible to fish in the lower 65 m; further u/s the gradient was ~15% and increasing - too steep for the size of the seepage to support fish.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-513-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------|----------------------|----------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D24 | Access: | FT |
| Watershed Code: | 460-6006-508-584-513-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~300 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6124 .60317 | Photos: | A14/3, 4 Air Photos: BC 7326:242 |
| Date: | 10/16/96 | Time: | 14:00 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|----------------------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.2 | 1.0 | 0.9 | 1.3 | 1.0 | 1.2 |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | 1.2 | 0.8 | 0.9 | 1.3 | 0.9 | |
| Av. Max. Pool Depth (cm): | 32 | Av. Max. Pool Depth (cm): | 11 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 60 | % Run: | 10 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 40 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 30 |
| % Larges: | 55 | Small cobble (64-128mm): | 35 |
| | | Large cobble (128-256mm): | 15 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 16 | Compaction: | Medium |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 75 | Method Cover Total %: | GE |
| Dp Pool : | 30 | L.O.D.: | 15 |
| Boulder: | 30 | In Veg.: | 0 |
| Over Veg: | 0 | Cutbank: | 25 |
| Crown Closure % : | 40 | Method Crown Closure: | GE |
| Aspect : | SE | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 1.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 2 | Method Bars: | GE |
| pH: | 7.7 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 70 | Method Conductivity: | CM |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.07 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 1 A 9.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-513-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Site was not sampled due to no nearby landing sites present. |
| C2 | Air Temp: - 1 C. |
| C3 | Moderate gradient creek with pockets of spawning habitat located in the lower gradient sections. |
| C4 | Abundant LOD and willow overstory cover. Several 0.3 m to 0.4 m high drops over debris were noted. |
| C5 | D24 is not accessible to fish due to the 2.5 m high drop over a bench at the mouth. R1 is suspected to be class S4 habitat due the possibility of residents in this section. R2 is classed as S6 habitat based on its steep gradient. |

DFO/MoELP Stream Survey Form

2-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-526-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|----------------------|------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D25 | Access: | H |
| Watershed Code: | 460-6006-508-584-526-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.5 Method: MW |
| Location: | ~300 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6124 .60317 | Photos: | A13/23, 24 Air Photos: BC 7326:242 |
| Date: 10/15/96 | Time: 17:00 | Agency: C58 | Survey Crew: RD\SS\ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.2 | 0.9 | 0.8 | 1.3 | 1.2 | 1.0 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.8 | 0.9 | 0.8 | 1.0 | | |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 19 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 60 | % Run: 20 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|------------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total %: | 75 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 15 | L.O.D.: 10 | Boulder: 50 | In Veg.: 5 | Over Veg: 10 | Cutbank: 10 | | | | |
| Crown Closure %: | 65 | Method Crown Closure: | GE | Aspect: NW | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|----------------------|----------------------------|--------------------------|--|--|--|--|--|--|--|
| Wetted Width (m): | Method Wetted Width (m): | | | | | | | | |
| Mean Depth (m): | Method Mean Depth (m): | | | | | | | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s): | 0.04 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | NF | |
| I A 9.0 | 1720 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 70 | Small (2-16mm): | 40 |
| | | Large (16-64mm): | 30 |
| % Larges: | 20 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-526-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 65 m length of stream, 1 pass with no lower net. No fish were caught. |
| C2 | Creek is only accessible in the lower 25 m of stream; further u/s, channel drops down a sidehill with ~30%+ gradient which is a barrier to fish. |
| C3 | Creek contains fish habitat but may be too small to support residents. Sections of good potential resident spawning were observed. |
| C4 | D25 is classed as S4 habitat in the lower 25 m of stream and S6 habitat in the u/s sections. |

27-Mar-97

Stream: DENYS C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-584-593-000-000-000-000-000-000

Header Information

| | | | | | |
|------------------------|--|------------------------|---------------------------------------|---------------------------|---|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D26 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-593-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | -50 m U/S FROM MOUTH. | Map #: | 093L044 | Site No.: | 1 Length surveyed (m): 110.0 Method: HC |
| | | U.T.M. : | 9.6130 .60334 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/16/96 | Time: 10:00 | Agency: C58 | Survey Crew: JHSS\ \ \ \ \ \ \ | Photos: | B11/17, 18 Air Photos: BC 7326:152 |

Channel Characteristics

| Channel Characteristics | | | | Specific Data | | | | | | |
|---------------------------|--------------|-----------------------------|----------------------|---------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 4.2 | Method | Av. Chan. Width (m): | T | 4.3 | 4.8 | 5.6 | 3.6 | 3.8 | 3.3 |
| Av. Wet. Width (m): | 2.3 | Method | Av. Wet. Width (m): | T | 1.9 | 1.3 | 3.6 | | | |
| Av. Max. Rif. Depth (cm): | 17 | Av. Max. Riffle Depth (cm): | MS | | 15 | 13 | 22 | | | |
| Av. Max. Pool Depth (cm): | 29 | Av. Max. Pool Depth (cm): | 17 | | 25 | 27 | 34 | | | |
| Gradient (%): | 15.0 | Method | Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 80 | % Run: 5 | % Other: 0 | | Method: GE | | | | | |
| % Side Channel: | 10-40 | Method | Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method | Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 70 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 10 | % Bedrock: | 10 |
| D90 (cm): | 34 | Compaction: | Medium |

Cover

| | | | | | | | |
|----------------------------|----|------------------------------|-------------------|---------------------|-----------------------|----|--|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | |
| Dp Pool: 20 L.O.D.: | 20 | Boulder: 40 | In Veg.: 0 | Over Veg: 15 | Cutbank: 5 | | |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: | AE | |

Banks

| | | | | | |
|-----------------------------|-----|---------------------------------|-------------------|-----------------|----|
| Height (m): | 0.7 | % Unstable: | 30 | | |
| Textures Fines: | No | Gravel: Yes | Larges: No | Bedrock: | No |
| Confinement: | 3 | | | | |
| Valley: Chan. Ratio: | 2 | | | | |
| Stage: | L | | | | |
| Flood Signs Ht(m): | 0.7 | Method Flood Signs: | | | MS |
| Braided: | Y | Method Braided: | | | GE |
| Bars (%): | 60 | Method Bars: | | | GE |
| pH: | 8.1 | Method pH: | | | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | | | |
| Water Temp. (°C): | 1.0 | Method Temperature: | | | TC |
| Turb. (cm): | 200 | Method Turbidity: | | | GE |
| Cond. (µmhos): | 80 | Method Conductivity: | | | CM |

Discharge

| Discharge | | Specific Data |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 4 B 15.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-593-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 4 | X | 0.1 |

Comments

- C1 The gradient recorded is an average for the whole reach: the lower section of stream had a gradient of 5%; a 28% gradient was recorded at 89 m and includes the section of stream with an impassable cascade and a 4 m high debris jam; the u/s section of R1 had a gradient of ~11%.
- C2 D26 is classed as S3 habitat up to the barrier (4 m high X) and S6 habitat u/s from this point.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-625-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------------|----------------------|------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D27 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-625-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.7 Method: MW |
| Location: | -400 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 700.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N |
| | | U.T.M.: | 9.6140 .60333 | Field: | Yes |
| Date: 10/16/96 | Time: 11:20 | Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | B11/21- 24 |
| | | | | Air Photos: | BC 7326,152 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 4.2 | Method Av. Chan. Width (m): | T | 4.5 | 4.9 | 4.4 | 3.8 | 3.8 | 4.1 |
| Av. Wet. Width (m): | 2.2 | Method Av. Wet. Width (m): | T | 2.3 | 1.9 | 2.4 | | | |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | 10 | 12 | 12 | | | |
| Av. Max. Pool Depth (cm): | 43 | Av. Max. Pool Depth (cm): | 11 | 40 | 40 | 50 | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 80 | % Run: 5 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 45 | Method Cover Total %: | GE | | | | |
| Dp Pool : 15 | L.O.D.: 20 | Boulder: 40 | In Veg.: 0 | Over Veg: 20 | Cutbank: 5 | | |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 4 C 7.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 75 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 28 | Compaction: | Medium |

Banks

| | | | |
|----------------------|------|--------------------------|-------------|
| Height (m): | 0.6 | % Unstable: | 10 |
| Textures Fines: | No | Gravel: No | Larges: Yes |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.35 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 45 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 80 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-625-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | X | 0.2 |

Comments

- C1 A series of debris jams with drops up to 0.8 m high were observed ~185 m u/s from the tributary mouth (Photo B11/23) and are restrictions to fish.
- C2 Air Temp: 0 C.
- C3 R2 begins ~700 m u/s from the mouth. ~719 - 900 m u/s from the mouth, continuous debris jams/cascades are present and the gradient is ~13 - 19% (Photo B11/24). Fish habitat ends at 800 m.

DFO/MoELP Stream Survey Form

Z"-Mur-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-640-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|--------------------|---|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D28 | Access: | 11 |
| Watershed Code: | 460-6006-508-584-640-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | TRIB. LOCATED ~1484 m U/S FROM D27 CONFLUENCE, SITE LOCATED ~100 m U/S FROM D28 MOUTH. | Map #: | 093L044 | Site No.: | 1 Length surveyed (m): 200.0 Method: HC |
| | | U.T.M.: | 9.615 3.60334 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/15/96 | Time: 13:00 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | Photos: | not available Air Photos: BC 7326:153 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 3.5 | Method Av. Chan. Width (m): | T | 4.5 | 3.6 | 2.6 | 3.7 | 3.4 | 3.1 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 17.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 30 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 10 | L.O.D.: | 35 | Boulder: | 45 | In Veg.: | 0 | Over Veg: | 5 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | S | Method Aspect: | AE | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.00 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 4 A 17.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|-----|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 80 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 24 | Compaction: | Low |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.0 | % Unstable: | 20 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | Dry | | |
| Flood Signs H(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 100 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-640-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.2 |

Comments

- C1 Gradient is 22% at the confluence for 10 m and then decreases to ~13%. Stream is intermittent with large amounts of instream LOD. Creek has a high potential to move debris during peak flows.
- C2 ~150 m w/s from the mouth a debris jam ~1.2 m high was observed; the dewatered channel made it difficult to judge the severity of the drop and whether it posed as a restriction or a barrier to fish. In the same section (~150 m w/s from the mouth), the gradient steepened to ~24% for >50m; based on this gradient and the 1.2 m high drop, potential fish habitat ends at 150 m.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-723-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|---------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D29 | Access: | H |
| Watershed Code: | 460-6006-508-584-723-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.6 Method: MW |
| Location: | ~100 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6161 .60335 | Photos: | not available Air Photos: BC 7326:133 |
| Date: 10/16/96 | Time: 14:45 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 6.2 | Method Av. Chan. Width (m): | T | 7.2 | 6.7 | 6.9 | 4.8 | 5.7 | 5.9 |
| Av. Wet. Width (m): | 2.2 | Method Av. Wet. Width (m): | T | 2.2 | 1.8 | 2.6 | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | 7 | 10 | 12 | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 10 | 20 | 20 | 20 | | | |
| Gradient (%): | 21.0 | Method Gradient: | CL | | | | | | |
| % Pool: 5 | % Riffle: 95 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|---------|-----------------------|----------|-------------|----------------|----|--|
| Cover Total % : | 0 | Method Cover Total %: | GE | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg: | Cutbank: | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: | AE | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 6 A 21.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 70 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 35 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.6 | % Unstable: | 10 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 45 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 50 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-723-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 No fish access and no fish habitat present due to steep gradient (continuous >20%).
- C2 Air Temp: 3 C.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-741-000-000-000-000-000-000

| Header Information | | | | | | | | | |
|--|--|--------------------------------|--|--------------|---|------------------------------|--|-----------------------|--|
| Stream Name: DENYS C. TRIBUTARY | | Stream "Local": D30 | | Access: | | H | | | |
| Watershed Code: 460-6006-508-584-741-000-000-000-000-000-000 | | | | Reach No.: 1 | | Reach Length (km): 0.1 | | Method: MW | |
| Location: ~40 m U/S FROM THE MOUTH. | | Map #: 093L044 | | Site No.: 1 | | Length surveyed (m): 120.0 | | Method: HC | |
| | | U.T.M.: 9.6164 .60336 | | Fish Card: N | | Field: Yes | | Historical: No | |
| Date: 10/15/96 | | Time: 15:30 | | Agency: C58 | | Survey Crew: JH\SS \ \ \ \ \ | | Photos: not available | |
| | | | | | | Air Photos: | | BC 7326:154 | |
| Channel Characteristics | | | | | Bed Material | | | | |
| | | | | | Specific Data | | | | |
| Av. Chan. Width (m): 2.6 | | Method Av. Chan. Width (m): T | | 2.2 | | 2.1 | | 2.0 | |
| Av. Wet. Width (m): 2.2 | | Method Av. Wet. Width (m): T | | 2.7 | | 1.7 | | 2.0 | |
| Av. Max. Rif. Depth (cm): 12 | | Av. Max. Riffle Depth (cm): MS | | 10 | | 15 | | 10 | |
| Av. Max. Pool Depth (cm): 38 | | Av. Max. Pool Depth (cm): 12 | | 50 | | 25 | | 40 | |
| Gradient (%): 10.0 | | Method Gradient: CL | | | | | | | |
| % Pool: 40 | | % Riffle: 60 | | % Run: 0 | | % Other: 0 | | Method: GE | |
| % Side Channel: 0 | | Method Side Channel: GE | | | | | | | |
| % Debris Area: >40 | | Method Debris Area: GE | | | | | | | |
| Cover | | | | | Banks | | | | |
| Cover Total % : 40 | | | | | Method Cover Total %: GE | | | | |
| Dp Pool : 25 L.O.D.: 30 | | | | | Boulder: 25 In Veg.: 0 Over Veg: 5 Cutbank: 15 | | | | |
| Crown Closure % : 55 | | | | | Method Crown Closure: GE Aspect : S Method Aspect: AE | | | | |
| Discharge | | | | | Specific Data | | | | |
| Wetted Width (m) : Method Wetted Width (m) : | | | | | | | | | |
| Mean Depth (m) : Method Mean Depth (m) : | | | | | | | | | |
| Mean Velocity (m/s) : Method Mean Velocity (m/s) VO | | | | | | | | | |
| Discharge (m3/s) : 0.04 | | | | | Method Discharge (m3/s) : | | | | |
| Reach Symbol | | | | | | | | | |
| (Fish) | | | | | | | | | |
| (DV) | | | | | | | | | |
| 3 B 10.0 | | | | | 1360 | | | | |
| (Width, Valley: Channel, Slope) | | | | | (Bed Material) | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-741-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.2 |

Comments

- C1 Air Temp: 3 C.
- C2 Site contains LOD stepping with pools that provide good cover.
- C3 Upper extent of fish is ~121 m - the top of R1; w/s in R2, gradient is ~16 - 20% and numerous debris/rock jams with up to 1 m high drops present.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-786-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|---------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D33 | Access: | II |
| Watershed Code: | 460-6006-508-584-786-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.5 Method: MW |
| Location: | ~100 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L045 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6173 .60339 | Photos: | not available Air Photos: BC 7326:155 |
| Date: | 10/22/96 | Time: | 14:00 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.7 | Method Av. Chan. Width (m): | T | 2.6 | 2.8 | 2.6 | 2.3 | 2.9 | 3.0 |
| Av. Wet. Width (m): | 1.9 | Method Av. Wet. Width (m): | T | 2.4 | 1.4 | 1.9 | | | |
| Av. Max. Rif. Depth (cm): | 11 | Av. Max. Riffle Depth (cm): | MS | 12 | 10 | 12 | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 11 | 33 | 35 | 36 | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 35 | % Riffle: | 65 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 35 | L.O.D.: | 10 | Boulder: | 45 | In Veg.: | 0 | Over Veg: | 5 |
| Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect : | NW | Method Aspect: | AE | Cutbank: | 5 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 3 B 10.0 | 1271 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 70 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 5 | % Bedrock: | 5 |
| D90 (cm): | 43 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.6 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: | No |
| Confinement: | 3 | Larges: | Yes |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 40 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-786-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1

Air Temp: 1.5 C.

C2

Fish use is in the lower 200 m of stream; further u/s the gradient is a continuous 20% which is too steep for fish access or fish use to occur.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-787-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|---------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D34 | Access: | H |
| Watershed Code: | 460-6006-508-584-787-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.4 Method: MW |
| Location: | ~100 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/22/96 | Time: 10:30 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | not available Air Photos: BC 7326:155 |
| | | Map #: | 093L045 | | |
| | | U.T.M.: | 9.6173 60339 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.8 | Method Av. Chan. Width (m): | T | 1.8 | 1.4 | 2.4 | 1.8 | 1.5 | 1.7 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.6 | 0.8 | 1.6 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | 12 | 8 | 8 | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 9 | 33 | 35 | 22 | | | |
| Gradient (%): | 14.0 | Method Gradient: | CL | | | | | | |
| % Pool: 30 | % Riffle: 70 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 80 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 35 | Compaction: | Medium |

Cover

| | | | |
|------------------------|------------------------|-----------------------|-------------------|
| Cover Total %: | 30 | Method Cover Total %: | GE |
| Dp Pool: 30 L.O.D.: 10 | Boulder: 40 In Veg.: 0 | Over Veg: 10 | Cutbank: 10 |
| Crown Closure %: | 40 | Method Crown Closure: | GE |
| | | Aspect: SW | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | | Method Bars: | |
| pH: | 8.5 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 40 | Method Conductivity: | CM |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.03 | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 2 B 14.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-787-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Air Temp: 1.5 C.

C2 Unable to walk to the distribution limit of D34; assume fish use to ~180 m, the beginning of continuous 20%+ gradient based on the contour map (not ground surveyed to this point).

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: DENYS C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-584-849-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|---------------------------------------|
| Stream Name: | DENYS C. TRIBUTARY | Stream "Local": | D36 | Access: | H |
| Watershed Code: | 460-6006-508-584-849-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.8 Method: MW |
| Location: | -80 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L045 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6185 .60346 | Photos: | not available Air Photos: BC 7326:156 |
| Date: 10/15/96 | Time: 17:00 | Agency: C58 | Survey Crew: DB\CP \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 3.5 | 2.1 | 1.3 | 1.4 | 1.6 | 1.8 |
| Av. Wet. Width (m): | 1.8 | Method Av. Wet. Width (m): | T | 3.0 | 2.1 | 1.3 | 1.4 | 1.6 | 1.2 |
| Av. Max. Rif. Depth (cm): | 17 | Av. Max. Riffle Depth (cm): | MS | 10 | 20 | 20 | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 17 | 25 | 30 | 30 | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total %: | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool: 0 | L.O.D.: 0 | Boulder: 75 | In Veg.: 0 | Over Veg: 10 | Cutbank: 15 | | |
| Crown Closure %: | 25 | Method Crown Closure: | GE | Aspect: SW | Method Aspect: AE | | |

Discharge

| | | | |
|----------------------|----------------------------|--------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m): | Method Wetted Width (m): | | |
| Mean Depth (m): | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s): | 0.06 | Method Discharge (m3/s): | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 2 C 6.0 | 0280 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 25 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 15 |
| % Larges: | 75 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 25 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|-------------------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.25 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1

Electrofished 68 m length of stream, 1 pass with no lower net. No fish were caught. Habitat is suitable for fish. This sampling confirmed that upper Denys C. is barren (i.e. u/s from 3.5 m high impassable falls located on mainstem Denys C. just u/s from D33 confluence).
- C2

Collects seepage along left side of valley through here.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -33 -000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|--|--|--|--|-----------------|--|--------------------------------|--|-------------|--|---------------|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH33 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-TH -33 -000-000-000-000-000-000 | | Map #: | | 093L034 | | Reach No.: | | 1 | |
| Location: | | ~100 m U/S FROM THE MOUTH. | | U.T.M. : | | 9.6077 .60252 | | Site No.: | | 1 | |
| Date: 9/25/96 | | Time: 10:00 | | Agency: C58 | | Survey Crew: RD\CP \ \ \ \ \ \ | | Fish Card: | | N | |
| | | | | | | | | Photos: | | A6/12, 13 | |
| | | | | | | | | Air Photos: | | BCB 91181:058 | |
| Channel Characteristics | | | | | | Bed Material | | | | | |
| | | | | | | | | | | | |
| <div> <div> <div>Av. Chan. Width (m):</div> <div>2.5</div> </div> <div> <div>Method Av. Chan. Width (m):</div> <div>T</div> </div> </div> <div> <div>Av. Wet. Width (m):</div> <div>0.3</div> </div> <div> <div>Method Av. Wet. Width (m):</div> <div>T</div> </div> <div> <div>Av. Max. Rif. Depth (cm):</div> <div>3</div> </div> <div> <div>Av. Max. Riffle Depth (cm):</div> <div>MS</div> </div> <div> <div>Av. Max. Pool Depth (cm):</div> <div>10</div> </div> <div> <div>Av. Max. Pool Depth (cm):</div> <div>3</div> </div> <div> <div>Gradient (%):</div> <div>28.0</div> </div> <div> <div>Method Gradient:</div> <div>CL</div> </div> <div> <div>% Pool: 10</div> <div>% Riffle: 90</div> <div>% Run: 0</div> <div>% Other: 0</div> <div>Method: GE</div> </div> <div> <div>% Side Channel:</div> <div></div> <div>Method Side Channel:</div> <div>GE</div> </div> <div> <div>% Debris Area:</div> <div>40</div> <div>Method Debris Area:</div> <div>GE</div> </div> | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH-33-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Dynamic, unstable creek. Abundant debris is present within the channel; tributary has a high potential to move debris. |
| C2 | Th33 flows into a Thautil R. flood channel from a steep hillside. Tributary is very steep; no fish access or fish use. |
| C3 | An unmapped tributary (Th33A) was observed ~170 m d/s from the Th33 confluence; trib. enters the mainstem Thautil R. through a 30 m wide unstable slump (see map). The channel is small (~0.3 m wide) and dewatered. During high flow periods suspect channel has saturated the fine textured soils causing bank failure and slump formation. Channel is not defined above the slump and there is no fish use. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-634-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH35 | Access: | FI |
| Watershed Code: | 460-6006-508-634-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | -80 m U/S FROM THE MAINSTEM CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 80.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6074 60257 | Photos: | A6/14, 15 Air Photos: BCB 91181.058 |
| Date: | 9/25/96 | Time: | 12:00 | Agency: | C58 |
| | | Survey Crew: | RD/CP \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 1.1 | 0.9 | 0.3 | 0.6 | 0.9 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 3 | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | |
| % Pool: | 10 | % Riffle: | 70 | % Run: | 20 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total %: | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 20 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 30 |
| Crown Closure %: | | Method Crown Closure: | | Aspect: | SE | Method Aspect: | AE | Cutbank: | 50 |

Discharge

| | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | |
| Discharge (m3/s): | 0.02 | Method Discharge (m3/s): | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 C 3.0 | 2800 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 80 | Small (2-16mm): | 50 |
| | | Large (16-64mm): | 30 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 4 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 4 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-634-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | F | 0.0 |

Comments

- C1 Tributary drops over ~1 m high bench at the mouth; impassable to fish. Resident habitat is present in the lower 80 m of channel but fish use is not likely due to the small size of the creek. ~90 m u/s from the mouth, the creek forks and the gradient in each fork is too steep (15 - 30%) to support fish; classed as S6 habitat.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-659-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH38 | Access: | FT |
| Watershed Code: | 460-6006-508-659-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~80 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 120.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6074 60264 | Photos: | A6/17, 18 Air Photos: BCB 91181:177 |
| Date: | 9/25/96 | Time: | 12:30 | Agency: | C58 |
| | | Survey Crew: | RD\CP \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | |
|---------------------------|------|-----------------------------|----|---------|-----|----------|-----|
| Av. Chan. Width (m): | 1.8 | Method Av. Chan. Width (m): | T | 1.7 | 2.5 | 1.6 | 1.5 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 |
| | | | | Method: | GE | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 45 | Small (2-16mm): | 35 |
| | | Large (16-64mm): | 10 |
| % Larges: | 45 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | High |

Cover

| | | | |
|-------------------|---------|-----------------------|----------|
| Cover Total % : | | Method Cover Total %: | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: |
| | | Over Veg: | Cutbank: |
| Crown Closure % : | 70 | Method Crown Closure: | GE |
| | | Aspect : | NE |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 4.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | Dry | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 100 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|----------------------|------|----------------------------|----|
| Wetted Width (m): | | Method Wetted Width (m): | |
| Mean Depth (m): | | Method Mean Depth (m): | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.00 | Method Discharge (m3/s): | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 2 A 10.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mur-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-659-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Tributary is dewatered above 40 m and a trickle flow at the mouth. |
| C2 | Lower 30 m of creek has a gradient of ~35%; not accessible to fish. ~30 - 60 m u/s, the gradient decreases to <8% and water enters the channel over ~4 m high bank from a shallow swampy lowland. Above 60 m from the mouth, gradient is 8 -12%. |
| C3 | Assume no fish habitat present, but suggest the upper sections to be flown to look for possible resident use. |
| C4 | Well-used moose trails were observed throughout swampy lowland area. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-680-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH39 | Access: | FT |
| Watershed Code: | 460-6006-508-680-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 3.3 Method: MW |
| Location: | -300 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6073 .60272 | Photos: | A6/19, 20 Air Photos: BCB 91181:177 |
| Date: | 9/25/96 | Time: | 13:00 | Agency: | C58 |
| | | Survey Crew: | RD/CP \ \ \ \ \ | | |

Channel Characteristics

| | | | | | |
|---------------------------|------|-----------------------------|----|---------------|---------------------|
| Av. Chan. Width (m): | 5.6 | Method Av. Chan. Width (m): | T | Specific Data | 5.4 5.0 7.2 4.8 5.7 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 7 | | |
| Gradient (%): | 15.0 | Method Gradient: | CL | | |
| % Pool: | 10 | % Riffle: | 80 | % Run: | 10 |
| % Side Channel: | 0-10 | % Other: | 0 | Method: | GE |
| % Debris Area: | 25 | Method Side Channel: | GE | | |
| | | Method Debris Area: | GE | | |

Cover

| | | | | | |
|-------------------|----|-----------------------|----|----------------|----|
| Cover Total % : | 80 | Method Cover Total %: | GE | | |
| Dp Pool : | 10 | L.O.D.: | 20 | Boulder: | 70 |
| Crown Closure % : | | In Veg.: | 0 | Over Veg.: | 0 |
| | | Method Crown Closure: | | Cutbank: | 0 |
| | | Aspect : | W | Method Aspect: | AE |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | Specific Data |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.07 | Method Discharge (m3/s): |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 6 A 15.0 | 0190 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 90 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 60 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 34 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 3.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 70 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | | Method Temperature: | |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-680-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Very confined and steep creek; accessible to fish up to 27 m. Sections in the lower 300 m of stream have gradients of ~20%. No fish habitat present; bed material consists primarily of boulder/cobble.
- C2 An unstable slump was observed on river right ~200 m w/s from the mouth.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -41 -000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|--|--|---------------------------|--|---|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH41 | | Access: | | F1 | |
| Watershed Code: | | 460-6006-508-TH -41 -000-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 0.7 Method: MW | |
| Location: | | ~30 m U/S FROM THE MOUTH. | | Map #: | | 093L034 | | Site No.: | | 1 Length surveyed (m): 300.0 Method: HC | |
| | | | | U.T.M.: | | 9.6071 .60275 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 9/25/96 | | Time: 14:40 | | Agency: C58 | | Survey Crew: RD/CP \ \ \ \ \ \ \ | | Photos: | | A6/21, 22 Air Photos: BCB 91181:177 | |
| Channel Characteristics | | | | | | Bed Material | | | | | |
| | | | | | | Specific Data | | | | | |
| Av. Chan. Width (m): | | 0.6 Method Av. Chan. Width (m): | | T | | 0.3 0.5 0.8 0.7 0.5 | | % Fines (<2mm): | | 80 % Fines (<2mm): 80 | |
| Av. Wet. Width (m): | | 0.6 Method Av. Wet. Width (m): | | T | | 0.3 0.5 0.8 0.7 0.5 | | % Gravels: | | 20 Small (2-16mm): 20 | |
| Av. Max. Rif. Depth (cm): | | 5 Av. Max. Riffle Depth (cm): | | MS | | | | Large (16-64mm): | | 0 | |
| Av. Max. Pool Depth (cm): | | 20 Av. Max. Pool Depth (cm): | | 5 | | | | % Larges: | | 0 Small cobble (64-128mm): 0 | |
| Gradient (%): | | 2.0 Method Gradient: | | CL | | | | Large cobble (128-256mm): | | 0 | |
| % Pool: 10 | | % Riffle: 10 | | % Run: 80 | | % Other: 0 Method: GE | | Boulder cobble (>256mm): | | 0 | |
| % Side Channel: | | 0-10 Method Side Channel: | | GE | | | | % Bedrock: | | 0 % Bedrock: 0 | |
| % Debris Area: | | 30 Method Debris Area: | | GE | | | | D90 (cm): | | 1 Compaction: High | |
| Cover | | | | | | Banks | | | | | |
| Cover Total % : | | 60 Method Cover Total %: | | GE | | | | Height (m): | | 0.5 % Unstable: 0 | |
| Dp Pool: 0 L.O.D.: | | 80 Boulder: 0 In Veg.: | | 5 Over Veg: 5 Cutbank: | | 10 | | Textures Fines: | | Yes Gravel: No Larges: No Bedrock: No | |
| Crown Closure % : | | 70 Method Crown Closure: | | GE Aspect: E Method Aspect: | | AE | | Confinement: | | 5 | |
| Discharge | | | | | | | | | | | |
| | | | | | | Specific Data | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Valley: Chan. Ratio: | | 4 | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Stage: | | M | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | Flood Signs Ht(m): | | 0.2 Method Flood Signs: MS | |
| Discharge (m3/s) : | | 0.01 Method Discharge (m3/s) : | | | | | | Braided: | | N Method Braided: GE | |
| Reach Symbol | | | | | | | | | | | |
| | | | | | | (Fish) | | | | | |
| | | | | | | NS | | | | | |
| | | | | | | I D 2.0 8200 | | | | | |
| | | | | | | (Width, Valley: Channel, Slope) (Bed Material) | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -41 -000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | No defined channel in sections. Creek is small, moss covered and intermittent. Areas of grassy swamp line the seepage channel in sections. No channel is present above the base of the hill. |
| C2 | Seepage channel from Th41 joins Th40, ~50 m from the confluence with the mainstem Thautil R. Th40 comes down the hillside; discharge is a trickle flow, channel width is ~15 cm, and the gradient is too steep (~50%) for fish access. |
| C3 | Lower section of Th41 which flows parallel to the mainstem Thautil R. along the base of the hill is classed as a 250 m long FSZ (see map); suspect area may be used during high flow events. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH-45 -000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | |
|---------------------------|---|---|------|-----------------------------|--|------------------------------------|--|---------------------------|--|--|---|------|------|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH45 | | Access: | | F1 | | | |
| Watershed Code: | | 460-6006-508-TH-45 -000-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 0.5 Method: MW | | | |
| Location: | | ~30 m U/S FROM THE MOUTH. | | Map #: | | 093L034 | | Site No.: | | 1 Length surveyed (m): 30.0 Method: HC | | | |
| | | | | U.T.M.: | | 9.6071 .60285 | | Fish Card: | | N Field: Yes Historical: No | | | |
| Date: 9/25/96 | | Time: 15:30 | | Agency: C58 | | Survey Crew: RD/CP \ \ \ \ \ \ \ \ | | Photos: | | A7/4 Air Photos: BCB 91181:177 | | | |
| Channel Characteristics | | | | | Bed Material | | | | | | | | |
| | | | | | Specific Data | | | | | | | | |
| Av. Chan. Width (m): | | 1.0 | | Method Av. Chan. Width (m): | | GE | | % Fines (<2mm): | | 10 | | | |
| Av. Wet. Width (m): | | 0.2 | | Method Av. Wet. Width (m): | | GE | | % Gravels: | | 60 | | | |
| Av. Max. Rif. Depth (cm): | | 1 | | Av. Max. Riffle Depth (cm): | | | | Small (2-16mm): | | 20 | | | |
| Av. Max. Pool Depth (cm): | | | | Av. Max. Pool Depth (cm): | | 1 | | Large (16-64mm): | | 40 | | | |
| Gradient (%): | | 60.0 | | Method Gradient: | | CL | | % Larges: | | 30 | | | |
| % Pool: | | 0 | | % Riffle: | | 99 | | Small cobble (64-128mm): | | 30 | | | |
| % Side Channel: | | 0 | | % Run: | | 1 | | Large cobble (128-256mm): | | 0 | | | |
| % Debris Area: | | 0 | | % Other: | | 0 | | Boulder cobble (>256mm): | | 0 | | | |
| | | | | Method: | | GE | | % Bedrock: | | 0 | | | |
| | | | | | | | | D90 (cm): | | 12 | | | |
| | | | | | | | | Compaction: | | High | | | |
| Cover | | | | | Banks | | | | | | | | |
| Cover Total % : | | 0 | | Method Cover Total %: | | GE | | Height (m): | | 1.0 | | | |
| Dp Pool : | | L.O.D.: | | Boulder: | | In Veg.: | | Textures Fines: | | Yes | | | |
| Crown Closure % : | | 5 | | Method Crown Closure: | | GE | | Gravel: Yes | | Larges: No | | | |
| | | | | Aspect : | | W | | Bedrock: | | No | | | |
| | | | | Method Aspect: | | AE | | Confinement: | | 3 | | | |
| | | | | | | | | Valley: Chan. Ratio: | | 1 | | | |
| | | | | | | | | Stage: | | 1. | | | |
| | | | | | | | | Flood Signs Ht(m): | | 0.1 | | | |
| | | | | | | | | Method Flood Signs: | | MS | | | |
| | | | | | | | | Braided: | | N | | | |
| | | | | | | | | Method Braided: | | GE | | | |
| | | | | | | | | Bars (%): | | 20 | | | |
| | | | | | | | | Method Bars: | | GE | | | |
| | | | | | | | | pH: | | | | | |
| | | | | | | | | Method pH: | | | | | |
| | | | | | | | | O2 (ppm): | | | | | |
| | | | | | | | | Method Dissolved Oxygen: | | | | | |
| | | | | | | | | Water Temp. (°C): | | 4.5 | | | |
| | | | | | | | | Method Temperature: | | TC | | | |
| | | | | | | | | Turb. (cm): | | 200 | | | |
| | | | | | | | | Method Turbidity: | | GE | | | |
| | | | | | | | | Cond. (µmhos): | | | | | |
| | | | | | | | | Method Conductivity: | | | | | |
| Discharge | | | | | Reach Symbol | | | | | | | | |
| | | | | | Specific Data | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | | | | | | |
| Discharge (m3/s) : | | 0.01 | | Method Discharge (m3/s) : | | | | | | | | | |
| | | | | | (Fish) | | | | | | | | |
| | | | | | NS | | | | | | | | |
| | | | | | <table border="1"> <tr> <td>I</td> <td>A</td> <td>60.0</td> <td>1630</td> </tr> </table> | | | | | I | A | 60.0 | 1630 |
| I | A | 60.0 | 1630 | | | | | | | | | | |
| | | | | | (Width, Valley: Channel, Slope) (Bed Material) | | | | | | | | |

DFO/MoELP Stream Survey Form

2-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH-45-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

C1 Very small seepage trickle on a steep sideslope. No fish use is possible.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|--------------------|---|
| Stream Name: | STARR C. | Stream "Local": | STARR C. (TH46) | Access: | FT |
| Watershed Code: | 460-6006-508-722-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 10.5 Method: MW |
| Location: | ~300 m U/S FROM THE TOP OF THE CANYON AND THE REACH BREAK. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 380.0 Method: HC |
| | | U.T.M.: | 9.6071 .60286 | Fish Card: | N Field: Yes Historical: No |
| Date: 9/25/96 | Time: 17:14 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | Photos: | A7/5 Air Photos: BCB 91181:177 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|------|------|------|
| Av. Chan. Width (m): | 76.4 | Method Av. Chan. Width (m): | T | 95.0 | 90.0 | 62.0 | 63.0 | 72.0 |
| Av. Wet. Width (m): | 8.0 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 15 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 150 | Av. Max. Pool Depth (cm): | 15 | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | |
| % Pool: 10 | % Riffle: 50 | % Run: 40 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 20 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 25 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 70 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 35 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | High |

Cover

| | | | |
|------------------------|-------------|-----------------------|---------------------------------|
| Cover Total % : | 80 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: 10 | Boulder: 80 | In Veg.: 0 | Over Veg: 0 Cutbank: 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE Aspect: SE Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 85 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.85 | Method Discharge (m3/s): |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| SST DV BT (MW) | |
| 76 B 1.5 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SP | | | F | R | | | VO |

Obstructions

Comments

- C1 This site was not sampled; fry were observed along the margins of the creek and numerous tadpoles were observed in lower tributary St1. An index site is located further u/s; SST, BT and DV were caught at this site and are assumed to be present throughout lower Starr C.
- C2 Very wide flood channel with LOD and debris deposited throughout the channel. Creek has a high potential to transport debris.
- C3 Very few pools observed in this section; consists primarily of riffle.
- C4 Easy fish access throughout lower Starr C. and Thautil R. canyons. (Only 1 small chute was observed.)
- C5 Tributaries St3, St4, St6, St11, St12, St15, St16, St24, and St25 had undefined channels with no potential fish habitat, based on the Starr C. ground survey. Tributary St21 was not observed.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|-------------|-------------|
| Stream Name: | STARR C. | Stream "Local": | STARR C. (TH46) | Access: | FT |
| Watershed Code: | 460-6006-508-722-000-000-000-000-000-000-000 | Map #: | 093L043 | Reach No.: | 3 |
| Location: | -500 m U/S FROM THE REACH BREAK. | U.T.M.: | 9.6071 60286 | Site No.: | 2 |
| Date: | 10/7/96 | Agency: | C58 | Fish Card: | N |
| Time: | 12:00 | Survey Crew: | RD\CP \ \ \ \ \ | Photos: | A11/1, 2 |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Air Photos: | BC 7326:254 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|---------------|------|----------|------|------------|------|
| Av. Chan. Width (m): | 16.5 | Method Av. Chan. Width (m): | T | Specific Data | | | | | |
| Av. Wet. Width (m): | 11.9 | Method Av. Wet. Width (m): | T | 24.1 | 14.1 | 14.0 | 16.6 | 15.8 | 14.2 |
| Av. Max. Rif. Depth (cm): | 18 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 60 | Av. Max. Pool Depth (cm): | 18 | | | | | | |
| Gradient (%): | 3.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 60 | % Run: | 30 | % Other: | 0 | Method: GE | |
| % Side Channel: | 10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 15 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|------------------|----|-----------------------|----|------------|----|----------------|----|
| Cover Total %: | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool: | 10 | L.O.D.: | 10 | Boulder: | 75 | In Veg.: | 0 |
| Crown Closure %: | | Method Crown Closure: | | Over Veg.: | 0 | Cutbank: | 5 |
| | | | | Aspect: | E | Method Aspect: | AE |

Discharge

| | | | | | |
|----------------------|------|-----------------------------|----|---------------|--|
| Wetted Width (m): | | Method Wetted Width (m): | | Specific Data | |
| Mean Depth (m): | | Method Mean Depth (m): | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | |
| Discharge (m3/s): | 1.10 | Method Discharge (m3/s): | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 17 B 4.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 85 | Small cobble (64-128mm): | 15 |
| | | Large cobble (128-256mm): | 35 |
| | | Boulder cobble (>256mm): | 35 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 160 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1. | | |
| Flood Signs Hit(m): | 1.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.7 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 68 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | X | 0.7 |
| 1 | | C | 0.7 |
| 3 | | F | 0.7 |
| 1 | | C | 0.8 |
| 1 | | C | 1.1 |
| 2 | | F | 1.3 |
| 3 | | F | 1.5 |
| 2 | | F | 1.5 |
| 4 | | F | 1.6 |
| 1 | | C | 1.7 |
| 5 | | F | 3.0 |
| 3 | | F | 3.4 |

Comments

- C1 At base of R3, bed material consists of boulder/cobble and spawning habitat is very limited. Easy fish access u/s to 500 m. Good B1/RB rearing habitat (large bed material).
- C2 ~600 m u/s from the confluence with East Starr, bedrock outcrops begin to appear. Numerous falls and chutes are present throughout the rest of R3: the 2.5 m high falls at 745 m u/s from the reach break may be impassable (Photo A11/3); 4 m high x 8 m long chute is present ~1600 m u/s from the reach break (Photo A11/4); ~2.7 m high falls at 1470 m from the reach break are impassable to residents; the 5 m falls located 2950 m u/s from the reach break are a complete barrier to fish (Photo A10/1), and ~3450 m u/s from the reach break, 3 m high falls are present (Photo A10/3).
- C3 Resident B1 are present in S134; assume fish are present u/s to the 5 m falls located at 2950 m u/s from the reach break in R3.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|--|
| Stream Name: | STARR C. | Stream "Local": | STARR C. (TH46) | Access: | H |
| Watershed Code: | 460-6006-508-722-000-000-000-000-000-000-000 | Reach No.: | 4 | Reach Length (km): | 4.9 Method: MW |
| Location: | ~100 m U/S FROM TRIBUTARY ST36. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/3/96 | Time: 13:30 | Agency: C58 | Survey Crew: DB\CP\ \ \ \ \ \ | Photos: | A9/12, 13; A10/4 Air Photos: BC 7326;256 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.6071 .60286 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|------|---------|------|
| Av. Chan. Width (m): | 15.4 | Method Av. Chan. Width (m): | T | 13.6 | 9.7 | 10.1 | 15.2 | 19.4 | 24.7 |
| Av. Wet. Width (m): | 5.3 | Method Av. Wet. Width (m): | T | 7.5 | 5.3 | 4.8 | 4.7 | 4.2 | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 5 | % Riffle: | 90 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 85 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 25 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 27 | Compaction: | High |

Cover

| | | | |
|--------------------|----|-----------------------|-------------------|
| Cover Total % : | 80 | Method Cover Total %: | GE |
| Dp Pool: 5 L.O.D.: | 0 | Boulder: 75 | In Veg.: 0 |
| | | Over Veg: 10 | Cutbank: 10 |
| Crown Closure % : | 5 | Method Crown Closure: | GE |
| | | Aspect: E | Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 1.00 | Method Discharge (m3/s) : |

Specific Data

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 50 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 1.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 50 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.8 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 40 | Method Conductivity: | CM |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 15 B 3.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

2~Mar-9~

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 35 m length of stream, 2 passes with a lower net. No fish were caught. |
| C2 | Very unstable creek. Evidence of high flows include bank erosion and cobble/boulder bed material. Creek has a high potential to move debris. |
| C3 | Suitable fish habitat is present although no fish were caught. Excellent potential spawning habitat present in upper R4. Suspect upper Starr C. is barren above the 5 m high impassable falls at 2950 m in R3. |
| C4 | Lat/Lon of helicopter landing site: 54 25.57 127 31.65 |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C.

Watershed Code:

Stream Survey Report

460-6006-508-722-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|--|--|-----------------|--|------------------------------|--|--------------------|--|---|--|
| Stream Name: | | STARR C. | | Stream "Local": | | STARR C. (TH46) | | Access: | | H | |
| Watershed Code: | | 460-6006-508-722-000-000-000-000-000-000-000 | | Reach No.: | | 5 | | Reach Length (km): | | 2.1 Method: MW | |
| Location: | | ~200 m U/S FROM REACH BREAK. | | Map #: | | 093L043 | | Site No.: | | 4 Length surveyed (m): 110.0 Method: HC | |
| | | | | U.T.M.: | | 9 6071 60286 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 10/3/96 | | Time: 15:00 | | Agency: C58 | | Survey Crew: DB\CP \ \ \ \ \ | | Photos: | | A10/5 - 7 Air Photos: BC 7326:136 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 6.2 Method Av. Chan. Width (m): T | | 4.6 | | 3.7 | | 4.4 | | 8.5 10.8 5.1 | |
| Av. Wet. Width (m): | | 3.8 Method Av. Wet. Width (m): T | | 3.3 | | 2.1 | | 4.4 | | 3.8 3.8 5.1 | |
| Av. Max. Rif. Depth (cm): | | 15 Av. Max. Riffle Depth (cm): MS | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | 30 Av. Max. Pool Depth (cm): 15 | | | | | | | | | |
| Gradient (%): | | 3.0 Method Gradient: CL | | | | | | | | | |
| % Pool: 0 | | % Riffle: 75 | | % Run: 25 | | % Other: 0 | | Method: GE | | | |
| % Side Channel: | | 0 Method Side Channel: GE | | | | | | | | | |
| % Debris Area: | | 0 Method Debris Area: GE | | | | | | | | | |
| Cover | | | | | | | | Banks | | | |
| Cover Total % : | | 60 Method Cover Total %: GE | | | | | | | | | |
| Dp Pool: 0 L.O.D.: 0 | | Boulder: 80 In Veg.: 0 | | Over Veg: 0 | | Cutbank: 20 | | | | | |
| Crown Closure % : | | 0 Method Crown Closure: GE | | Aspect: SE | | Method Aspect: AE | | | | | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) VO | | | | | | | | | |
| Discharge (m3/s) : | | 0.20 Method Discharge (m3/s) : | | | | | | | | | |
| Reach Symbol | | | | (Fish) | | | | | | | |
| | | | | NF | | | | | | | |
| | | | | 6 B 3.0 0370 | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | |
| pH: | | Method pH: | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | |
| Water Temp. (°C): | | 5.0 Method Temperature: | | | | | | | | TC | |
| Turb. (cm): | | 200 Method Turbidity: | | | | | | | | GE | |
| Cond. (µmhos): | | 37 Method Conductivity: | | | | | | | | CM | |

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1

Electrofished 109 m length of stream, 1 pass with no lower net. No fish were caught.
- C2

Excellent potential fish habitat in lower R5. (No fish present above the impassable falls at 2950 m in R3).
- C3

Lat/Lon of helicopter landing site: 54 26.89 127 32.19

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-722-024-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------|----------------------|-----------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST1 | Access: | H |
| Watershed Code: | 460-6006-508-722-024-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.2 Method: MW |
| Location: | -226 m U/S FROM STARR C. CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 1200.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6066 .60287 | Photos: | B10/1-3 Air Photos: BCB 91181:177 |
| Date: | 10/11/96 | Time: | 9:30 | Agency: | C58 |
| | | Survey Crew: | JH\SS \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.2 | Method Av. Chan. Width (m): | T | 2.2 | 2.3 | 2.2 | 2.3 | 2.0 | 2.4 |
| Av. Wet. Width (m): | 2.1 | Method Av. Wet. Width (m): | T | 2.6 | 2.1 | 2.2 | 2.2 | 1.6 | 2.0 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | 10 | 10 | 7 | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 9 | 30 | 30 | 30 | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 15 | % Run: | 45 | % Other: | 25 | Method: | GE |
| % Side Channel: | >40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 5 | L.O.D.: | 5 | Boulder: | 5 | In Veg.: | 0 | Over Veg: | 25 |
| Crown Closure % : | 10 | Method Crown Closure: | GE | Aspect : | NE | Method Aspect: | AE | Cutbank: | 60 |

Discharge

| | |
|-----------------------|------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : |
| Discharge (m3/s) : | Method Discharge (m3/s) : |

Reach Symbol

| |
|--|
| (Fish) |
| RB DV (LKC) |
| 2 D 4.0 4420 |
| (Width, Valley: Channel, Slope) (Bed Material) |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 40 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 20 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 17 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.6 | % Unstable: | 25 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 5 | Larges: | No |
| Valley: Chan. Ratio: | 4 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | BD | 0.0 |

Comments

- C1 Air Temp: 3 C.
- C2 No fish were observed; numerous tadpoles were observed in stagnant water.
- C3 1 m high drop over a beaver dam is located ~40 m u/s from the St1 mouth (Photo B10/1); presently a migration barrier. At 99 m, the channel braids around an old beaver dam. Further u/s, a beaver dam complex consisting of multiple channels across an unconfined floodplain is present.
- C4 ~50 m FSZ is present ~400 m u/s from the St1 confluence.
- C5 R1 is classed as S3 habitat. (See fish data from Site 2 - u/s in R1.)

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|-----------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | STI | Access: | HI |
| Watershed Code: | 460-6006-508-722-024-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.2 Method: MW |
| Location: | ~100 m D/S FROM THE TOP OF R1. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 9/26/96 | Time: 13:00 | Agency: C58 | Survey Crew: DB\CP\ \ \ \ \ \ | Photos: | A8/7, 8 Air Photos: BCB 91181:177 |
| | | Map #: | 093L034 | | |
| | | U.T.M.: | 9.6066 .60287 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 2.0 | 0.9 | 1.3 | 0.7 | 2.3 | 1.0 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 2.0 | 0.9 | 1.3 | 0.7 | 2.3 | 1.0 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 40 | % Run: 20 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|---------------------|-----|-----------------------|-------------|--------------|----------------|----|--|
| Cover Total % : | 100 | Method Cover Total %: | GE | | | | |
| Dp Pool : 0 L.O.D.: | 0 | Boulder: 10 | In Veg.: 30 | Over Veg: 40 | Cutbank: | 20 | |
| Crown Closure % : | 30 | Method Crown Closure: | GE | Aspect : NE | Method Aspect: | AE | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | |

Reach Symbol

| | | |
|---------------------------------|----------------|---------------------|
| | | (Fish) |
| | | RB* (SST) DV* (LKC) |
| 1 B 2.0 | 0370 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 20 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 40 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 9.6 | Method Temperature: | TC |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | 68 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| RB | 4 | 60 - 101 | J | R | | | EL |
| DV | 1 | 198 | A | S | M | | EL |

Obstructions

Comments

- C1 Water is a tannic colour.
- C2 Electrofished 41 m length of stream, 1 pass with no lower net. The RB caught are suspected to be residents based on the heavy spotting they exhibit on their bellies. The DV caught was a ripe male (Photos A8/12). Suspect the presence of lake chub (LKC) based on previous catches in lower St1 by Carswell and Witt (1979).
- C3 Small pockets for potential spawning were observed in this section.
- C4 St1.1 was surveyed and has no defined channel. The small lake at the top of St1.1 is shallow and stagnant, there is no defined channel at the lake outlet and there is no fish access into lake. The lake is surrounded by meadow and the Lat/Lon of the helicopter landing site is 54 23.34 127 22.36.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST1 | Access: | F1 |
| Watershed Code: | 460-6006-508-722-024-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 2.4 Method: MW |
| Location: | UPPER ST1, ~150 m U/S FROM THE TOP OF THE LAKE. | Site No.: | 3 | Length surveyed (m): | 2000.0 Method: HC |
| | | Map #: | 093L034 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6066 .60287 | Photos: | A12/1, 2 Air Photos: BCB 91181.178 |
| Date: | 10/9/96 | Time: | 12:30 | Agency: | C58 |
| | | Survey Crew: | RD\CP \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 2.6 | Method Av. Chan. Width (m): | T | 2.2 | 2.4 | 2.1 | 3.5 | 2.6 |
| Av. Wet. Width (m): | 2.6 | Method Av. Wet. Width (m): | T | 2.2 | 2.4 | 2.1 | 3.5 | 2.6 |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | |
| Gradient (%): | 0.5 | Method Gradient: | CL | | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 100 | % Other: | 0 | Method: GE |
| % Side Channel: | | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 95 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 70 | Over Veg: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | NE | Method Aspect: | AE | Cutbank: | 30 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | | | |
|---------------------------------|---|--------|----------------|
| | | (Fish) | |
| | | SP | |
| 3 | C | 0.5 | F |
| (Width, Valley: Channel, Slope) | | | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 100 | % Fines (<2mm): | 100 |
| % Gravels: | 0 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 0 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 5 | Larges: | No |
| Valley: Chan. Ratio: | 3 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.7 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1
- Easy fish access u/s from lake throughout meadow area. The upper extent of fish is to 1700 m u/s from the top of the lake. Further u/s the channel is not defined, and in R4, no fish were caught at the sample site.
- C2
- Surveyed R2 of St1. Inlet tributaries St1.2, St1.3 and St1.5 had no defined channel and contained no fish habitat. Tributary St1.4 was observed and there is possible fish use in the lower 500 m; a beaver dam is present ~450 m u/s from the mouth.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------------|--|---|--|-----------------------------|--|----------------------|--|---------------------------|--|--------------------------|--|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST1 | | Access: | | 11 | |
| Watershed Code: | | 460-6006-508-722-024-000-000-000-000-000-000 | | | | | | Reach No.: | | 4 | |
| Location: | | UPPER MEADOW AREA ABOVE STEEP SECTION IN R4, ~100 m U/S FROM THE REACH BREAK. | | Map #: | | 093L034 | | Site No.: | | 4 | |
| Date: | | 9/26/96 | | Time: | | 14:40 | | Fish Card: | | N | |
| Agency: | | C58 | | Survey Crew: | | DB\CP\ \ \ \ \ \ \ \ | | Field: | | Yes | |
| U.T.M.: | | 9.6066 .60287 | | Photos: | | A8/13, 14 | | Historical: | | No | |
| Air Photos: | | BCB 91181:179 | | | | | | | | | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 0.7 | | Method Av. Chan. Width (m): | | T | | % Fines (<2mm): | | 0 | |
| Av. Wet. Width (m): | | 0.7 | | Method Av. Wet. Width (m): | | T | | % Gravels: | | 30 | |
| Av. Max. Rif. Depth (cm): | | 6 | | Av. Max. Riffle Depth (cm): | | MS | | % Large: | | 70 | |
| Av. Max. Pool Depth (cm): | | 20 | | Av. Max. Pool Depth (cm): | | 6 | | Small (2-16mm): | | 10 | |
| Gradient (%): | | 8.0 | | Method Gradient: | | CL | | Large (16-64mm): | | 20 | |
| % Pool: 50 | | % Riffle: 50 | | % Run: 0 | | % Other: 0 | | Small cobble (64-128mm): | | 30 | |
| Method Side Channel: | | 0 | | Method Side Channel: | | GE | | Large cobble (128-256mm): | | 40 | |
| % Debris Area: | | 0 | | Method Debris Area: | | GE | | Boulder cobble (>256mm): | | 0 | |
| | | | | Method: GE | | | | % Bedrock: | | 0 | |
| | | | | | | | | D90 (cm): | | 20 | |
| | | | | | | | | Compaction: | | High | |
| Cover | | | | Banks | | | | | | | |
| Cover Total % : | | 50 | | Method Cover Total %: | | GE | | Height (m): | | 0.2 | |
| Dp Pool: 0 | | L.O.D.: 0 | | Boulder: 0 | | In Veg.: 0 | | % Unstable: | | 0 | |
| Crown Closure % : | | | | Method Crown Closure: | | Aspect: E | | Textures Fines: | | Yes | |
| | | | | | | Method Aspect: | | Gravel: Yes | | Larges: No | |
| | | | | | | | | Bedrock: | | No | |
| | | | | | | | | Confinement: | | 2 | |
| | | | | | | | | Valley: Chan. Ratio: | | 1 | |
| | | | | | | | | Stage: | | 1 | |
| | | | | | | | | Flood Signs Ht(m): | | 0.2 | |
| | | | | | | | | Method Flood Signs: | | MS | |
| | | | | | | | | Braided: | | N | |
| | | | | | | | | Method Braided: | | GE | |
| | | | | | | | | Bars (%): | | 0 | |
| | | | | | | | | Method Bars: | | GE | |
| | | | | | | | | pH: | | Method pH: | |
| | | | | | | | | 02 (ppm): | | Method Dissolved Oxygen: | |
| | | | | | | | | Water Temp. (°C): | | 9.0 | |
| | | | | | | | | Method Temperature: | | TC | |
| | | | | | | | | Turb. (cm): | | 200 | |
| | | | | | | | | Method Turbidity: | | GE | |
| | | | | | | | | Cond. (µmhos): | | 61 | |
| | | | | | | | | Method Conductivity: | | CM | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | | | | |
| Discharge (m3/s) : | | 0.03 | | Method Discharge (m3/s) : | | | | | | | |
| Reach Symbol | | | | (Fish) | | | | | | | |
| | | | | NF | | | | | | | |
| | | | | I A 8.0 0370 | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-024-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 41 m length of stream, 1 pass with no lower net. No fish were caught. |
| C2 | Willow/balsam line the edge of the tributary. |
| C3 | St1 has no defined channel d/s at the top of R2; water goes subsurface in large meadow. Suspect fish distribution ends at this point |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST2-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------|--|-----------------------------|-----------------|-----|-----------------------------------|-----|---------------|-----|----------------|----|----------|----------------|----------------------|----------|---------------|----------|-------------|------------|------------------|--|---------------------------------|----------------|----------------|----------------------|---|-----|-----|-----|-----|-----|-----|--|--------|-----------------|--|---------------------|-----------------|---------|---------------------|---|-----|-----|-----|--|-----|-----|----------------------|--|--------|----------------------|---------------------------|--|--|-----------------------------|--|-------------|--|-----------------|----|-------------------|------|--------|-------------------|---------------------------|----|--|---------------------------|----------|----|--------------|--|--|--|----------------------|--|--|---------------|--------|--------|-----------|----|--------------------|--|--------|--------------|----------|--|--------|----------|-----------|---|-----------|-------|--------|---|----------|-----|-----------|--|--------|-------------------|-------------------|--|-----------------|--------------|-------------|---------------|--------|------------|----------------|--|--------|---------------|--|--|--|----------------|---|--------|--------------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|--|-----------------|--|------------|--|-----------------|--|--|--|------------------|--|-----------|--|--------------------------|--|--|--|---------------------------|--|--|--|--------------------------|--|------------|--|------------|--|-----------|--|-------------|------|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST2 | | Access: | | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: | | 460-6006-508-722-ST2-000-000-000-000-000-000-000 | | | | | | | | Reach No.: | | 1 | | Reach Length (km): | | 0.7 | | Method: | | MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | | TRIB. LOCATED ~1700 m U/S FROM ST1 CONFLUENCE, SITE LOCATED ~50 m U/S FROM THE MOUTH. | | | | Map #: | | 093L034 | | Site No.: | | 1 | | Length surveyed (m): | | 50.0 | | Method: | | HC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | U.T.M.: | | 9.6046 .60278 | | Fish Card: | | N | | Field: | | Yes | | Historical: | | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/11/96 | | Time: 11:30 | | Agency: C58 | | Survey Crew: JHSS \ \ \ \ \ \ \ \ | | | | Photos: | | B10/6, 7 | | Air Photos: | | BCD 91181:179 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="8">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>1.5</td> <td>Method</td> <td>Av. Chan. Width (m):</td> <td>T</td> <td>1.6</td> <td>1.0</td> <td>1.5</td> <td>1.4</td> <td>1.9</td> <td>1.8</td> <td colspan="4"></td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>0.9</td> <td>Method</td> <td>Av. Wet. Width (m):</td> <td>T</td> <td>1.2</td> <td>1.2</td> <td>0.5</td> <td>0.8</td> <td>0.9</td> <td>0.8</td> <td colspan="4"></td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td></td> <td></td> <td>Av. Max. Riffle Depth (cm):</td> <td></td> <td colspan="8"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td></td> <td></td> <td>Av. Max. Pool Depth (cm):</td> <td></td> <td colspan="8"></td> </tr> <tr> <td>Gradient (%):</td> <td>43.0</td> <td>Method</td> <td>Gradient:</td> <td>CL</td> <td colspan="8"></td> </tr> <tr> <td>% Pool:</td> <td>0</td> <td>% Riffle:</td> <td>99</td> <td>% Run:</td> <td>1</td> <td>% Other:</td> <td>0</td> <td colspan="3">Method:</td> <td colspan="3">GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method</td> <td>Side Channel:</td> <td>GE</td> <td colspan="8"></td> </tr> <tr> <td>% Debris Area:</td> <td>0</td> <td>Method</td> <td>Debris Area:</td> <td>GE</td> <td colspan="8"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | | | Av. Chan. Width (m): | 1.5 | Method | Av. Chan. Width (m): | T | 1.6 | 1.0 | 1.5 | 1.4 | 1.9 | 1.8 | | | | | Av. Wet. Width (m): | 0.9 | Method | Av. Wet. Width (m): | T | 1.2 | 1.2 | 0.5 | 0.8 | 0.9 | 0.8 | | | | | Av. Max. Rif. Depth (cm): | | | Av. Max. Riffle Depth (cm): | | | | | | | | | | Av. Max. Pool Depth (cm): | | | Av. Max. Pool Depth (cm): | | | | | | | | | | Gradient (%): | 43.0 | Method | Gradient: | CL | | | | | | | | | % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | | | GE | | | % Side Channel: | 0 | Method | Side Channel: | GE | | | | | | | | | % Debris Area: | 0 | Method | Debris Area: | GE | | | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td></td> <td>% Fines (<2mm):</td> <td></td> </tr> <tr> <td>% Gravels:</td> <td></td> <td>Small (2-16mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td></td> </tr> <tr> <td>% Larges:</td> <td></td> <td>Small cobble (64-128mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td></td> </tr> <tr> <td>% Bedrock:</td> <td></td> <td>% Bedrock:</td> <td></td> </tr> <tr> <td>D90 (cm):</td> <td></td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | | | | | | | | | % Fines (<2mm): | | % Fines (<2mm): | | % Gravels: | | Small (2-16mm): | | | | Large (16-64mm): | | % Larges: | | Small cobble (64-128mm): | | | | Large cobble (128-256mm): | | | | Boulder cobble (>256mm): | | % Bedrock: | | % Bedrock: | | D90 (cm): | | Compaction: | High |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 1.5 | Method | Av. Chan. Width (m): | T | 1.6 | 1.0 | 1.5 | 1.4 | 1.9 | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 0.9 | Method | Av. Wet. Width (m): | T | 1.2 | 1.2 | 0.5 | 0.8 | 0.9 | 0.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | | | Av. Max. Riffle Depth (cm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | | Av. Max. Pool Depth (cm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 43.0 | Method | Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | | | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method | Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0 | Method | Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | | % Fines (<2mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | | Small (2-16mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | | Small cobble (64-128mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | | % Bedrock: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total %:</td> <td></td> <td>Method</td> <td>Cover Total %:</td> <td></td> </tr> <tr> <td>Dp Pool:</td> <td>L.O.D.:</td> <td>Boulder:</td> <td>In Veg.:</td> <td>Over Veg.:</td> </tr> <tr> <td>Crown Closure %:</td> <td></td> <td>Method</td> <td>Crown Closure:</td> <td>Aspect:</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>SE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Method</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Aspect:</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>AE</td> </tr> </tbody> </table> | | | | | | | | | | Cover Total %: | | Method | Cover Total %: | | Dp Pool: | L.O.D.: | Boulder: | In Veg.: | Over Veg.: | Crown Closure %: | | Method | Crown Closure: | Aspect: | | | | | SE | | | | | Method | | | | | Aspect: | | | | | AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td></td> <td>% Unstable:</td> <td></td> </tr> <tr> <td>Textures Fines:</td> <td>No</td> <td>Gravel:</td> <td>No</td> </tr> <tr> <td></td> <td></td> <td>Larges:</td> <td>No</td> </tr> <tr> <td></td> <td></td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Confinement:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>M</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td></td> <td>Method</td> <td>Flood Signs:</td> </tr> <tr> <td>Braided:</td> <td></td> <td>Method</td> <td>Braided:</td> </tr> <tr> <td>Bars (%):</td> <td></td> <td>Method</td> <td>Bars:</td> </tr> <tr> <td>pH:</td> <td></td> <td>Method</td> <td>pH:</td> </tr> <tr> <td>02 (ppm):</td> <td></td> <td>Method</td> <td>Dissolved Oxygen:</td> </tr> <tr> <td>Water Temp. (°C):</td> <td></td> <td>Method</td> <td>Temperature:</td> </tr> <tr> <td>Turb. (cm):</td> <td></td> <td>Method</td> <td>Turbidity:</td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method</td> <td>Conductivity:</td> </tr> </tbody> </table> | | | | | | | | | | Height (m): | | % Unstable: | | Textures Fines: | No | Gravel: | No | | | Larges: | No | | | Bedrock: | No | Confinement: | | | | Valley: Chan. Ratio: | | | | Stage: | M | | | Flood Signs Ht(m): | | Method | Flood Signs: | Braided: | | Method | Braided: | Bars (%): | | Method | Bars: | pH: | | Method | pH: | 02 (ppm): | | Method | Dissolved Oxygen: | Water Temp. (°C): | | Method | Temperature: | Turb. (cm): | | Method | Turbidity: | Cond. (µmhos): | | Method | Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total %: | | Method | Cover Total %: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: | L.O.D.: | Boulder: | In Veg.: | Over Veg.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure %: | | Method | Crown Closure: | Aspect: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | SE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Method | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Aspect: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | | % Unstable: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | No | Gravel: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Larges: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | | Method | Flood Signs: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | | Method | Braided: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | | Method | Bars: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | | Method | pH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 02 (ppm): | | Method | Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | | Method | Temperature: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | | Method | Turbidity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method | Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="8">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m):</td> <td></td> <td>Method</td> <td>Wetted Width (m):</td> <td></td> <td colspan="8"></td> </tr> <tr> <td>Mean Depth (m):</td> <td></td> <td>Method</td> <td>Mean Depth (m):</td> <td></td> <td colspan="8"></td> </tr> <tr> <td>Mean Velocity (m/s):</td> <td></td> <td>Method</td> <td>Mean Velocity (m/s):</td> <td>VO</td> <td colspan="8"></td> </tr> <tr> <td>Discharge (m3/s):</td> <td>0.01</td> <td>Method</td> <td>Discharge (m3/s):</td> <td></td> <td colspan="8"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | | | Wetted Width (m): | | Method | Wetted Width (m): | | | | | | | | | | Mean Depth (m): | | Method | Mean Depth (m): | | | | | | | | | | Mean Velocity (m/s): | | Method | Mean Velocity (m/s): | VO | | | | | | | | | Discharge (m3/s): | 0.01 | Method | Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m): | | Method | Wetted Width (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m): | | Method | Mean Depth (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s): | | Method | Mean Velocity (m/s): | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s): | 0.01 | Method | Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td colspan="2"></td> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">NS</td> </tr> <tr> <td colspan="2">2</td> <td colspan="2">43.0</td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td colspan="2">(Bed Material)</td> </tr> </tbody> </table> | | | | | | | | | | | | (Fish) | | | | NS | | 2 | | 43.0 | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | 43.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST2-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | St2 flows into the Starr C. mainstem at the base of a ~15 m high eroding bank (Photo B10/4). Gradient is 52% up the bank and ~23% thereafter. |
| C2 | No fish access, no fish habitat. |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-154-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|--------------------|---|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST5 | Access: | H |
| Watershed Code: | 460-6006-508-722-154-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | TRIB. LOCATED ~1261 m U/S FROM ST2 CONFLUENCE, SITE LOCATED ~100 m U/S FROM THE MOUTH. | Map #: | 093L034 | Site No.: | 1 Length surveyed (m): 100.0 Method: HC |
| Date: 10/11/96 | Time: 12:30 | Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ | Fish Card: | N Field: Yes Historical: No |
| | | | | Photos: | B10/8 Air Photos: BCB 91181-179 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 1.4 | 1.5 | 1.2 | 1.2 | 0.9 | 1.1 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 1.1 | 1.3 | 1.0 | 1.2 | 0.8 | 1.1 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 16.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: High |

Cover

| | | | | | |
|-------------------|-----------------------|----------|----------|----------------|----------|
| Cover Total % : | Method Cover Total %: | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg.: | Cutbank: |
| Crown Closure % : | Method Crown Closure: | Aspect : | SE | Method Aspect: | AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 1 | 16.0 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | M |
| Flood Signs 1lt(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-154-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | F | 0.0 |

Comments

C1 2.25 m high falls over a rock bank is present at the mouth of St5; no fish access. Gradient is steep above the falls (19%, 13%); habitat is too limited to support a resident population.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST7-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------|---|----------|-----------------|-----|-----------------------------------|-----|---------------|-----|----------------|----|-----------------------|--|----------------------|---------|-------------|----------|------------------|--|-----------------------|-----|---------------------------------|---|----------------|-----|-----|-----|----------------|-----|--|--|------------------------|-----|----------------------------|---|-----|-----|-----|--|----------------------|--|-----------------------------|----|-----------------|----|---------------------------|----|-----------------------------|--|-------------------|------|--------------------------|--|----------|----|--------|---|--|--|---------------------------|--|---------------------------|--|----------|--|-----------------|--|-----------|--|--------------|--|-----|--|---------------|------|------------------|----|--------------------------|--|-------------------|--|---------------------|--|-------------|--|-------------------|--|----------------|---|----------------------|----|--------|---|----------|---|---------|--|--|----|--|--|-----------------|---|----------------------|----|--|--|--|--|--|--|--|--|--|--|----------------|------|---------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|--|-----------------|--|------------|--|-----------------|--|--|--|------------------|--|-----------|--|--------------------------|--|--|--|---------------------------|--|--|--|--------------------------|--|------------|--|------------|--|-----------|--|-------------|------|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST7 | | Access: | | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: | | 460-6006-508-722-ST7-000-000-000-000-000-000 | | | | | | | | Reach No.: | | 1 | | Reach Length (km): | | 1.1 | | Method: | | MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | | TRIB. LOCATED ~460 m U/S FROM ST5 CONFLUENCE, SITE LOCATED ~50 m U/S FROM THE MOUTH. | | | | Map #: | | 093L033 | | Site No.: | | 1 | | Length surveyed (m): | | 50.0 | | Method: | | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | U.T.M.: | | 9.6038 .60275 | | Fish Card: | | N | | Field: | | Yes | | Historical: | | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/11/96 | | Time: 13:20 | | Agency: C58 | | Survey Crew: JHSS \ \ \ \ \ \ \ \ | | | | | | Photos: | | B10/11, 12 | | Air Photos: | | BCB 91181:179 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="6">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>1.4</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>1.6</td> <td>1.8</td> <td>1.2</td> <td>1.3</td> <td>1.4</td> <td>1.0</td> <td colspan="2"></td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>0.4</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>0.3</td> <td>0.4</td> <td>0.4</td> <td colspan="5"></td> <td colspan="2"></td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td></td> <td>Av. Max. Riffle Depth (cm):</td> <td></td> <td colspan="8"></td> <td colspan="2"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td></td> <td>Av. Max. Pool Depth (cm):</td> <td></td> <td colspan="8"></td> <td colspan="2"></td> </tr> <tr> <td>Gradient (%):</td> <td>48.0</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="8"></td> <td colspan="2"></td> </tr> <tr> <td>% Pool:</td> <td>0</td> <td>% Riffle:</td> <td>99</td> <td>% Run:</td> <td>1</td> <td>% Other:</td> <td>0</td> <td colspan="3">Method:</td> <td colspan="3">GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="8"></td> <td colspan="2"></td> </tr> <tr> <td>% Debris Area:</td> <td>0-10</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="8"></td> <td colspan="2"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.6 | 1.8 | 1.2 | 1.3 | 1.4 | 1.0 | | | Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.3 | 0.4 | 0.4 | | | | | | | | Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | | | | | | Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | | | | | | Gradient (%): | 48.0 | Method Gradient: | CL | | | | | | | | | | | % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | | | GE | | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td></td> <td>% Fines (<2mm):</td> <td></td> </tr> <tr> <td>% Gravels:</td> <td></td> <td>Small (2-16mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td></td> </tr> <tr> <td>% Larges:</td> <td></td> <td>Small cobble (64-128mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td></td> </tr> <tr> <td>% Bedrock:</td> <td></td> <td>% Bedrock:</td> <td></td> </tr> <tr> <td>D90 (cm):</td> <td></td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | | | | | | | | | % Fines (<2mm): | | % Fines (<2mm): | | % Gravels: | | Small (2-16mm): | | | | Large (16-64mm): | | % Larges: | | Small cobble (64-128mm): | | | | Large cobble (128-256mm): | | | | Boulder cobble (>256mm): | | % Bedrock: | | % Bedrock: | | D90 (cm): | | Compaction: | High |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.6 | 1.8 | 1.2 | 1.3 | 1.4 | 1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.3 | 0.4 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 48.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | | | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | | % Fines (<2mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | | Small (2-16mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | | Small cobble (64-128mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | | % Bedrock: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total %:</td> <td></td> <td>Method Cover Total %:</td> <td></td> </tr> <tr> <td>Dp Pool:</td> <td>L.O.D.:</td> <td>Boulder:</td> <td>In Veg.:</td> </tr> <tr> <td>Crown Closure %:</td> <td></td> <td>Method Crown Closure:</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Aspect:</td> <td>NE</td> </tr> <tr> <td></td> <td></td> <td>Method Aspect:</td> <td>AE</td> </tr> </tbody> </table> | | | | | | | | | | Cover Total %: | | Method Cover Total %: | | Dp Pool: | L.O.D.: | Boulder: | In Veg.: | Crown Closure %: | | Method Crown Closure: | | | | Aspect: | NE | | | Method Aspect: | AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td></td> <td>% Unstable:</td> <td></td> </tr> <tr> <td>Textures Fines:</td> <td>No</td> <td>Gravel:</td> <td>No</td> </tr> <tr> <td>Confinement:</td> <td></td> <td>Larges:</td> <td>No</td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td></td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Stage:</td> <td>L</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td></td> <td>Method Flood Signs:</td> <td></td> </tr> <tr> <td>Braided:</td> <td></td> <td>Method Braided:</td> <td></td> </tr> <tr> <td>Bars (%):</td> <td></td> <td>Method Bars:</td> <td></td> </tr> <tr> <td>pH:</td> <td></td> <td>Method pH:</td> <td></td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td></td> <td>Method Temperature:</td> <td></td> </tr> <tr> <td>Turb. (cm):</td> <td></td> <td>Method Turbidity:</td> <td></td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | Height (m): | | % Unstable: | | Textures Fines: | No | Gravel: | No | Confinement: | | Larges: | No | Valley: Chan. Ratio: | | Bedrock: | No | Stage: | L | | | Flood Signs Ht(m): | | Method Flood Signs: | | Braided: | | Method Braided: | | Bars (%): | | Method Bars: | | pH: | | Method pH: | | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | | Method Temperature: | | Turb. (cm): | | Method Turbidity: | | Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total %: | | Method Cover Total %: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: | L.O.D.: | Boulder: | In Veg.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure %: | | Method Crown Closure: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Aspect: | NE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Method Aspect: | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | | % Unstable: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | No | Gravel: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | | Larges: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | | Method Flood Signs: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | | Method Braided: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | | Method Bars: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | | Method pH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | | Method Temperature: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | | Method Turbidity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="6">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m):</td> <td></td> <td>Method Wetted Width (m):</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>Mean Depth (m):</td> <td></td> <td>Method Mean Depth (m):</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>Mean Velocity (m/s):</td> <td></td> <td>Method Mean Velocity (m/s):</td> <td>VO</td> <td colspan="6"></td> </tr> <tr> <td>Discharge (m3/s):</td> <td>0.01</td> <td>Method Discharge (m3/s):</td> <td></td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | Wetted Width (m): | | Method Wetted Width (m): | | | | | | | | Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | | Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td colspan="2"></td> <td colspan="2">(Fish)</td> </tr> <tr> <td colspan="2"></td> <td colspan="2">NS</td> </tr> <tr> <td colspan="2">1 48.0</td> <td colspan="2"></td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td colspan="2">(Bed Material)</td> </tr> </tbody> </table> | | | | | | | | | | | | (Fish) | | | | NS | | 1 48.0 | | | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 48.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST7-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

| | |
|----|--|
| C1 | Alluvial fan at the mouth of St7; accessible to 8 m. U/S of 8 m, gradient is 58% and further u/s the average gradient is ~48%. |
| C2 | No fish access; no fish habitat present. |
| C3 | Tributary has a low potential to move debris due to stable low flow . |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-186-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---|--|-------------|--|---------------------|--|---|--|---|--|---------------------------|--|
| Stream Name: STARR C. TRIBUTARY | | | | Stream "Local": ST8 | | | | Access: H | | | |
| Watershed Code: 460-6006-508-722-186-000-000-000-000-000-000 | | | | Reach No.: 1 | | | | Reach Length (km): 0.3 Method: HC | | | |
| Location: TRIB. LOCATED ~724 m U/S FROM ST5 CONFLUENCE, SITE LOCATED ~108 m U/S FROM THE MOUTH. | | | | Map #: 093L033 | | | | Site No.: 1 Length surveyed (m): 313.0 Method: HC | | | |
| U.T.M.: 9.6035 .60274 | | | | Fish Card: N | | | | Field: Yes Historical: No | | | |
| Date: 10/11/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: JHSS \ \ \ \ \ | | Photos: B10/13-15 | | Air Photos: BCB 91181:179 | |
| Channel Characteristics | | | | | | Bed Material | | | | | |
| | | | | | | | | | | | |
| Av. Chan. Width (m): 1.8 Method Av. Chan. Width (m): T | | | | | | Specific Data | | | | | |
| Av. Wet. Width (m): 1.0 Method Av. Wet. Width (m): T | | | | | | 2.8 1.6 1.3 0.9 1.3 2.6 | | | | | |
| Av. Max. Rif. Depth (cm): 12 Av. Max. Riffle Depth (cm): MS | | | | | | 1.1 1.4 0.5 0.7 0.8 1.6 | | | | | |
| Av. Max. Pool Depth (cm): 23 Av. Max. Pool Depth (cm): 12 | | | | | | 15 10 10 | | | | | |
| Gradient (%): 4.0 Method Gradient: CL | | | | | | 20 20 30 | | | | | |
| % Pool: 40 % Riffle: 30 % Run: 30 % Other: 0 Method: GE | | | | | | | | | | | |
| % Side Channel: 0 Method Side Channel: GE | | | | | | | | | | | |
| % Debris Area: 0-10 Method Debris Area: GE | | | | | | | | | | | |
| Cover | | | | | | Banks | | | | | |
| Cover Total % : 60 Method Cover Total %: GE | | | | | | | | | | | |
| Dp Pool : 5 L.O.D.: 5 Boulder: 0 In Veg.: 0 Over Veg: 75 Cutbank: 15 | | | | | | | | | | | |
| Crown Closure % : 60 Method Crown Closure: GE Aspect : N Method Aspect: AE | | | | | | | | | | | |
| Discharge | | | | | | Banks | | | | | |
| | | | | | | | | | | | |
| Wetted Width (m) : Method Wetted Width (m) : | | | | | | Specific Data | | | | | |
| Mean Depth (m) : Method Mean Depth (m) : | | | | | | | | | | | |
| Mean Velocity (m/s) : Method Mean Velocity (m/s) VO | | | | | | | | | | | |
| Discharge (m3/s) : 0.01 Method Discharge (m3/s) : | | | | | | | | | | | |
| Reach Symbol | | | | | | Banks | | | | | |
| (Fish) | | | | | | | | | | | |
| (SP) | | | | | | | | | | | |
| 2 D 4.0 7210 | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) (Bed Material) | | | | | | | | | | | |
| | | | | | | Height (m): 0.4 % Unstable: 10 | | | | | |
| | | | | | | Textures Fines: Yes Gravel: No Larges: No Bedrock: No | | | | | |
| | | | | | | Confinement: 4 | | | | | |
| | | | | | | Valley: Chan. Ratio: 4 | | | | | |
| | | | | | | Stage: M | | | | | |
| | | | | | | Flood Signs Ht(m): 0.1 Method Flood Signs: MS | | | | | |
| | | | | | | Braided: N Method Braided: GE | | | | | |
| | | | | | | Bars (%): 0 Method Bars: GE | | | | | |
| | | | | | | pH: 7.4 Method pH: PH | | | | | |
| | | | | | | O2 (ppm): Method Dissolved Oxygen: | | | | | |
| | | | | | | Water Temp. (°C): 5.5 Method Temperature: 1C | | | | | |
| | | | | | | Turb. (cm): 200 Method Turbidity: GE | | | | | |
| | | | | | | Cond. (µmhos): 100 Method Conductivity: CM | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-186-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | F | 0.1 |

Comments

- C1 Crown closure consisted of deciduous forest.
- C2 Air Temp: 6 C.
- C3 St8 channel flows in an old flood channel of the Starr C. mainstem. ~118 m u/s from the mouth, a 1 m high drop was observed; may be a migration barrier (Photo B10/15). ~246 m u/s from the mouth, the channel enters a gully. The gradient is >20% and continuous ~313 m u/s from the mouth; no fish access and no fish habitat beyond this point.
- C4 Tributary St8.1 was not observed.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST9-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------|--------------------|--|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST9 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-ST9-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | TRIB. LOCATED ~295 m U/S FROM ST8 CONFLUENCE, SITE LOCATED ~50 m U/S FROM THE MOUTH. | Map #: | 093L033 | Site No.: | 1 Length surveyed (m): 50.0 Method: GE |
| Date: 10/11/96 | Time: 15:00 | U.T.M.: | 9.6032 .60275 | Fish Card: | N Field: Yes Historical: No |
| Agency: C58 | Survey Crew: JH\SS \ \ \ \ \ \ | Photos: | B10/16 | Air Photos: | BCB 91181:179 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.3 | Method Av. Chan. Width (m): | T | 2.0 | 1.9 | 1.4 | 0.6 | 1.0 | 0.7 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 1.0 | 1.0 | 0.9 | 0.6 | 0.5 | 0.6 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 39.0 | Method Gradient: | CL | | | | | | |
| % Pool: 0 | % Riffle: 99 | % Run: 1 | % Other: 0 | Method: | GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | |
|-------------------|-----------------------|----------|----------|----------------|----------|
| Cover Total % : | Method Cover Total %: | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg: | Cutbank: |
| Crown Closure % : | Method Crown Closure: | Aspect : | N | Method Aspect: | AE |

Discharge

| | | | | | |
|-----------------------|----------------------------|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | | | | |
| Discharge (m3/s) : | Method Discharge (m3/s) : | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 39.0 | |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: High |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | M |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST9-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C164% fall over ~3.5 m high bank into the Starr C. mainstem; no fish access. Creek is too steep u/s to support fish; St9 is classed as S6 habitat.
- C2Tributary has a low potential to transport bed material and debris.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-213-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|--------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST10 | Access: | II |
| Watershed Code: | 460-6006-508-722-213-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 2.3 Method: MW |
| Location: | SITE LOCATED ~50 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: IIC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6029 60276 | Photos: | B10/17, 18 Air Photos: BCB 91181:180 |
| Date: 10/11/96 | Time: 15:30 | Agency: C58 | Survey Crew: JHSS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.4 | Method Av. Chan. Width (m): | T | 1.5 | 2.2 | 2.3 | 2.4 | 3.4 | 2.4 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 1.0 | 1.3 | 1.8 | 1.0 | 2.2 | 1.5 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | 10 | 7 | 10 | | | |
| Av. Max. Pool Depth (cm): | 37 | Av. Max. Pool Depth (cm): | 9 | 30 | 40 | 40 | | | |
| Gradient (%): | 20.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 85 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|------------|-------------|-------------------|--|--|--|--|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 10 | L.O.D.: 0 | Boulder: 80 | In Veg.: 0 | Over Veg: 0 | Cutbank: 10 | | | | |
| Crown Closure % : | 35 | Method Crown Closure: | GE | Aspect : S | Method Aspect: AE | | | | |

Discharge

| | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 2 A 20.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 85 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 36 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.6 | % Unstable: | 5 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 35 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 50 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-213-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | An alluvial fan is present at the base of St10. The gradient is ~20% from the mouth with debris/rock jams present up to 1 m high. Further u/s (~50 m), the gradient decreases to <17% and continues u/s. |
| C2 | No fish habitat present and tributary is classed as S6 throughout. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-224-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------|----------------------|-----------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST13 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-224-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.0 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 50.0 Method: GE |
| | | Map #: | 093L033 | Fish Card: | N |
| | | U.T.M.: | 9.6027 .60275 | Field: | Yes |
| Date: | 10/11/96 | Agency: | C58 | Historical: | No |
| Time: | 16:15 | Survey Crew: | JHVS \ \ \ \ \ | Photos: | B10/19, 20 |
| | | | | Air Photos: | BCB 91181:180 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 2.2 | 1.0 | 0.8 | 0.8 | 0.8 | 0.5 |
| Av. Wet. Width (m): | 0.5 | Method Av. Wet. Width (m): | T | 0.6 | 0.7 | 0.6 | 0.2 | 0.6 | 0.4 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 37.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: |
| | High |

Cover

| | |
|-------------------|-----------------------|
| Cover Total % : | Method Cover Total %: |
| Dp Pool : | L.O.D.: |
| Crown Closure % : | Method Crown Closure: |
| | Boulder: |
| | In Veg.: |
| | Over Veg: |
| | Cutbank: |
| | Aspect : |
| | N |
| | Method Aspect: |
| | AE |

Discharge

| | |
|-----------------------|------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : |
| Discharge (m3/s) : | 0.01 |
| | Method Discharge (m3/s) : |
| | VO |

Specific Data

Banks

| | |
|----------------------|--------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No |
| Gravel: | No |
| Larges: | No |
| Bedrock: | No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | M |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 | 37.0 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-224-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 Gradient is 47% up a 4 m high bank at the mouth; no fish access. Further u/s the gradient is 20%+ and continuous; no fish habitat is present and trib. is classed as S6.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -14 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|-----------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST14 | Access: | II |
| Watershed Code: | 460-6006-508-722-ST -14 -000-000-000-000-000 | Reach No.: | I | Reach Length (km): | 0.6 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE MOUTH. | Site No.: | I | Length surveyed (m): | 50.0 Method: GE |
| | | Map #: | 093L033 | Fish Card: | N |
| | | U.T.M.: | 9.6025 .60275 | Field: | Yes |
| Date: 10/11/96 | Time: 16:30 | Agency: | C58 | Historical: | No |
| | | Survey Crew: | JH/SS \ \ \ \ \ | Air Photos: | BCB 91181:180 |
| | | Photos: | B10/23 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|----------------------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.9 | 0.9 | 0.8 | 1.7 | 1.5 | 0.7 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | 0.9 | 0.6 | 0.7 | 1.2 | 1.0 | 0.5 |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 18.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | I | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | |
|-------------------|---------|-----------------------|----------|
| Cover Total % : | | Method Cover Total %: | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: |
| Crown Closure % : | | Over Veg: | Cutbank: |
| | | Aspect : | S |
| | | Method Aspect: | AE |

Discharge

| | | | | |
|----------------------|------|-----------------------------|----|----------------------|
| Wetted Width (m): | | Method Wetted Width (m): | | <i>Specific Data</i> |
| Mean Depth (m): | | Method Mean Depth (m): | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | |

Reach Symbol

| |
|--|
| (Fish) |
| NS |
| I 18.0 |
| (Width, Valley: Channel, Slope) (Bed Material) |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: High |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | M |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1

Tributary flows down a 6 m high bank with a 52% gradient at its mouth; no fish access. Further u/s, the gradient is an average of 18%; no fish habitat is present and the trib. is classed as S6 throughout.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-265-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|----------------------------------|----------------------|--|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST17 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-265-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 180.0 Method: HC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6019 .60273 | Photos: | B10/24, 25; B11/2, 3 Air Photos: BCB 91181;180 |
| Date: 10/15/96 | Time: 9:30 | Agency: C58 | Survey Crew: JHV \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 1.8 | 1.8 | 2.2 | 2.0 | 1.9 | 2.3 |
| Av. Wet. Width (m): | 1.7 | Method Av. Wet. Width (m): | T | 1.9 | 1.7 | 1.7 | 1.6 | 1.3 | 1.8 |
| Av. Max. Rif. Depth (cm): | 17 | Av. Max. Riffle Depth (cm): | MS | 15 | 16 | 20 | | | |
| Av. Max. Pool Depth (cm): | 37 | Av. Max. Pool Depth (cm): | 17 | 60 | 25 | 25 | | | |
| Gradient (%): | 13.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 25 | Method Cover Total %: | GE | | | | |
| Dp Pool: 30 | L.O.D.: 20 | Boulder: 20 | In Veg.: 0 | Over Veg: 10 | Cutbank: 20 | | |
| Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect: N | Method Aspect: AE | | |

Discharge

| | | |
|----------------------|----------------------------|--------------------------|
| Wetted Width (m): | Method Wetted Width (m): | |
| Mean Depth (m): | Method Mean Depth (m): | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s): | 0.03 | Method Discharge (m3/s): |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (SP) | |
| 2 A 13.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 34 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.9 | % Unstable: | 20 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 25 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 1.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 80 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-265-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 3 | F | 0.2 |

Comments

- C1 Air Temp: - 4 C.
- C2 Steep creek with debris/rock jams present up to 1.1 m high (Photo B11/ 2). ~180 m u/s from the mouth, a 2.8 m high falls is a barrier to fish (Photo B11/3). Assume fish use in the lower 180 m up to the impassable falls.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-722-265-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|------------------------|------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST17 | Access: | H |
| Watershed Code: | 460-6006-508-722-265-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.0 Method: MW |
| Location: | SITE LOCATED JUST ABOVE THE STEEP SECTION IN R2, ~100 m U/S FROM THE REACH BREAK. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | U.T.M. : 9.6019 60273 | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/8/96 | Time: 12:30 | Agency: | CS8 | Photos: | DB4/7, 8 Air Photos: BCB 91181:180 |
| | Survey Crew: | DB\SS\ \ \ \ \ \ \ \ \ | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 1.4 | 1.2 | 2.9 | 1.8 | 1.0 | 1.7 |
| Av. Wet. Width (m): | 1.7 | Method Av. Wet. Width (m): | T | 1.4 | 1.2 | 2.9 | 1.8 | 1.0 | 1.7 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 25.0 | Method Gradient: | CL | | | | | | |
| % Pool: 40 | % Riffle: 60 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 20 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 10 | % Bedrock: | 10 |
| D90 (cm): | 50 | Compaction: | Medium |

Cover

| | | | |
|-------------------|------------|-----------------------|-------------------|
| Cover Total % : | 45 | Method Cover Total %: | GE |
| Dp Pool : 20 | L.O.D.: 40 | Boulder: 30 | In Veg.: 0 |
| | | Over Veg: 5 | Cutbank: 5 |
| Crown Closure % : | 20 | Method Crown Closure: | GE |
| | | Aspect : NW | Method Aspect: AE |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.07 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 25.0 | 1261 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.9 | % Unstable: | 40 |
| Textures Fines: | No | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 1 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-265-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 51 m length of stream, 1 pass with no lower net. No fish were caught. Assume no fish use based on steep gradient and impassable falls located d/s in R1. |
| C2 | Steep gully sidewalls with areas of instability; recommend buffer along the creek, should the area be logged. |
| C3 | LOD stepping occurs in the tributary. Many small drops ~0.5 - 2 m high are present. |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|---------------------------------|--|-------------------------------|--|--------------------|--|--|--|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST18 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-722-275-000-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 1.2 Method: MW | |
| Location: | | -450 m U/S FROM THE MOUTH, JUST U/S FROM ST18.1. | | Map #: | | 093L033 | | Site No.: | | 1 Length surveyed (m): 500.0 Method: IIC | |
| | | | | U.T.M.: | | 9.6017 .60274 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 10/11/96 | | Time: 9:00 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ | | Photos: | | A12/9, 10 Air Photos: BCB 91181:181 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 1.9 Method Av. Chan. Width (m): T | | 1.6 | | 1.9 | | 2.1 | | 2.0 1.8 2.3 | |
| Av. Wet. Width (m): | | 1.8 Method Av. Wet. Width (m): T | | 1.6 | | 1.7 | | 2.0 | | 2.0 1.6 2.1 | |
| Av. Max. Rif. Depth (cm): | | 10 Av. Max. Riffle Depth (cm): MS | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | 38 Av. Max. Pool Depth (cm): 10 | | | | | | | | | |
| Gradient (%): | | 7.0 Method Gradient: CL | | | | | | | | | |
| % Pool: 20 | | % Riffle: 60 | | % Run: 20 | | % Other: 0 | | Method: GE | | | |
| % Side Channel: | | 0-10 Method Side Channel: GE | | | | | | | | | |
| % Debris Area: | | 0-10 Method Debris Area: GE | | | | | | | | | |
| Cover | | | | | | | | | | | |
| Cover Total % : | | 75 Method Cover Total %: GE | | | | | | | | | |
| Dp Pool : 25 | | L.O.D.: 5 | | Boulder: 40 | | In Veg.: 0 | | Over Veg: 20 | | Cutbank: 10 | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : NE | | Method Aspect: AE | | | | | |
| Discharge | | | | Specific Data | | | | Banks | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) VO | | | | | | | | | |
| Discharge (m3/s) : | | 0.17 Method Discharge (m3/s) : | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | |
| | | | | (Fish) | | | | | | | |
| | | | | DV | | | | | | | |
| | | | | 2 A 7.0 1261 | | | | | | | |
| | | | | (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | |
| Height (m): | | 0.4 | | % Unstable: | | 10 | | | | | |
| Textures Fines: | | Yes | | Gravel: Yes | | Larges: No | | Bedrock: No | | | |
| Confinement: | | 2 | | | | | | | | | |
| Valley: Chan. Ratio: | | 1 | | | | | | | | | |
| Stage: | | M | | | | | | | | | |
| Flood Signs Ht(m): | | 0.3 | | Method Flood Signs: | | MS | | | | | |
| Braided: | | N | | Method Braided: | | GE | | | | | |
| Bars (%): | | 5 | | Method Bars: | | GE | | | | | |
| pH: | | 8.1 | | Method pH: | | PH | | | | | |
| O2 (ppm): | | | | Method Dissolved Oxygen: | | | | | | | |
| Water Temp. (°C): | | 4.0 | | Method Temperature: | | TC | | | | | |
| Turb. (cm): | | 200 | | Method Turbidity: | | GE | | | | | |
| Cond. (µmhos): | | | | Method Conductivity: | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 2 | | C | 0.1 |
| 3 | | C | 0.3 |
| 1 | | C | 0.3 |
| 3 | | F | 0.9 |

Comments

- C1 Air Temp: 1 C.
- C2 This site was not sampled but DV were caught u/s in R2. Assume DV are present in R1 also.
- C3 No access problems in the lower 65 m of stream. Restricted access further u/s. the 1.5 m chute in bedrock located 65 m u/s from the mouth may be passable by adults but not by juveniles and fry. At 280 m u/s from the mouth, ~2.8 m high bedrock chute is present; this may be passable in a sidechannel along the side of the chute. 3 m high falls located 900 m u/s from the mouth are steep and confined and are a barrier to fish.
- C4 Sections of potential BT spawning are present in the lower 50 m of St18.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-722-275-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------------|----------------------|--------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST18 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-275-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~1700 m U/S FROM THE MOUTH, ~100 m D/S FROM TOP OF R2. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6017 .60274 | Photos: | A11/15, 16 Air Photos: BCB 91181:181 |
| Date: 10/8/96 | Time: 12:00 | Agency: C58 | Survey Crew: RDICP \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.6 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 0.6 | Method Av. Wet. Width (m): | T | 0.6 | 0.6 | 0.9 | 0.5 | 0.5 | 0.6 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | 0.6 | 0.6 | 0.9 | 0.5 | 0.5 | 0.6 |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 30 | % Run: 50 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 20 | L.O.D.: 0 | Boulder: 0 | In Veg.: 0 | Over Veg: 40 | Cutbank: 40 | | | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : NE | Method Aspect: AE | | | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV |
| I A 1.5 | 2800 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 80 | Small (2-16mm): | 70 |
| | | Large (16-64mm): | 10 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 2 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | 1 | | |
| Flood Signs 1lt(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 124 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 7 | 59 - 80 | J | R | | | EL |

Obstructions

Comments

- C1 Electrofished 38 m length of stream, 1 pass with no lower net.
- C2 Very steep section with a 3 m high falls d/s in R1; the DV caught at this site must therefore be residents.
- C3 Sections with good potential spawning were observed in this reach.
- C4 Lat/Lon of helicopter landing site: 54 22.42 127 26.87
- C5 St18.2 was surveyed; there is no defined channel and it is bedded with moss.

DFO/MoELP Stream Survey Form

2~Mur-9~

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|--------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST18 | Access: | H |
| Watershed Code: | 460-6006-508-722-275-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 0.7 Method: MW |
| Location: | ~350 m U/S FROM THE BOTTOM OF R3, NEAR THE POND ABOVE THE ST18.3 CONFLUENCE. | Site No.: | 3 | Length surveyed (m): | 400.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/8/96 | Time: 14:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A11/17, 18 Air Photos: BCB 91181,181 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.9 | 1.3 | 1.6 | 1.7 | 1.2 | 0.9 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 3 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 17 | Av. Max. Pool Depth (cm): | 3 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 80 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 60 | Small (2-16mm): | 30 |
| | | Large (16-64mm): | 30 |
| % Larges: | 35 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 5 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 10 | Compaction: | High |

Cover

| | | | |
|-------------------|------------|-----------------------|-------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool: 20 | L.O.D.: 30 | Boulder: 10 | In Veg.: 10 |
| | | Over Veg: 0 | Cutbank: 30 |
| Crown Closure % : | | Method Crown Closure: | Aspect : W |
| | | Method Aspect: | AE |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV* |
| 1 A 7.0 | 1630 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.9 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 130 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 2 | 96 - 115 | A | S | M | | EL |

Obstructions

Comments

- C1 Electrofished 80 m length of stream; two ripe DV males were caught at the bottom of the site. Suspect DV are spawning in this section.
- C2 The pond contained no inlet or outlet channels and was perched on a bench above Th18.
- C3 Not able to sample in R4; classed as suspected S4 habitat for the lower 1 km of stream.
- C4 Lat/Lon of helicopter landing site: 54 22.40 127 26.48
- C5 No channel was observed for St18.3.

27-Mar-97

Stream: STARR C. TRIBUTARY

460-6006-508-722-275-ST-18.-1 -000-000-000-000

| | | | | | |
|------------------------|---|------------------------|---|---------------------------|---|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST18.1 | Access: | FT |
| Watershed Code: | 460-6006-508-722-275-ST -18.-1 -000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE MOUTH. | Map #: | 093L033 | Site No.: | 4 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M.: | 9.6014 .60272 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/11/96 | Time: 9:45 | Agency: C58 | Survey Crew: RD/CP \ \ \ \ \ \ \ \ | Photos: | A12/11, 12 Air Photos: BCB 91181:181 |

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.5 | Method Av. Chan. Width (m): | T | 1.5 | 1.4 | 1.9 | 1.7 | 1.3 | 1.2 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 25.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 80 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

| | | | | | | | |
|---------------------|----|-----------------------|------------|-------------|----------------|----|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool: 10 L.O.D.: | 10 | Boulder: 65 | In Veg.: 0 | Over Veg: 0 | Cutbank: | 15 | |
| Crown Closure % : | 30 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: | AE | |

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : |

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| 2 A 25.0 | 1351 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

| | | | |
|---------------------------|----|------------------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 35 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 30 |
| % Larges: | 55 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 5 | % Bedrock: | 5 |
| D90 (cm): | 15 | Compaction: | High |

| | | | | | |
|-----------------------------|-----|---------------------------------|--------------------|-----------------|----|
| Height (m): | 0.5 | % Unstable: | 10 | | |
| Textures Fines: | Yes | Gravel: No | Larges: Yes | Bedrock: | No |
| Confinement: | 2 | | | | |
| Valley: Chan. Ratio: | 1 | | | | |
| Stage: | M | | | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | | | MS |
| Braided: | N | Method Braided: | | | GE |
| Bars (%): | 5 | Method Bars: | | | GE |
| pH: | 8.0 | Method pH: | | | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | | | |
| Water Temp. (°C): | 3.5 | Method Temperature: | | | TC |
| Turb. (cm): | 200 | Method Turbidity: | | | GE |
| Cond. (µmhos): | | Method Conductivity: | | | |

DFO/MoELP Stream Survey Form

2~Mar~9~

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-ST-18.-1 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | F | 0.0 |
| | 1 | C | 0.0 |
| | 1 | X | 0.0 |

Comments

- C1 Air Temp: 0.5 C.
- C2 A fish sample site was conducted u/s in R2 and no fish were caught.
- C3 The gradient is 13% in the lower 20 m of stream. The gradient increases to 18% at 23 m and a 0.5 m high falls is present followed by a 0.5 m high x 2 m long chute at 32 m u/s from the mouth. ~45 m u/s from the mouth, ~1m high debris jam was observed; the gradient increases to 45% and continues u/s with a series of falls present.
- C4 St18.1 is inaccessible to fish. Possible fish use in the lower 30 m of creek but the habitat is poor. Trib. is classed as S6 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-ST-18-1 -000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST18.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-275-ST-18-1 -000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.4 Method: MW |
| Location: | SITE LOCATED ~450 m U/S FROM THE REACH BREAK. | Site No.: | 5 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/8/96 | Time: 11:15 | Agency: C58 | Survey Crew: DB\SS \ \ \ \ \ \ | Photos: | DB4/5, 6 Air Photos: BCB 91181:181 |
| | | Map #: | 093L033 | | |
| | | U.T.M. : | 9.6014 .60272 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.9 | 0.7 | 1.3 | 0.6 | 0.7 | 0.6 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.9 | 0.7 | 1.3 | 0.6 | 0.7 | 0.6 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: 90 | % Riffle: 10 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | HC | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|-------------|--------------|----------------|----|--|--|--|
| Cover Total % : | 100 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 0 | L.O.D.: 0 | Boulder: 0 | In Veg.: 20 | Over Veg: 40 | Cutbank: | 40 | | | |
| Crown Closure % : | 20 | Method Crown Closure: | GE | Aspect : NW | Method Aspect: | AE | | | |

Discharge

| | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|--|
| | (Fish) | |
| | NF | |
| 1 A 5.0 | 8200 | |
| (Width, Valley: Channel, Slope) | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 20 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 0 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-275-ST-18-1 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Electrofished ~100 m length of stream, 1 pass with no lower net. No fish were caught.
- C2 A small pond is located u/s of site.
- C3 Lat/Lon of helicopter landing site: 54 22.79 127 26.27

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-300-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------|----------------------|------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST19 | Access: | FT |
| Watershed Code: | 460-6006-508-722-300-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 240.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/11/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD \ \ \ \ \ | Photos: | A12/13, 14 |
| | | Map #: | 093L033 | Air Photos: | BCB 91181:181 |
| | | U.T.M.: | 9.6017 .60274 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 1.1 | 0.9 | 0.6 | 0.8 | 1.2 | 0.7 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 1.1 | 0.9 | 0.6 | 0.8 | 1.2 | 0.7 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 36 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | |
| Dp Pool: 30 | L.O.D.: 10 | Boulder: 30 | In Veg.: 0 | Over Veg: 10 | Cutbank: 20 | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect: NE | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| I A 7.0 | 0460 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 40 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 35 |
| % Larges: | 60 | Small cobble (64-128mm): | 45 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 13 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-300-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | St19 flows into a Starr C. sidechannel. |
| C2 | ~80 m u/s from the mouth, 3 - 0.5 m high drops over boulders were observed; definite restrictions if not barriers to DV. DV were caught u/s in R2; suspect they are residents based on the access problems here in R1. |
| C3 | Air Temp: 2 C. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-300-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|--------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST19 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-300-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.4 Method: MW |
| Location: | ~200 m D/S FROM ST19.2 CONFLUENCE. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/8/96 | Time: 12:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | Photos: | A11/13, 14 Air Photos: BCB 91181:181 |
| | | Map #: | 093L033 | | |
| | | U.T.M.: | 9.6017 .60274 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.7 | 0.9 | 1.0 | 0.8 | 0.8 | 0.7 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.7 | 0.9 | 1.0 | 0.8 | 0.8 | 0.7 |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 4 | | | | | | |
| Gradient (%): | 2.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 40 | % Run: | 40 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 80 | Small (2-16mm): | 50 |
| | | Large (16-64mm): | 30 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 3 | Compaction: | High |

Cover

| | | | |
|-------------------|-----------|-----------------------|-------------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool: 20 | L.O.D.: 0 | Boulder: 0 | In Veg.: 20 |
| | | Over Veg: 40 | Cutbank: 20 |
| Crown Closure % : | | Method Crown Closure: | Aspect: NE |
| | | | Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| 1 A 2.5 | 2800 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.8 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (umhos): | 101 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-300-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 1 | 86 | J | R | | | EL |
| DV | 3 | 106, 111 | A | S | M | | EL |

Obstructions

Comments

- C1 Electrofished 45 m length of stream, 1 pass with no lower net. The 2 adult DV caught were ripe males; suspect DV are spawning in R2. The DV are assumed to be residents due to the barriers d/s in R1.
- C2 Small, low gradient, meandering creek.
- C3 Small pockets with suitable DV spawning habitat were observed.
- C4 Assume fish use in lower R2 and suspect fish use in the upper 560 m of R2.
- C5 St19.1 and St19.3 have no defined channels. St19.2 and St19.4 were observed but do not contain fish habitat; suspect fish use in the lower 100 m of St19.4.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -20 -000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|---------------------------------|--|-------------------------------|--|--------------------|--|--|--|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST20 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-722-ST -20 -000-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 0.2 Method: MW | |
| Location: | | ~60 m U/S FROM THE CONFLUENCE. | | Map #: | | 093L033 | | Site No.: | | 1 Length surveyed (m): 320.0 Method: HC | |
| | | | | U.T.M. : | | 9.6017 .60274 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 10/11/96 | | Time: 11:30 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ | | Photos: | | A12/15, 16 Air Photos: BCB 91181:181 | |
| Channel Characteristics | | | | | | | | | | Bed Material | |
| | | | | Specific Data | | | | | | | |
| Av. Chan. Width (m): | | 2.4 Method Av. Chan. Width (m): | | T | | 2.7 2.2 2.5 2.1 2.3 | | % Fines (<2mm): | | 5 % Fines (<2mm): 5 | |
| Av. Wet. Width (m): | | 1.8 Method Av. Wet. Width (m): | | T | | | | % Gravels: | | 20 Small (2-16mm): 5 | |
| Av. Max. Rif. Depth (cm): | | 10 Av. Max. Riffle Depth (cm): | | MS | | | | | | Large (16-64mm): 15 | |
| Av. Max. Pool Depth (cm): | | 25 Av. Max. Pool Depth (cm): | | 10 | | | | % Larges: | | 75 Small cobble (64-128mm): 40 | |
| Gradient (%): | | 9.0 Method Gradient: | | CL | | | | | | Large cobble (128-256mm): 25 | |
| % Pool: 15 | | % Riffle: 80 | | % Run: 5 | | % Other: 0 | | Method: GE | | Boulder cobble (>256mm): 10 | |
| % Side Channel: | | 0 Method Side Channel: | | GE | | | | | | % Bedrock: 0 % Bedrock: 0 | |
| % Debris Area: | | 0-10 Method Debris Area: | | GE | | | | | | D90 (cm): 25 Compaction: High | |
| Cover | | | | | | | | | | Banks | |
| Cover Total % : | | 90 Method Cover Total %: | | GE | | | | | | Height (m): 0.8 % Unstable: 10 | |
| Dp Pool: 10 L.O.D.: 5 | | Boulder: 70 | | In Veg.: 0 | | Over Veg: 10 | | Cutbank: 5 | | Textures Fines: Yes Gravel: No Larges: Yes Bedrock: No | |
| Crown Closure % : | | 50 Method Crown Closure: | | GE | | Aspect: SW | | Method Aspect: AE | | Confinement: 2 | |
| Discharge | | | | | | | | | | | |
| | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | Valley: Chan. Ratio: 1 | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | Stage: M | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | | | Flood Signs Ht(m): 0.4 Method Flood Signs: MS | |
| Discharge (m3/s) : | | 0.08 Method Discharge (m3/s) : | | | | | | | | Braided: N Method Braided: GE | |
| Reach Symbol | | | | | | | | | | | |
| | | | | (Fish) | | | | | | | |
| | | | | (DV) | | | | | | | |
| | | | | 2 A 9.0 | | | | 1270 | | | |
| | | | | (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | |
| | | | | | | | | | | pH: 8.1 Method pH: PH | |
| | | | | | | | | | | 02 (ppm): Method Dissolved Oxygen: | |
| | | | | | | | | | | Water Temp. (°C): 3.5 Method Temperature: TC | |
| | | | | | | | | | | Turb. (cm): 200 Method Turbidity: GE | |
| | | | | | | | | | | Cond. (µmhos): Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -20 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.0 |
| | 1 | R | 0.2 |

Comments

- C1 ~0.6 m high debris jam at the mouth is accessible at high flows. Several small drops (~0.2 - 0.5 m high) are present throughout R1.
- C2 The reach break is ~200 m u/s from the mouth; the gradient increases from 7 - 10% to ~16% and the channel enters a confined gully. At 320 m u/s from the mouth, the gradient is 20% and continuous; fish distribution ends at this point as the gradient is too high for fish use.
- C3 An unstable bank on river left was observed and is located 222 m u/s from the mouth.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -22 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST22 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-ST -22 -000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | -300 m U/S FROM THE MOUTH, ~25 m D/S FROM THE ST22.1-ST22 CONFLUENCE. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6010 .60279 | Photos: | DB4/3, 4 Air Photos: BCB 91181:181 |
| Date: | 10/8/96 | Time: | 11:30 | Agency: | C58 |
| | | Survey Crew: | DB\SS \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.2 | 1.2 | 2.0 | 1.9 | 1.9 | 1.4 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.2 | 1.2 | 2.0 | 1.9 | 1.9 | 1.4 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 23 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 2.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 5 | % Riffle: | 95 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 55 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 10 | L.O.D.: | 0 | Boulder: | 25 | In Veg.: | 0 | Over Veg: | 60 |
| Crown Closure % : | 10 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | Cutbank: | 5 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | | |
|---------------------------------|----------------|------|
| | (Fish) | |
| | NF | |
| 2 | A | 2.5 |
| (Width, Valley: Channel, Slope) | | 1360 |
| | (Bed Material) | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 60 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 14 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 30 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.15 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | TC |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -22 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 5 | F | 0.0 |

Comments

- C1 Electrofished 50 m length of stream, 1pass with no lower net. No fish were caught.
- C2 Two sets of falls were observed at the mouth of St22, the first was 5 m high: impassable to fish (Photo A12/17).
- C3 The sample site contained good fish habitat. The barrier d/s must account for the absence of fish, and the tributary is classed as S6 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST-22-1 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST22.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-ST-22-1 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | ~100 m U/S FROM THE MOUTH, UPPER MEADOW ON BENCH. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6008 .60282 | Photos: | DB4/1, 2 Air Photos: BCB 91181:181 |
| Date: 10/8/96 | Time: 10:00 | Agency: C58 | Survey Crew: DB\SS \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.4 | 1.1 | 0.9 | 1.0 | 1.2 | 0.5 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.4 | 1.1 | 0.9 | 1.0 | 1.2 | 0.5 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 33 | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 85 | % Riffle: | 15 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 75 | % Fines (<2mm): | 75 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 5 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 5 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | | Method Cover Total %: | GE |
| Dp Pool : | 20 | L.O.D.: | 0 |
| | | Boulder: | 0 |
| | | In Veg.: | 0 |
| | | Over Veg: | 65 |
| | | Cutbank: | 15 |
| Crown Closure % : | 5 | Method Crown Closure: | GE |
| | | Aspect : | SE |
| | | Method Aspect: | AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I C 2.0 | 7210 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 20 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST-22.-1 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Electrofished 65 m length of stream, 1 pass with no lower net. No fish were caught. Assume barrier d/s at the mouth of St22 has prevented fish access to St22.1.
- C2Lat/Lon of helicopter landing site: 54 23.64 127 26.98

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-339-000-000-000-000-000-000

| Header Information | | | | | | | | | | |
|--|--------------|-----------------------------|------------|---|----------------|-----------------------------------|-----|---------------------------|-----|--|
| Stream Name: STARR C. TRIBUTARY | | Stream "Local": ST23 | | Access: FI | | | | | | |
| Watershed Code: 460-6006-508-722-339-000-000-000-000-000-000 | | Map #: 093L033 | | Reach No.: 2 | | Reach Length (km): 2.2 | | Method: MW | | |
| Location: ~150 m U/S FROM THE MOUTH. | | U.T.M.: 9.6011 .60283 | | Site No.: 1 | | Length surveyed (m): 150.0 | | Method: HC | | |
| Date: 10/11/96 | | Time: 13:00 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | | Fish Card: N | | |
| | | | | | | Field: Yes | | Historical: No | | |
| | | | | | | Photos: A12/18, 19 | | Air Photos: BCB 91181:181 | | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | |
| Av. Chan. Width (m): | 2.3 | Method Av. Chan. Width (m): | T | 3.2 | 2.5 | 1.2 | 3.1 | 2.0 | 1.6 | |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | | |
| Av. Max. Pool Depth (cm): | 21 | Av. Max. Pool Depth (cm): | 8 | | | | | | | |
| Gradient (%): | 25.0 | Method Gradient: | CL | | | | | | | |
| % Pool: 5 | % Riffle: 95 | % Run: 0 | % Other: 0 | Method: GE | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | HC | | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | | |
| Cover | | | | Banks | | | | | | |
| Cover Total % : | 90 | Method Cover Total %: | GE | | | | | | | |
| Dp Pool: 15 | L.O.D.: 5 | Boulder: 80 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | | | |
| Crown Closure % : | 75 | Method Crown Closure: | GE | Aspect: SW | Method Aspect: | AE | | | | |
| Discharge | | | | Specific Data | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | | | | | | | | |
| Reach Symbol | | | | (Fish) | | | | | | |
| | | | | NS | | | | | | |
| | | | | 2 A 25.0 1171 | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | |
| | | | | Height (m): 0.8 % Unstable: 5 Textures Fines: Yes Gravel: Yes Larges: No Bedrock: No Confinement: 2 Valley: Chan. Ratio: 1 Stage: M Flood Signs Ht(m): 0.4 Method Flood Signs: MS Braided: N Method Braided: GE Bars (%): 10 Method Bars: GE pH: 8.2 Method pH: PH O2 (ppm): Method Dissolved Oxygen: Water Temp. (°C): 4.0 Method Temperature: 10 Turb. (cm): 200 Method Turbidity: GE Cond. (µmhos): Method Conductivity: | | | | | | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-339-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Air Temp: 4 C. |
| C2 | ~1 m high drop is present at the mouth of St23. In the lower 50 m, the gradient is 5%; there may be some fish use in this bottom section (R1) should a major flood event occur. |
| C3 | Reach 3 is very steep and confined; no fish use in this reach. |
| C4 | Creek is dynamic and has a high potential to transport debris. |
| C5 | A large, unstable bank was observed on river left ~100 m u/s from the confluence. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-371-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|----------------------|--------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST26 | Access: | FT |
| Watershed Code: | 460-6006-508-722-371-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | ~50 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 70.0 Method: HC |
| | | Map #: | 093L033 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6007 .60288 | Photos: | A12/21, 22 Air Photos: BCB 91181:184 |
| Date: | 10/11/96 | Time: | 13:50 | Agency: | C58 |
| Survey Crew: | RD\CP \ \ \ \ \ \ | | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 3.8 | Method Av. Chan. Width (m): | T | 4.5 | 4.7 | 3.7 | 3.8 | 4.1 | 2.2 |
| Av. Wet. Width (m): | 2.1 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 15 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 36 | Av. Max. Pool Depth (cm): | 15 | | | | | | |
| Gradient (%): | 18.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 90 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|----------|---|
| Cover Total % : | 90 | Method Cover Total %: | GE | | | | | | | | |
| Dp Pool : | 15 | L.O.D.: | 0 | Boulder: | 80 | In Veg.: | 0 | Over Veg: | 0 | Cutbank: | 5 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE | | | | |

Discharge

| | | | | |
|-----------------------|------|------------------------------|----|---------------|
| Wetted Width (m) : | | Method Wetted Width (m) : | | Specific Data |
| Mean Depth (m) : | | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) : | VO | |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 4 A 18.0 | 1171 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 75 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 45 |
| % Bedrock: | 10 | % Bedrock: | 10 |
| D90 (cm): | 43 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2~Mar-9~

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-371-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction Ht(m) | Type | Location |
|-------------------|------|----------|
| 2 | F | 0.0 |
| 2 | F | 0.0 |

Comments

- C1 Air Temp: 6 C.
- C2 This site was not fish sampled. The sample site located u/s in R2 had no fish.
- C3 The gradient is 10% in the lower 20 m of stream; further u/s the gradient increases to 23%. At 47 m u/s from the mouth, two 2 m high bedrock falls lying on top of each other are present: impassable to fish (Photo A12/20).
- C4 Channel is very confined with steep sideslopes u/s, and throughout R2.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-371-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|--------------------|---|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST26 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-371-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.5 Method: MW |
| Location: | ~350 m U/S FROM THE MOUTH, SAMPLED U/S ON ST26 TO THE FORK IN THE CHANNEL. | Map #: | 093L033 | Site No.: | 2 Length surveyed (m): 120.0 Method: HC |
| | | U.T.M.: | 9.6007 .60288 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/9/96 | Time: 9:40 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | Photos: | A11/11, 12 Air Photos: BCB 91181:184 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 5.0 | Method Av. Chan. Width (m): | T | 5.6 | 4.5 | 4.4 | 4.9 | 5.7 | 5.1 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 15 | L.O.D.: | 10 | Boulder: | 70 | In Veg.: | 0 | Over Veg: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | E | Method Aspect: | AE | Cutbank: | 5 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 5 A 8.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 30 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.3 | % Unstable: | 10 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.6 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | | Method Bars: | |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 127 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-371-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Electrofished 78 m length of stream, 1 pass with no lower net. No fish were caught. Assume barrier d/s at the base of R1 is an access problem for fish and is the reason no fish are present in R2.
- C2Large, dynamic creek confined within 1 -2 m high banks. Large pieces of debris are present within the channel.
- C3Limited spawning potential.
- C4Lat/Lon of helicopter landing site: 54 24.03 127 27.40

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -27 -000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|---------------------------------|--|--------------------|--|--|--|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST27 | | Access: | | FT | |
| Watershed Code: | | 460-6006-508-722-ST -27 -000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 0.1 Method: MW | |
| Location: | | ~50 m U/S FROM THE MOUTH. | | Map #: | | 093L043 | | Site No.: | | 1 Length surveyed (m): 140.0 Method: IIC | |
| | | | | U.T.M. : | | 9.6006 .60293 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 10/11/96 | | Time: 15:10 | | Agency: C58 | | Survey Crew: RD\CP\ \ \ \ \ \ \ | | Photos: | | A12/23, 24 Air Photos: BCB 91181:184 | |
| Channel Characteristics | | | | | | | | | | Bed Material | |
| | | | | | | | | | | Specific Data | |
| Av. Chan. Width (m): | | 2.3 | | Method Av. Chan. Width (m): | | T | | 2.4 | | 3.1 2.8 2.1 1.9 1.6 | |
| Av. Wet. Width (m): | | 1.3 | | Method Av. Wet. Width (m): | | T | | | | | |
| Av. Max. Rif. Depth (cm): | | 6 | | Av. Max. Riffle Depth (cm): | | MS | | | | | |
| Av. Max. Pool Depth (cm): | | 21 | | Av. Max. Pool Depth (cm): | | 6 | | | | | |
| Gradient (%): | | 11.0 | | Method Gradient: | | CL | | | | | |
| % Pool: 15 | | % Riffle: 80 | | % Run: 5 | | % Other: 0 | | Method: GE | | | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | | | | |
| % Debris Area: | | 0-10 | | Method Debris Area: | | GE | | | | | |
| Cover | | | | | | | | | | Banks | |
| Cover Total % : | | 60 | | Method Cover Total %: | | GE | | | | | |
| Dp Pool: 15 | | L.O.D.: 5 | | Boulder: 80 | | In Veg.: 0 | | Over Veg: 0 | | Cutbank: 0 | |
| Crown Closure % : | | | | Method Crown Closure: | | | | Aspect : SW | | Method Aspect: AE | |
| Discharge | | | | | | | | | | | |
| | | | | | | | | | | Specific Data | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | | | | |
| Discharge (m3/s) : | | 0.06 | | Method Discharge (m3/s) : | | | | | | | |
| Reach Symbol | | | | | | | | | | | |
| | | | | | | | | | | (Fish) | |
| | | | | | | | | | | NS | |
| | | | | | | | | | | 2 A 11.0 1180 | |
| | | | | | | | | | | (Width, Valley: Channel, Slope) (Bed Material) | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -27 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | ~1 m high drop over cobble was observed at the mouth; restricted access. May have some fish use in the lower 100 m of creek. The reach break is at 120 m u/s from the mouth and the gradient in R2 is a continuous 22%; R2 is too steep for fish use and the fish distribution ends at the reach break. The channel in R2 is very confined with steep sideslopes |
| C2 | Suspect unstable slumps further u/s due to the red fines present within the bed material (high compaction). |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -27A-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|--------------------|--|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST27A | Access: | FT |
| Watershed Code: | 460-6006-508-722-ST -27A-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.9 Method: MW |
| Location: | UNMAPPED TRIBUTARY LOCATED ON RIVER RIGHT ~150 m U/S FROM ST27. | Map #: | 093L043 | Site No.: | 1 Length surveyed (m): 40.0 Method: HC |
| | | U.T.M.: | 9.6003 .60293 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/11/96 | Time: 15:14 | Agency: C58 | Survey Crew: RD/CP \ \ \ \ \ \ | Photos: | A13/2 Air Photos: BCB 91181:184 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.5 | 0.6 | 1.1 | 0.9 | 0.7 | 1.2 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 4 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 8 | Av. Max. Pool Depth (cm): | 4 | | | | | | |
| Gradient (%): | 40.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 5 | % Riffle: | 95 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 5 | L.O.D.: | 10 | Boulder: | 75 | In Veg.: | 5 | Over Veg: | 0 |
| Crown Closure % : | 30 | Method Crown Closure: | GE | Aspect : | NE | Method Aspect: | AE | Cutbank: | 5 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 A 40.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 85 | Small cobble (64-128mm): | 35 |
| | | Large cobble (128-256mm): | 45 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.8 | % Unstable: | 30 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | Yes |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST-27A-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Air Temp: 6 C. |
| C2 | Creek is inaccessible to fish; the gradient is continuously steep at ~35 - 45%. |
| C3 | Tributary enters the Starr C. mainstem within ~200 m long x - 50 m high very unstable gravel/red mud bank (Photo A13/1). |
| C4 | A second small seepage was observed and enters Starr C. at the top of the slump; the channel width is <30 cm wide, discharge is a trickle flow and the gradient is ~30 - 40%. The tributary is very small and likely dewatered. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -28 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST28 | Access: | FT |
| Watershed Code: | 460-6006-508-722-ST -28 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~100 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/11/96 | Time: 16:00 | Agency: C58 | Survey Crew: RDICP \ \ \ \ \ | Photos: | A13/3, 4 Air Photos: BCB 91181:184 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.6004 .60294 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 0.9 | 1.8 | 1.8 | 2.0 | 1.3 | 2.2 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 24 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 28.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|------------|-----------------------|------------|-------------|-------------------|--|--|--|--|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 25 | L.O.D.: 15 | Boulder: 60 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | | | |
| Crown Closure % : | 40 | Method Crown Closure: | GE | Aspect : E | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 2 A 28.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 20 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 29 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.0 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.4 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-308-722-ST-28-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | The lower 30 m of stream-gradient ~11%; above 30 m, the gradient is 20 - 35%. Possible fish use in the lower 30 m. Above 30 m in R1, the creek is too steep to support fish. |
| C2 | A sample site is located u/s in R2; no fish were caught. |
| C3 | Channel is confined within steep sideslopes. Evidence of unstable banks in the lower 100 m was noted. |
| C4 | Below creek mouth, water flows in a Starr C. flood channel for ~120 m. Willow overstory is dense and channel is not well defined. Good fish access throughout this brushy section. |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -28 -000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST28 | Access: | H |
| Watershed Code: | 460-6006-508-722-ST -28 -000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.6 Method: MW |
| Location: | UPPER MEADOW, ~300 m U/S FROM THE REACH BREAK. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6004 .60294 | Photos: | DB3/8, 9 Air Photos: BCB 91181:184 |
| Date: | 10/8/96 | Time: | 9:30 | Agency: | C58 |
| | | Survey Crew: | DB\SS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 0.7 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 0.7 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 90 | % Riffle: | 10 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----|-----------------------|----|----------|----|----------------|----|------------|----|
| Cover Total % : | 100 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 20 | Over Veg.: | 40 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | SE | Method Aspect: | AE | Cutbank: | 40 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| I B 1.0 | 1720 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 70 | Small (2-16mm): | 40 |
| | | Large (16-64mm): | 30 |
| % Larges: | 20 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 12 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 0.7 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -28 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1 Electrofished 87 m length of stream, 1 pass with no lower net. No fish were caught.
- C2 Stable creek drops out of meadow into a steep gradient section down to Starr C.
- C3 Lat/Lon of helicopter landing site: 54 24.23 127 28.03

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-445-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST29 | Access: | FT |
| Watershed Code: | 460-6006-508-722-445-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.4 Method: MW |
| Location: | ~180 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 410.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/11/96 | Time: 16:50 | Agency: C58 | Survey Crew: RDCP \ \ \ \ \ | Photos: | A13/5, 6 Air Photos: BCB 91181:184 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.7 | 0.9 | 0.8 | 1.3 | 0.7 | 0.4 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.7 | 0.9 | 0.8 | 1.3 | 0.7 | 0.4 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 10 | | | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 70 | % Run: | 15 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 15 |
| % Larges: | 75 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 23 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 95 | Method Cover Total %: | GE |
| Dp Pool : | 5 | L.O.D.: | 0 |
| Boulder: | 55 | In Veg.: | 0 |
| Over Veg: | 30 | Cutbank: | 10 |
| Crown Closure % : | 30 | Method Crown Closure: | GE |
| Aspect : | SW | Method Aspect: | AE |

Banks

| | | | |
|----------------------|------|--------------------------|-----|
| Height (m): | 0.6 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | Yes |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.25 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| I A 10.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-445-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 2 | X | 0.4 |

Comments

- C1 Air Temp: 5 C.
- C2 The site was not fish sampled. Possible fish use in R1 i.e. the lower 410 m of stream. Habitat is marginal and creek is small, but possibly could support DV residents. Limited access due to steep gradient at the mouth (11%). Pockets suitable for spawning were observed between 180 - 220 m u/s from the mouth.
- C3 Very small creek frequently confined within 6-8 m high sideslopes from bench
- C4 R1 ends ~400 m; the gradient increases to ~15% and ~1.5 m high drop over boulder/debris is present. U/S from R1 is classed at S6 habitat.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -30 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|--------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST30 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-ST -30 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/22/96 | Time: 15:00 | Agency: C58 | Survey Crew: RD\CP \ \ \ \ \ | Photos: | A14/21, 22 Air Photos: BCB 91181-184 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.6000 .60301 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.8 | Method Av. Chan. Width (m): | T | 0.9 | 0.7 | 1.1 | 0.7 | 0.6 | 0.6 |
| Av. Wet. Width (m): | 0.8 | Method Av. Wet. Width (m): | T | 0.9 | 0.7 | 1.1 | 0.7 | 0.6 | 0.6 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 24 | Av. Max. Pool Depth (cm): | 6 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 30 | % Run: 60 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: 10 | L.O.D.: 0 | Boulder: 0 | In Veg.: 0 | Over Veg: 60 | Cutbank: 30 | | | | |
| Crown Closure % : | 70 | Method Crown Closure: | GE | Aspect: S | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|----------------------------|---------------------------|--|--|--|--|--|--|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | | | | | | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | | | | | | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| I D 5.0 | 4330 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 35 | Small (2-16mm): | 25 |
| | | Large (16-64mm): | 10 |
| % Larges: | 25 | Small cobble (64-128mm): | 25 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 5 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 30 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-ST -30 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electroshocked 50 m length of stream, 1 pass with no lower net. No fish were caught. Observed several DV redds at the mouth of St30; assume fish use to the top of R1. |
| C2 | The base of R2 is on a bench; the gradient is 14% with up to 1 m high drops down the bench; the pond at the top of R2 inaccessible. |
| C3 | The shallow pond was frozen at the time of surveying and could not be sampled. |
| C4 | R1 is classed as S4 habitat and R2 is suspected S4 habitat. |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-486-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|---------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST31 | Access: | FT |
| Watershed Code: | 460-6006-508-722-486-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~500 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 650.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5995 .60306 | Photos: | B6/6, 7 Air Photos: BC 7326:253 |
| Date: 10/3/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD/SS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|--------------|
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 2.4 | 2.6 | 2.5 | 2.7 |
| Av. Wet. Width (m): | 2.4 | Method Av. Wet. Width (m): | T | 2.0 | 2.6 | 2.4 | 2.5 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | |
| Av. Max. Pool Depth (cm): | 27 | Av. Max. Pool Depth (cm): | 9 | | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|
| Cover Total % : | 90 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 10 | L.O.D.: | 0 | Boulder: | 90 | In Veg.: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | SW | Method Aspect: | AE |

Discharge

| | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 3 A 7.0 | 0181 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 40 |
| % Bedrock: | 5 | % Bedrock: | 5 |
| D90 (cm): | 73 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 2 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 8.3 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-486-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | X | 0.7 |

Comments

- C1 Electrofished 45 m length of stream, 1 pass with no lower net. No fish were caught or observed.
- C2 The lower 200 m of stream is in a fan and potential spawning sections are very limited. U/S of 200 m, the channel is confined. Bed material consists of large boulders with some bedrock. No spawning potential is present in this section. 650 m u/s from the mouth is the reach break; the gradient is 12 - 13% and a 1 m high drop over boulders and debris is present and is a restriction to fish. Further u/s the habitat is marginal but could be accessed by fish. The gradient also steepens moving u/s. Assume fish distribution up to 650 m.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-503-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST32 | Access: | FT |
| Watershed Code: | 460-6006-508-722-503-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~170 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 400.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5993 60308 | Photos: | A10/24, 25 Air Photos: BC 7326:253 |
| Date: 10/7/96 | Time: 10:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|
| Av. Chan. Width (m): | 3.1 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | |
| Av. Wet. Width (m): | 2.1 | Method Av. Wet. Width (m): | T | 4.1 | 4.2 | 2.8 | 4.4 |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | 1.7 | 1.1 | | |
| Av. Max. Pool Depth (cm): | 28 | Av. Max. Pool Depth (cm): | 7 | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | |
| % Pool: 15 | % Riffle: 75 | % Run: 10 | % Other: 0 | Method: GE | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | |
| % Debris Area: | 25 | Method Debris Area: | GE | | | | |

Cover

| | | | | | | | |
|-------------------|------------|-----------------------|------------|----------------|------------|--|--|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | |
| Dp Pool: 20 | L.O.D.: 20 | Boulder: 60 | In Veg.: 0 | Over Veg: 0 | Cutbank: 0 | | |
| Crown Closure % : | | Method Crown Closure: | Aspect: NE | Method Aspect: | AE | | |

Discharge

| | | | |
|-----------------------|------------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : | VO | |
| Discharge (m3/s) : | 0.08 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 3 A 8.0 | 0460 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|-----|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 45 | Small (2-16mm): | 15 |
| | | Large (16-64mm): | 30 |
| % Larges: | 55 | Small cobble (64-128mm): | 15 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 25 | Compaction: | Low |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 25 | Method Bars: | GE |
| pH: | 8.1 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.9 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 47 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

2~Mur~9~

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-503-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Site was not fish sampled in R1. A sample site is located u/s and no fish were caught at this site. |
| C2 | The lower 100 m of creek flows parallel to the Starr C. in a floodplain; easy fish access and good DV spawning habitat. Further u/s the creek becomes confined with 2 - 3 m high sideslopes. A 1 m high drop over debris is observed at 120 m u/s from the mouth, and numerous 0.3 - 0.4 m drops are present further u/s. The slope increases to 11% at 200 m. At 350 m the gradient is 18% for 20 m - impassable to fish. The gradient is a continuous 15% further u/s. Assume fish access to 300 m. |
| C3 | An unstable bank was observed on river right ~120 m u/s from the creek mouth. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-503-ST-32-1 -000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-----------------------|----------------------|---------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST32.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-503-ST-32-1 -000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | -150 m U/S FROM MOUTH. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5985 .60302 | Photos: | B6/8, 9 Air Photos: BC 7326:253 |
| Date: | 10/3/96 | Time: | 12:30 | Agency: | C58 |
| | | Survey Crew: | RD/SS \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| | | <i>Specific Data</i> | | | | | | |
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 1.7 | 2.0 | 1.9 | 2.3 | 1.7 |
| Av. Wet. Width (m): | 1.9 | Method Av. Wet. Width (m): | T | 1.7 | 2.0 | 1.9 | 2.3 | 1.7 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 30 | Av. Max. Pool Depth (cm): | 6 | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | |
| % Pool: | 30 | % Riffle: | 50 | % Run: | 20 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 25 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 20 |
| % Larges: | 70 | Small cobble (64-128mm): | 70 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool : | 30 | L.O.D.: | 0 |
| Boulder: | 20 | In Veg.: | 0 |
| Over Veg: | 20 | Cutbank: | 30 |
| Crown Closure % : | | Method Crown Closure: | |
| Aspect : | NE | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 4.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-503-ST-32-1 -000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electrofished 85 m length of stream, 1 pass with no lower net. No fish were caught. No fish access due to very steep, impassable section d/s in R2 of St32. |
| C2 | Nice, low gradient channel through meadow at sample site. The creek is small and stable with sections of excellent DV resident spawning. ~0.3 m high drops are present in this section. |
| C3 | Off-channel alcoves and seepage pond areas could not be surveyed due to 3 - 4 cm ice covering them. |
| C4 | Lat/Lon of helicopter landing site: 54 24.25 127 29.17 |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|-------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EAST FORK STARR C. (ST33) | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-000-000-000-000-000-000 | Map #: | 093L043 | Reach No.: | 1 |
| Location: | ~1500 m U/S FROM MOUTH. | U.T.M.: | 9.5990 .60310 | Site No.: | 1 |
| Date: 10/7/96 | Time: 10:00 | Agency: C58 | Survey Crew: SS \ \ \ \ \ \ \ \ | Fish Card: | N |
| | | | | Photos: | B7/8, 9 |
| | | | | Air Photos: | BC 7326:140 |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Method: | MW |
| | | | | Length surveyed (m): | 700.0 |
| | | | | Method: | HC |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|------|------|-----|------|------|
| Av. Chan. Width (m): | 13.1 | Method Av. Chan. Width (m): | T | 12.4 | 14.4 | 14.0 | 8.4 | 18.7 | 10.5 |
| Av. Wet. Width (m): | 9.7 | Method Av. Wet. Width (m): | T | 11.4 | 5.4 | 12.2 | | | |
| Av. Max. Rif. Depth (cm): | 17 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 50 | Av. Max. Pool Depth (cm): | 17 | | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | | |
| % Pool: 25 | % Riffle: 70 | % Run: 5 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|-------------|-------------------|--|--|
| Cover Total % : | 45 | Method Cover Total %: | GE | | | | |
| Dp Pool : 35 | L.O.D.: 5 | Boulder: 55 | In Veg.: 0 | Over Veg: 5 | Cutbank: 0 | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : SE | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.30 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| BT DV | |
| 13 A 6.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 80 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 65 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.9 | % Unstable: | 20 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.6 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 30 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | No fish were observed in R1; observed 1 suspected BT redd 1700 m u/s from the mouth in R1 (Photo B7/10). |
| C2 | An eroding bank 20 m x 30 m is present at the site. |
| C3 | Unembedded cobbles along the margins provide good juvenile rearing habitat. Shallow gravel and sidechannel areas provide good fry/juvenile habitat. |
| C4 | See table in report outlining unmapped seepages in R1. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------|----------------------|-------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EAST FORK STARR C. (ST33) | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 2.2 Method: MW |
| Location: | ~700 m U/S FROM REACH BREAK, SURVEYED ALL OF R2. | Site No.: | 2 | Length surveyed (m): | 2200.0 Method: HC |
| Date: | 10/7/96 | Map #: | 093L043 | Fish Card: | Y |
| Time: | 12:15 | U.T.M.: | 9.5990 .60310 | Field: | Yes |
| Agency: | C58 | Photos: | B7/15 | Historical: | No |
| Survey Crew: | JHSS \ \ \ \ \ | Air Photos: | BC 7326:140 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 7.0 | Method Av. Chan. Width (m): | T | 8.1 | 8.2 | 5.0 | 7.4 | 6.1 | 6.9 |
| Av. Wet. Width (m): | 6.9 | Method Av. Wet. Width (m): | T | 8.1 | 8.2 | 5.0 | 6.4 | | |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 12 | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 90 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 5 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 10 | L.O.D.: | 5 | Boulder: | 50 | In Veg.: | 0 | Over Veg.: | 25 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | SE | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.30 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| BT* DV* | |
| 7 C 2.0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|-----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 25 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 70 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 150 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 0.6 | % Unstable: | 15 |
| Textures Fines: | No | Gravel: Yes | Larges: Yes |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 3 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | 1C |
| Turb. (cm): | | Method Turbidity: | |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| BT | | | F | R | | | VO |
| DV | | | F | R | | | VO |
| BT | | | J | R | | | VO |
| DV | | | J | R | | | VO |
| DV | 3 | 130 - 170 | A | S | | | VO |

Obstructions

Comments

- C1 Several BT/DV fry and juveniles were observed in R2 along cobble margin areas.
- C2 DV redds were observed in R2: 4 redds ~1100 m u/s in R2 (with 3 DV's 130 - 170 mm long on the redds); suspected DV redds ~1500 m u/s in R2.
- C3 BT redds were observed in R2: suspected BT redd ~100 m u/s in R2; 2 redds ~500 m u/s in R2; 1 redd ~700 m u/s in R2 (Photo B7/16); suspected BT redd ~1400 m u/s in R2.
- C4 Eroding banks were observed in R2 and R3: 20 m x 15 m eroding bank ~100 m u/s from ES17 confluence; 20 m x 17 m eroding bank ~200 m u/s from ES17 confluence; 20 m x 10 m eroding bank ~40 m u/s from ES18 confluence. (Not mapped)
- C5 See table in report outlining unmapped seepages in R2.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|------------------------------------|----------------------|------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EAST FORK STARR C. (ST33) | Access: | II |
| Watershed Code: | 460-6006-508-722-519-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 2.5 Method: MW |
| Location: | ~600 m U/S FROM REACH BREAK, ~150 m D/S FROM EST9 CONFLUENCE. | Site No.: | 3 | Length surveyed (m): | 2500.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | Y Field: Yes Historical: No |
| | | U.T.M.: | 9.5990 .60310 | Photos: | B8/I Air Photos: BC 7326:083 |
| Date: 10/7/96 | Time: 17:15 | Agency: C58 | Survey Crew: JH/SS \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 4.1 | Method Av. Chan. Width (m): | T | 3.8 | 3.9 | 4.6 | 4.4 | 4.1 | 3.5 |
| Av. Wet. Width (m): | 4.1 | Method Av. Wet. Width (m): | T | 3.8 | 3.9 | 4.6 | 4.4 | 4.1 | 3.5 |
| Av. Max. Rif. Depth (cm): | 25 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 40 | Av. Max. Pool Depth (cm): | 25 | | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: 35 | % Riffle: 65 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 30 | L.O.D.: | 5 | Boulder: | 40 | In Veg.: | 0 | Over Veg: | 15 |
| Crown Closure % : | 10 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.20 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | BT DV (DV*) |
| 4 A 4.0 | 1271 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 70 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 5 | % Bedrock: | 5 |
| D90 (cm): | 26 | Compaction: | High |

Banks

| | | | |
|----------------------|------|--------------------------|-------------|
| Height (m): | 0.4 | % Unstable: | 10 |
| Textures Fines: | No | Gravel: No | Larges: Yes |
| Confinement: | 1 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.25 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 5 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 8 | C | 0.3 |
| | 3 | F | 0.3 |
| | 5 | F | 0.3 |
| | 4 | C | 1.0 |
| | 2 | F | 1.2 |

Comments

- C1 The 4.5 m high falls 300 m u/s in R3 is impassable and DV/BT are present below (Photo B7/24). The 4.0 m high chute 950 m u/s in R3 may be impassable (Photo B8/11); BT were present above but are assumed to be residents (BT caught at In4). Suspected DV spawners were observed between these two sets of falls (~190 m u/s from Est 8 confluence) and are assumed to be residents.
- C2 ~600 m u/s in R3 a series of chutes are present; passable to fish (Photo B8/6). Above the Est12 confluence, the gradient decreases and good spawning gravels are present. ~130 m u/s from the Est13 confluence, the mainstem becomes unconfined/braided due to the ~50 m wide unstable fan at the mouth of Est14. The gradient increases to ~16% 575 m u/s from Est13 confluence, and 25 m further u/s is a 2 m high chute; this marks the end of fish use and the reach break (Photo B8/19). In R4, the gradient is continuously steep (~18%) and ~200 m u/s in R4 ~10 m chute is present (Photo B8/20, 21).
- C3 See table in report outlining unmapped seepages in R3

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-722-519-124-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES1 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-124-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.3 Method: MW |
| Location: | ~1100 m U/S FROM THE MOUTH, NEAR OLD MINING ROAD CROSSING. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N |
| | | U.T.M.: | 9.5986 .60320 | Field: | Yes |
| Date: | 10/3/96 | Agency: | C58 | Historical: | No |
| Time: | 15:45 | Survey Crew: | CP\DB \ \ \ \ \ | Photos: | A10/8, 9 |
| | | | | Air Photos: | BC 7326:140 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.5 | Method Av. Chan. Width (m): | T | 3.6 | 2.1 | 2.4 | 2.6 | 2.3 | 1.7 |
| Av. Wet. Width (m): | 2.0 | Method Av. Wet. Width (m): | T | 2.2 | 1.3 | 2.4 | 2.6 | 1.7 | 1.7 |
| Av. Max. Rif. Depth (cm): | 20 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 20 | | | | | | |
| Gradient (%): | 11.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 15 | L.O.D.: | 0 | Boulder: | 65 | In Veg.: | 0 | Over Veg: | 5 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | SW | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.10 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NF |
| 3 A 11.0 | 0370 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 30 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 25 |
| % Larges: | 70 | Small cobble (64-128mm): | 45 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 5 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 22 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.6 | % Unstable: | 5 |
| Textures Fines: | No | Gravel: | No |
| Confinement: | 3 | Larges: | Yes |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.4 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 58 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-124-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 4 | F | 0.4 |
| | 3 | F | 0.5 |

Comments

- C1 Electrofished 75 m length of stream, 1 pass with no lower net. No fish were caught.
- C2 Tributary is steep; a steep series of cascades are present in the lower 500 m of stream. Suspected fish use in the lower 400 m up to the 4 m high impassable falls; u/s of 400 m the creek is classed as S6 habitat.
- C3 A small tributary flows into EST1 on river left just below the old mining road; creek is too steep to support fish.
- C4 Lat/Lon of helicopter landing site: 54 26.16 127 28.39

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-322-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------|----------------------|---------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES12 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-322-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | ~100 m D/S FROM OLD MINING ROAD CROSSING. | Site No.: | 1 | Length surveyed (m): | 120.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/3/96 | Time: 16:00 | Map #: | 093L043 | Photos: | B7/6, 7 Air Photos: BC 7326:140 |
| | | U.T.M.: | 9.5982 .60334 | | |
| Agency: C58 | Survey Crew: RD\SS\ \ \ \ \ \ | | | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.7 | Method Av. Chan. Width (m): | T | 1.5 | 1.6 | 1.9 | 1.8 | 1.5 | 1.8 |
| Av. Wet. Width (m): | 1.7 | Method Av. Wet. Width (m): | T | 1.5 | 1.6 | 1.9 | 1.8 | 1.5 | 1.8 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 21 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 11.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 85 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 10 | L.O.D.: 0 | Boulder: 75 | In Veg.: 0 | Over Veg: 10 | Cutbank: 5 | | | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : SW | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 11.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 40 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 30 |
| % Larges: | 55 | Small cobble (64-128mm): | 30 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 17 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: Yes |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.7 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-322-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 3 | F | 0.3 |

Comments

- C1 Electrofished 65 m length of stream, 1 pass with no lower net. No fish were caught or observed.
- C2 ~0.8 m high drops over debris are present within the site. At the bottom of the shock site, ~2.5 m high bedrock falls is present (Photo B7/4): the endpoint of potential fish access. At this point and d/s, the creek is very confined within steep sideslopes ~10 -15 m high.
- C3 Poor fish habitat in this creek with an average gradient of 11%; not accessible to fry due to the 15% gradient at the mouth.
- C4 Lat/Lon of helicopter landing site: 54 26.46 127 28.99

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-3.1-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------------------|----------------------|-----------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EST3.1 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-EST-3.1-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.8 Method: MW |
| Location: | UNMAPPED TRIBUTARY ENTERS EST3 ~200 m U/S IN R1, SITE LOCATED ~300 m U/S FROM EST3.1 MOUTH. | Site No.: | 1 | Length surveyed (m): | 775.0 Method: HC |
| Date: 10/7/96 | Time: 13:00 | Agency: C58 | Survey Crew: JH\SS \ \ \ \ \ \ | Fish Card: | N Field: Yes Historical: No |
| | | | | Photos: | B7/17, 18 Air Photos: BC 7326:140 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.5 | Method Av. Chan. Width (m): | T | 2.2 | 2.3 | 1.8 | 0.6 | 1.0 | 1.3 |
| Av. Wet. Width (m): | 1.5 | Method Av. Wet. Width (m): | T | 2.2 | 2.3 | 1.8 | 0.6 | 1.0 | 1.3 |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 15 | % Run: 70 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|--|--|
| Cover Total % : | 90 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : 0 | L.O.D.: 0 | Boulder: 0 | In Veg.: 0 | Over Veg: 80 | Cutbank: 20 | | | | |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : SW | Method Aspect: AE | | | | |

Discharge

| | | | | | | | | | |
|----------------------|----------------------------|--------------------------|--|--|--|--|--|--|--|
| Wetted Width (m): | Method Wetted Width (m): | | | | | | | | |
| Mean Depth (m): | Method Mean Depth (m): | | | | | | | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| 2 D 2.0 | 9100 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 95 | % Fines (<2mm): | 95 |
| % Gravels: | 5 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 0 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 1 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No Bedrock: No |
| Confinement: | 5 | | |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | | 130 - 170 | A | S | | | VO |

Obstructions

Comments

- C1

Seepage channel is low gradient for the entire length and easily accessible by fish. Multiple seepage sources at the base of ESt3 fan enter ESt3.1. Channel is parallel to the mainstem and <200 m away. Seepage source for ESt3.1 is at the base of Est5 fan, ~70 m away from the mainstem.
- C2

The lower 200 m of ESt3 was ground surveyed: 5 DV spawners and 5 DV redds were observed in the lower 38 m of stream. At 172 m in R1, seepage inputs are present along the base of the slope of ESt3. Fish access is to 200 m u/s from the mouth, the base of the fan. Further u/s there is no defined channel and multiple seepage inputs are present. Gradient is steep in R2 of ESt3.

DFO/MoELP Stream Survey Form

2--Mar-9--

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-3 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EST3 | Access: | II |
| Watershed Code: | 460-6006-508-722-519-EST-3 -000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 1.5 Method: MW |
| Location: | ~400 m U/S FROM THE MOUTH, AT OLD MINING ROAD CROSSING. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/3/96 | Time: 16:30 | Agency: C58 | Survey Crew: DB\CP\ \ \ \ \ \ | Photos: | A10/10, 11 Air Photos: BC 7326:140 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.5979 .60337 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 0.4 | Method Av. Chan. Width (m): | T | 0.3 | 0.5 | 0.3 | 0.3 | 0.3 | 1.0 |
| Av. Wet. Width (m): | 0.4 | Method Av. Wet. Width (m): | T | 0.3 | 0.5 | 0.3 | 0.3 | 0.3 | 1.0 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 16.0 | Method Gradient: | CL | | | | | | |
| % Pool: 25 | % Riffle: 75 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 80 | Small (2-16mm): | 70 |
| | | Large (16-64mm): | 10 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 3 | Compaction: | High |

Cover

| | | | |
|---------------------|-----|-----------------------|-------------------|
| Cover Total % : | 100 | Method Cover Total %: | GE |
| Dp Pool : 0 L.O.D.: | 0 | Boulder: 0 | In Veg.: 20 |
| Crown Closure % : | 0 | Method Crown Closure: | GE |
| | | Aspect : SW | Method Aspect: AE |
| | | Over Veg: 40 | Cutbank: 40 |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.1 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 78 | Method Conductivity: | CM |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 0 A 16.0 | 2800 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-3 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1 Electrofished 55 m length of stream, 1 pass with no lower net. No fish were caught.
- C2 Small, steep creek; not fish habitat. Channel is narrow with several 0.5 m high drops. ESt3 is classed as S4 habitat for the lower 200 m of stream (to the base of the fan) and S6 habitat w/s for the remaining length of creek.
- C3 5 DV spawners and 5 DV redds were observed in the lower 38 m of ESt3. See ESt3.1 site card for comments on this lower section of creek.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-4 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|---------------------------------|-------------|-------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES4 | Access: | H |
| Watershed Code: | 460-6006-508-722-519-EST-4 -000-000-000-000-000 | Map #: | 093L043 | Reach No.: | I |
| Location: | -40 m U/S FROM THE MOUTH. | U.T.M.: | 9.5978 60338 | Site No.: | I |
| Date: 10/7/96 | Time: 14:00 | Agency: C58 | Survey Crew: SS \ \ \ \ \ \ \ \ | Fish Card: | N |
| | | | | Photos: | no photo |
| | | | | Field: | Yes |
| | | | | Historical: | No |
| | | | | Air Photos: | BC 7326:140 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.8 | Method Av. Chan. Width (m): | T | 1.4 | 3.0 | 2.4 | 2.6 | 2.0 | 5.1 |
| Av. Wet. Width (m): | 0.0 | Method Av. Wet. Width (m): | GE | | | | | | |
| Av. Max. Rif. Depth (cm): | 0 | Av. Max. Riffle Depth (cm): | GE | | | | | | |
| Av. Max. Pool Depth (cm): | 0 | Av. Max. Pool Depth (cm): | 0 | | | | | | |
| Gradient (%): | 17.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 0 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | |
|-------------------|-----------------------|----------|----------|----------------|----------|
| Cover Total % : | Method Cover Total %: | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg: | Cutbank: |
| Crown Closure % : | Method Crown Closure: | Aspect : | NE | Method Aspect: | AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.00 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 3 | 17.0 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: |
| | High |

Banks

| | |
|----------------------|--------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No |
| Gravel: | No |
| Larges: | No |
| Bedrock: | No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | Dry |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-4 -000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1Channel is intermittent and no surface water is observed. Bare rock stream bed, cobble substrate, scour pools, and cutbank edges indicate that channel is seasonally-wetted.
- C2Gradient is 24% at the mouth of the tributary which then decreases to 11 - 15% for 15 m. The gradient is 20% and continuous u/s. No fish access; EST4 is classed as S6 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-467-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES15 | Access: | H |
| Watershed Code: | 460-6006-508-722-519-467-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | SITE LOCATED AT OLD MINING ROAD, ~200 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/4/96 | Time: 17:00 | Agency: C58 | Survey Crew: DB\CP\ \ \ \ \ \ | Photos: | A10/12, 13 Air Photos: BC 7326:083 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| | | | | <i>Specific Data</i> | | | | | |
| Av. Chan. Width (m): | 4.1 | Method Av. Chan. Width (m): | T | 5.0 | 4.5 | 4.6 | 4.3 | 4.2 | 2.1 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 0.8 | 0.7 | 0.9 | 1.7 | 1.2 | 0.9 |
| Av. Max. Rif. Depth (cm): | 8 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 8 | | | | | | |
| Gradient (%): | 14.0 | Method Gradient: | CL | | | | | | |
| % Pool: 15 | % Riffle: 80 | % Run: 5 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 30 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 20 |
| % Larges: | 65 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 18 | Compaction: | High |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|-------------|----------------|----|--|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | |
| Dp Pool: 5 | L.O.D.: 0 | Boulder: 85 | In Veg.: 0 | Over Veg: 5 | Cutbank: | 5 | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect: SW | Method Aspect: | AE | |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.8 | % Unstable: | 20 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 60 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.2 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 88 | Method Conductivity: | CM |

Discharge

| | | | | | | | |
|-----------------------|------|----------------------------|----|----------------------|--|--|--|
| | | | | <i>Specific Data</i> | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | |

Reach Symbol

| | | |
|---------------------------------|--|----------------|
| | | (Fish) |
| | | NF |
| 4 B 14.0 | | 1360 |
| (Width, Valley: Channel, Slope) | | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-467-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 3 | F | 0.0 |

Comments

- C1 Electrofished 65 m length of stream, 1 pass with no lower net. No fish were caught.
- C2 The creek enters a gully and steepens u/s. At the creek mouth, ~2.5 m high falls are present; impassable by fish. ESt5 is classed as S5 habitat in the lower 550 m of stream and S6 habitat u/s of 550 m.
- C3 Several unstable banks were noted u/s from the sample site. Fine red silt is stirred up and clouds the creek when disturbed.
- C4 Lat/Lon of helicopter landing site: 54 27.14 127 29.70

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-6 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|--------------------|----------------------|-------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ESi6 | Access: | II |
| Watershed Code: | 460-6006-508-722-519-EST-6 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | SITE LOCATED ~95 m U/S FROM MOUTH/BRAIDED FAN. | Site No.: | 1 | Length surveyed (m): | 250.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5977 .60346 | Photos: | B7/20 Air Photos: BC 7326.083 |
| Date: | 10/7/96 | Time: | 15:15 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 1.3 | 1.5 | 1.4 | 3.0 | 1.7 | 2.8 |
| Av. Wet. Width (m): | 1.2 | Method Av. Wet. Width (m): | T | 1.2 | 1.3 | 1.2 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 17 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 5.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 30 | % Run: | 50 | % Other: | 0 | Method: | GE |
| % Side Channel: | | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 5 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|---|----------------|----|-----------|----|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 0 | Over Veg: | 90 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE | Cutbank: | 10 |

Discharge

| | | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV* | |
| 2 A 5.0 | 1810 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 15 | % Fines (<2mm): | 15 |
| % Gravels: | 75 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 10 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 4 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.5 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 2 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-6 -000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 5 | 140 - 160 | A | S | | | VO |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.2 |

Comments

- C1Adult DV observed at the mouth and 94 m u/s from the creek mouth. DV redds observed at 94 m from the mouth; low gradient section. Assume DV spawning is occurring or just occurred in the lower 145 m of stream.
- C2~181 m u/s from the mouth, 0.7 m high drop over a debris jam is present. ~250 m u/s from the mouth, the channel becomes entrenched and channel width decreases from S3 to S4 classification.
- C3Fish distribution is up to the top of R1, ~500 m u/s from the mouth. R2 is too small and steep to support fish.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-500-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------|----------------------|------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES17 | Access: | II |
| Watershed Code: | 460-6006-508-722-519-500-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 110.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N |
| | | U.T.M.: | 9.5975 60347 | Field: | Yes |
| Date: 10/3/96 | Time: 10:30 | Agency: C58 | Survey Crew: RD/SS \ \ \ \ \ | Historical: | No |
| | | | | Photos: | B6/4 |
| | | | | Air Photos: | BC 7326:083 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 3.8 | Method Av. Chan. Width (m): | T | 3.2 | 3.4 | 4.1 | 3.9 | 4.5 |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 1.3 | 1.6 | 1.2 | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 21 | Av. Max. Pool Depth (cm): | 7 | | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | |
| % Pool: 15 | % Riffle: 80 | % Run: 5 | % Other: 0 | Method: GE | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 5 | Small (2-16mm): | 0 |
| | | Large (16-64mm): | 5 |
| % Larges: | 95 | Small cobble (64-128mm): | 15 |
| | | Large cobble (128-256mm): | 50 |
| | | Boulder cobble (>256mm): | 30 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 28 | Compaction: | Medium |

Cover

| | | | |
|---------------------|----|-----------------------|-------------|
| Cover Total % : | 80 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: | 0 | Boulder: 90 | In Veg.: 0 |
| | | Over Veg: 0 | Cutbank: 0 |
| Crown Closure % : | | Method Crown Closure: | Aspect : SW |
| | | Method Aspect: | AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 60 | Method Bars: | GE |
| pH: | 8.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.08 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 4 A 10.0 | 0190 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-500-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | X | 0.0 |
| 3 | | C | 0.1 |

Comments

- C1Electrofished 80 m length of stream (30 m u/s from the mouth to 110 m), 1 pass with no lower net. No fish were caught or observed.
- C20.5 m high drop over debris is located 5 m u/s from the mouth (Photo B7/22); inaccessible to fry. The gradient is 8% in the lower 50 m of stream; u/s it increases to 9 - 11% for another 50 m. U/S of 100 m, the creek is confined, and the gradient is 15% and continues to steepen. ~3 m high x 3 m long chute is located 110 m u/s from the mouth: impassable.
- C3Bed material consists of boulder/cobble; bedload depostion at the creek mouth was noted (Photo B7/21).
- C4ESt7 is mapped as class S5/S6 habitat throughout; it should be noted that fish use in the lower 30 m of stream is possible during high flows.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-540-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------|----------------------|-------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ESi8 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-540-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | SITE LOCATED ~10 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 10.0 Method: GE |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/7/96 | Time: 17:30 | Agency: C58 | Survey Crew: JH \ \ \ \ \ | Photos: B7/25 | Air Photos: BC 7326.083 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 1.3 | 1.5 | 1.5 | 0.6 | 0.9 | 0.9 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 18.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 0 | % Riffle: | 99 | % Run: | 1 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | |
|-------------------|---------|-----------------------|-------------------------------|
| Cover Total % : | | Method Cover Total %: | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: |
| Crown Closure % : | | Method Crown Closure: | Aspect : NE Method Aspect: AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 18.0 | |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: Medium |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | L |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

DFO/MoELP Stream Survey Form

2~Mar~9~

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-540-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | C | 0.0 |

Comments

C1

No fish habitat present in this creek; gradient is 18% from the mouth and 1.2 m high cascade is located at the mouth (Photo B7/25). Est8 is classed as S6 habitat throughout.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-587-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EST9 | Access: | LI |
| Watershed Code: | 460-6006-508-722-519-587-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | SITE LOCATED ~70 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 70.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5969 .60350 | Photos: | B8/5 Air Photos: BC 7326-083 |
| Date: 10/8/96 | Time: 12:30 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 1.4 | Method Av. Wet. Width (m): | T | 2.0 | 1.4 | 0.9 | 1.2 | 1.3 | 1.4 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 23.0 | Method Gradient: | CL | | | | | | |
| % Pool: 25 | % Riffle: 75 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | |
|-------------------|-----------------------|----------|----------|----------------|----------|
| Cover Total % : | Method Cover Total %: | | | | |
| Dp Pool : | L.O.D.: | Boulder: | In Veg.: | Over Veg.: | Cutbank: |
| Crown Closure % : | Method Crown Closure: | Aspect : | SW | Method Aspect: | AE |

Discharge

| | | |
|-----------------------|------------------------------|----------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : | |
| Discharge (m3/s) : | Method Discharge (m3/s) : | |

0.01 VO

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 1 23.0 | |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: Medium |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | L |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-587-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

C1 Tributary is too steep to support fish or for fish access; ES19 is classed as S6 habitat throughout.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-10 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EST10 | Access: | II |
| Watershed Code: | 460-6006-508-722-519-EST-10 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | SITE LOCATED ~60 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 60.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/8/96 | Time: 10:30 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | B8/2 Air Photos: BC 7326:083 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.5968 .60350 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.0 | 1.2 | 1.5 | 0.7 | 0.6 | 1.0 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.0 | 1.2 | 1.5 | 0.7 | 0.6 | 1.0 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 23 | Av. Max. Pool Depth (cm): | 12 | | | | | | |
| Gradient (%): | 15.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 50 | % Run: 30 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | |
| Dp Pool: 20 | L.O.D.: 0 | Boulder: 40 | In Veg.: 0 | Over Veg: 20 | Cutbank: 20 | | |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect: NE | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.01 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | SP |
| I D 15.0 | 1180 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 80 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 20 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 15 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | 1 | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-10 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SP | | | J | R | | | VO |

Obstructions

Comments

- C1 The gradient recorded represents the gradient for the whole reach; the gradient is low (3 - 7%) for the lower 58 m of stream. At 58 m, the gradient rises to 35% - a barrier to fish.
- C2 Parr-sized fish were observed just u/s from the creek mouth.
- C3 ESt10 is classed as S4 habitat up to 60 m (base of bench) and S6 habitat u/s.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-605-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|---------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EST11 | Access: | H |
| Watershed Code: | 460-6006-508-722-519-605-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.3 Method: MW |
| Location: | SITE LOCATED ~200 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 340.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/8/96 | Time: 11:30 | Agency: C58 | Survey Crew: JHV \ \ \ \ \ \ \ | Photos: | B8/8-10 Air Photos: BC 7326:083 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.0 | 1.2 | 1.1 | 2.9 | 2.4 | 1.1 |
| Av. Wet. Width (m): | 1.3 | Method Av. Wet. Width (m): | T | 1.0 | 1.2 | 1.1 | 2.0 | 1.8 | 0.8 |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 12 | | | | | | |
| Gradient (%): | 12.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 30 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 65 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Cover

| | | | |
|----------------------|----|-----------------------|-------------------|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool : 10 L.O.D.: | 0 | Boulder: 35 | In Veg.: 0 |
| Crown Closure % : | 15 | Method Crown Closure: | GE |
| | | Aspect : S | Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 2 B 12.0 | 1360 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.4 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0 | Method Flood Signs: | MS |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-605-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | X | 0.3 |

Comments

- C1Cascade and 13% gradient is present at the creek mouth (Photo B8/8). 271 m u/s from the mouth, ~1 m high debris jam is present (Photo B8/10).
- C2Gradient is 10 - 13% throughout the small creek and habitat is marginal. Suspected fish use to top of R1, 340 m u/s from the creek mouth.

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: STARR C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-722-519-EST-12 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | EST12 | Access: | II |
| Watershed Code: | 460-6006-508-722-519-EST-12 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.0 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N |
| | | U.T.M.: | 9.5957 .60354 | Field: | Yes |
| Date: 10/8/96 | Time: 13:00 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | B8/14, 15 |
| | | | | Air Photos: | BC 7326:083 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|----------------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 4.6 | Method Av. Chan. Width (m): | T | <i>Specific Data</i> | | | | | |
| Av. Wet. Width (m): | 4.6 | Method Av. Wet. Width (m): | T | 4.4 | 4.8 | 5.6 | 3.8 | 4.2 | 5.0 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | | | | | | | |
| Av. Max. Pool Depth (cm): | | Av. Max. Pool Depth (cm): | | | | | | | |
| Gradient (%): | 17.0 | Method Gradient: | CL | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | |
|-----------------|---------------------------|
| % Fines (<2mm): | % Fines (<2mm): |
| % Gravels: | Small (2-16mm): |
| | Large (16-64mm): |
| % Larges: | Small cobble (64-128mm): |
| | Large cobble (128-256mm): |
| | Boulder cobble (>256mm): |
| % Bedrock: | % Bedrock: |
| D90 (cm): | Compaction: High |

Cover

| | |
|-------------------|--|
| Cover Total % : | Method Cover Total %: |
| Dp Pool : L.O.D.: | Boulder: In Veg.: Over Veg: Cutbank: |
| Crown Closure % : | Method Crown Closure: Aspect : N Method Aspect: AE |

Discharge

| | | |
|-----------------------|--------------------------------|----------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | <i>Specific Data</i> |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO | |
| Discharge (m3/s) : | 0.02 Method Discharge (m3/s) : | |

Reach Symbol

| |
|--|
| (Fish) |
| NS |
| 5 17.0 |
| (Width, Valley: Channel, Slope) (Bed Material) |

Banks

| | |
|----------------------|--------------------------------------|
| Height (m): | % Unstable: |
| Textures Fines: | No Gravel: No Larges: No Bedrock: No |
| Confinement: | |
| Valley: Chan. Ratio: | |
| Stage: | L |
| Flood Signs Ht(m): | Method Flood Signs: |
| Braided: | Method Braided: |
| Bars (%): | Method Bars: |
| pH: | Method pH: |
| O2 (ppm): | Method Dissolved Oxygen: |
| Water Temp. (°C): | Method Temperature: |
| Turb. (cm): | Method Turbidity: |
| Cond. (µmhos): | Method Conductivity: |

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1
- Gradient is 16 - 18% and continuous from the creek mouth. Tributary dewateres u/s in a steep alluvial fan.
- C2
- No fish habitat is present; EST12 is classed as S5 habitat throughout.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-699-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|-------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES13 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-699-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.5 Method: MW |
| Location: | SITE LOCATED ~220 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: HC |
| | | Fish Card: | N | Field: Yes | Historical: No |
| Date: 10/8/96 | Time: 15:00 | Agency: C58 | Survey Crew: JH \ \ \ \ \ \ \ \ | Photos: | B8/18 Air Photos: BC 7326.083 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.5956 .60354 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.0 | Method Av. Chan. Width (m): | T | 1.2 | 1.0 | 1.0 | 1.0 | 1.1 | 0.9 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.2 | 1.0 | 1.0 | 1.0 | 1.1 | 0.9 |
| Av. Max. Rif. Depth (cm): | 14 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 24 | Av. Max. Pool Depth (cm): | 14 | | | | | | |
| Gradient (%): | 1.5 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 30 | % Run: | 55 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | | | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 25 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 5 | L.O.D.: | 0 | Boulder: | 15 | In Veg.: | 0 | Over Veg: | 40 |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE | Cutbank: | 40 |

Discharge

| | | | | | | | | | |
|-----------------------|------|------------------------------|----|--|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) : | VO | | | | | | |
| Discharge (m3/s) : | 0.05 | Method Discharge (m3/s) : | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| I D 1.5 | 1630 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 65 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 25 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | | Method Braided: | |
| Bars (%): | | Method Bars: | |
| pH: | | Method pH: | |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-699-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1
- No redds or fish were observed. Possible fish use in the lower 500 m of stream (to the top of R1) based on the steep gradient further u/s.
- C2
- Lower 300 m of channel is a fan and numerous seepages are present. Input of the seepage located at 124 m u/s from the mouth derives from the mainstem. See table in report outlining unmapped seepages for detailed seepage data of ES113.
- C3
- ES113 is classed as S4 habitat to the top of Reach 1 and S6 habitat u/s throughout Reach 2.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-14 -000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------|----------------------|------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ES14 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-519-EST-14 -000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | SITE LOCATED ~130 m U/S FROM MOUTH. | Site No.: | 1 | Length surveyed (m): | 240.0 Method: HC |
| | | Map #: | 093L043 | Field: | Yes |
| | | U.T.M.: | 9.5957 .60355 | Historical: | No |
| Date: | 10/8/96 | Time: | 16:30 | Photos: | B8/22-24 |
| Agency: | CS8 | Survey Crew: | JHV \ \ \ \ \ \ \ \ | Air Photos: | BC 7326.083 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 2.0 | Method Av. Chan. Width (m): | T | 3.6 | 1.6 | 1.6 | 1.4 | 2.0 | 1.8 |
| Av. Wet. Width (m): | 1.7 | Method Av. Wet. Width (m): | T | 2.2 | 1.5 | 1.4 | | | |
| Av. Max. Rif. Depth (cm): | 14 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 19 | Av. Max. Pool Depth (cm): | 14 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 90 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|
| Cover Total % : | 15 | Method Cover Total %: | GE | | | | |
| Dp Pool: | 0 | L.O.D.: | 0 | Boulder: | 30 | In Veg.: | 0 |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : | S | Method Aspect: | AE |
| Over Veg: | 30 | Cutbank: | 40 | | | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 2 E 9.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 50 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 40 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 21 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.1 | % Unstable: | 60 |
| Textures Fines: | No | Gravel: Yes | Larges: No |
| Confinement: | 6 | Bedrock: | No |
| Valley: Chan. Ratio: | 5 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | GE |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | | Method pH: | |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-519-EST-14 -000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Site was not fish sampled and no fish were observed. |
| | |
| C2 | In the lower 34 m, stream is within a braided floodplain of the mainstem; u/s of 34 m, stream forms a single channel. ~114 m from the mouth, the channel braids into multiple small channels on an alluvial fan which continues u/s to 210 m. The end of fish distribution is at the reach break (240 m u/s from the mouth) due to the 12% and increasing gradient. The gradient is 20% ~300 m u/s from the mouth. |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-573-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|--|--|---------------------------------|--|------------------------------------|--|--------------|--|-------------------|--|
| Stream Name: | | STARR C. TRIBUTARY | | Stream "Local": | | ST34 | | Access: | | H | |
| Watershed Code: | | 460-6006-508-722-573-000-000-000-000-000-000 | | | | | | Reach No.: | | 2 | |
| Location: | | SITE LOCATED ~300 m U/S FROM THE BASE OF REACH | | Map #: | | 093L043 | | Site No.: | | 1 | |
| | | 2. | | U.T.M.: | | 9.5981 .60308 | | Fish Card: | | N | |
| Date: 10/3/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: RD/SS \ \ \ \ \ \ \ \ | | Photos: | | B7/4, 5 | |
| | | | | | | | | Air Photos: | | BC 7326/254 | |
| Channel Characteristics | | | | | | | | | | Bed Material | |
| | | | | Specific Data | | | | | | | |
| Av. Chan. Width (m): | | 1.2 | | Method Av. Chan. Width (m): | | T | | 1.0 | | 1.2 | |
| Av. Wet. Width (m): | | 1.2 | | Method Av. Wet. Width (m): | | T | | 1.0 | | 1.2 | |
| Av. Max. Rif. Depth (cm): | | 7 | | Av. Max. Riffle Depth (cm): | | MS | | | | | |
| Av. Max. Pool Depth (cm): | | 21 | | Av. Max. Pool Depth (cm): | | 7 | | | | | |
| Gradient (%): | | 5.0 | | Method Gradient: | | CL | | | | | |
| % Pool: 10 | | % Riffle: 80 | | % Run: 10 | | % Other: 0 | | Method: GE | | | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | | | | |
| % Debris Area: | | 0 | | Method Debris Area: | | GE | | | | | |
| Cover | | | | | | | | | | Banks | |
| Cover Total % : | | 70 | | Method Cover Total %: | | GE | | | | | |
| Dp Pool: 20 | | L.O.D.: 0 | | Boulder: 40 | | In Veg.: 0 | | Over Veg: 15 | | Cutbank: 25 | |
| Crown Closure % : | | | | Method Crown Closure: | | | | Aspect: NE | | Method Aspect: AE | |
| Discharge | | | | | | | | | | | |
| | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | | | | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | | | | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | | | | |
| Discharge (m3/s) : | | 0.08 | | Method Discharge (m3/s) : | | | | | | | |
| Reach Symbol | | | | | | | | | | | |
| | | | | (Fish) | | NF | | | | | |
| | | | | I C 5.0 | | 1270 | | | | | |
| | | | | (Width, Valley: Channel, Slope) | | (Bed Material) | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-573-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 68 m length of stream, 1 pass with no lower net; no fish were caught. |
| C2 | Small, stable creek with abundant willow overstory. Sections of suitable resident DV spawning habitat are present. |
| C3 | Difficult to electroshock creek due to the creek's low conductivity. |
| C4 | R1 d/s is very steep; the lower 30 m of R1 has a gradient of 18% with ~3-4 m channel width. Large falls which make up the majority of R1 (~650 m in length) begin ~100 m u/s from the mouth. St34 is inaccessible to fish. |
| C5 | Lat/Lon of helicopter landing site: 54 24.66 127 29.75 |

DFO/MoELP Stream Survey Form

2"-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|----------------------|----------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST35 | Access: | FT |
| Watershed Code: | 460-6006-508-722-599-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.5 Method: HC |
| Location: | SITE LOCATED - 400 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: HC |
| | | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/7/96 | Time: 14:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ | Photos: | A11/5, 6 Air Photos: BC 7326:255 |
| | | Map #: | 093L043 | | |
| | | U.T.M.: | 9.5973 .60309 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|------------|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 7.9 | Method Av. Chan. Width (m): | T | 9.1 | 8.4 | 5.9 | 5.0 | 10.8 | 8.2 |
| Av. Wet. Width (m): | 7.9 | Method Av. Wet. Width (m): | T | 9.1 | 8.4 | 5.9 | 5.0 | 10.8 | 8.2 |
| Av. Max. Rif. Depth (cm): | 20 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 80 | Av. Max. Pool Depth (cm): | 20 | | | | | | |
| Gradient (%): | 9.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 35 | % Riffle: | 60 | % Run: | 5 | % Other: | 0 | Method: GE | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 65 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 35 |
| % Bedrock: | 20 | % Bedrock: | 20 |
| D90 (cm): | 60 | Compaction: | Medium |

Cover

| | | | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|---|----------|---|
| Cover Total % : | 80 | Method Cover Total %: | GE | | | | | | | | |
| Dp Pool : | 40 | L.O.D.: | 0 | Boulder: | 60 | In Veg.: | 0 | Over Veg: | 0 | Cutbank: | 0 |
| Crown Closure % : | 5 | Method Crown Closure: | GE | Aspect : | NE | Method Aspect: | AE | | | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.57 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | (BT) |
| 8 B 9.0 | 1162 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | |
|----------------------|-------------|------------------------------------|
| Height (m): | % Unstable: | 50 |
| Textures Fines: | No | Gravel: No Larges: Yes Bedrock: No |
| Confinement: | 2 | |
| Valley: Chan. Ratio: | 1 | |
| Stage: | 1. | |
| Flood Signs Ht(m): | 1.8 | Method Flood Signs: GE |
| Braided: | N | Method Braided: GE |
| Bars (%): | 0 | Method Bars: GE |
| pH: | 8.2 | Method pH: PH |
| O2 (ppm): | | Method Dissolved Oxygen: |
| Water Temp. (°C): | 4.7 | Method Temperature: TC |
| Turb. (cm): | 200 | Method Turbidity: GE |
| Cond. (µmhos): | 84 | Method Conductivity: CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | 1 | F | 0.1 |
| 2 | 2 | C | 0.4 |
| 1 | 1 | F | 0.4 |
| 1 | 1 | F | 0.4 |
| 3 | 3 | C | 0.4 |
| 2 | 2 | F | 0.6 |
| 1 | 1 | F | 0.6 |
| 1 | 1 | F | 0.7 |
| 1 | 1 | F | 1.0 |
| 1 | 1 | C | 1.2 |
| 2 | 2 | C | 1.2 |
| 2 | 2 | F | 1.2 |

Comments

- C1 R1 of St35 is a canyon. Numerous small and large drops are present throughout this reach. (See obstructions section for heights and locations of large drops.)
- C2 Channel is confined with bedrock and unstable banks at 135 m and u/s. ~52 m u/s from the mouth, an unstable bank is present on river right. ~1407 m u/s from the mouth, a large, unstable mud slump is present.
- C3 This site was not sampled but BT were caught u/s in R2. Suspect BT are residents due to the 2 m high falls/chutes present in R1. R1 is classed as S2 habitat.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|------------------------------------|----------------------|-------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST35 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-599-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 2.2 Method: MW |
| Location: | SITE LOCATED ~700 m U/S FROM THE BASE OF R2. | Site No.: | 2 | Length surveyed (m): | 1600.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N |
| | | U.T.M.: | 9.5973 60309 | Field: | Yes |
| Date: 10/3/96 | Time: 12:30 | Agency: C58 | Survey Crew: RD/SS \ \ \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | B6/10, 11 |
| | | | | Air Photos: | BC 7326:255 |

Channel Characteristics

| | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|------|----------|------|------------|
| Av. Chan. Width (m): | 11.9 | Method Av. Chan. Width (m): | T | 10.2 | 12.1 | 12.6 | 11.7 | 12.8 |
| Av. Wet. Width (m): | 7.4 | Method Av. Wet. Width (m): | T | | | | | |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 12 | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: GE |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 90 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 10 | L.O.D.: | 0 | Boulder: | 80 | In Veg.: | 0 | Over Veg: | 10 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | NE | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.25 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | BT |
| 12 A 4.0 | 0190 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 85 | Small cobble (64-128mm): | 15 |
| | | Large cobble (128-256mm): | 40 |
| | | Boulder cobble (>256mm): | 30 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 28 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 2.0 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 7.8 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.5 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| BT | 4 | 220 - 270 | J | R | | | EL |
| SP | 1 | 200 | J | R | | | VO |

Obstructions

Comments

- C1 Electrofished 85 m length of stream, 1 pass with no lower net. The BT caught at this site are suspected to be residents due to the large number of impassable 2 m high falls/chutes present d/s in R1. The male gonads of the BT were not completely developed.
- C2 Large, dynamic creek with a high potential to move debris. Bed material consists primarily of boulder/cobble and very little LOD is present in this upper section.
- C3 Sections of meadow are present along the creek. Several unstable banks were noted in this reach: an unstable mud bank present on river left 1772 m u/s from the mouth; 2 unstable banks present 1958 m u/s from the mouth; banks are unstable 2258 m u/s from the mouth; a large, unstable bank on river right is present 2538 m u/s from the mouth.
- C4 Easy fish movement possible throughout R2. Excellent BT rearing habitat along channel margins.
- C5 Lat/Lon of helicopter landing site: 54 24.38 127 31.11
- C6 Based on gradient, St35 is classed as S2/S3 habitat up to the top of R2 and S6 habitat throughout R3.

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-106-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|---------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST35 1 | Access: | 11 |
| Watershed Code: | 460-6006-508-722-599-106-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.8 Method: MW |
| Location: | SITE LOCATED ~450 m U/S FROM THE BASE OF R2. | Site No.: | 3 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5970 .60306 | Photos: | B7/2, 3 Air Photos: BC 7326:255 |
| Date: 10/3/96 | Time: 14:00 | Agency: C58 | Survey Crew: RD/SS \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|-----|-----------------------------|----|--------|-----|----------|-----|------------|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.4 | 1.3 | 1.5 | 2.3 | 1.4 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.4 | 1.3 | 1.5 | 2.3 | 1.4 |
| Av. Max. Rif. Depth (cm): | 6 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 6 | | | | | |
| Gradient (%): | 6.0 | Method Gradient: | CL | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|-----------|----|
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 80 | In Veg.: | 0 | Over Veg: | 5 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | NE | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | |
|-----------------------|------|----------------------------|----|--|--|--|--|--|
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | | | | | | |

Reach Symbol

| | | | |
|---------------------------------|---|--------|----------------|
| | | (Fish) | |
| | | NF | |
| 2 | B | 6.0 | 1180 |
| (Width, Valley: Channel, Slope) | | | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 15 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 10 |
| % Larges: | 80 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 55 |
| | | Boulder cobble (>256mm): | 15 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 27 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.5 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs 1lt(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.5 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-106-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 50 | F | 0.0 |

Comments

- C1 Electrofished 65 m length of stream, 1 pass with no lower net. No fish were caught or observed. Suspect barren; no access due to the 50 m+ high falls at the tributary mouth.
- C2 Small, stable creek. Sample site located in low gradient habitat. Bed material consists of primarily boulder; very limited spawning habitat present.
- C3 The channel d/s in R1 is within a very steep, confined canyon.
- C4 Lat/Lon of helicopter landing site: 54 24.91 127 31.43

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-402-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------|----------------------|----------------------------------|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST35.2 | Access: | FT |
| Watershed Code: | 460-6006-508-722-599-402-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.1 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE MOUTH. | Site No.: | 4 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L043 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.5962 .60293 | Photos: | A11/7, 8 Air Photos: BC 7326:255 |
| Date: | 10/7/96 | Time: | 16:00 | Agency: | C58 |
| | | Survey Crew: | RD/CP \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.4 | Method Av. Chan. Width (m): | T | 1.4 | 2.1 | 1.6 | 0.9 | 1.3 | 1.1 |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 18 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 12.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 10 | % Riffle: | 60 | % Run: | 30 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | 10 |
| | | Large (16-64mm): | 10 |
| % Larges: | 75 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 25 |
| | | Boulder cobble (>256mm): | 30 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 30 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 70 | Method Cover Total %: | GE |
| Dp Pool : | 20 | L.O.D.: | 0 |
| | | Boulder: | 60 |
| | | In Veg.: | 0 |
| | | Over Veg.: | 0 |
| | | Cutbank: | 20 |
| Crown Closure % : | 10 | Method Crown Closure: | GE |
| | | Aspect : | NW |
| | | Method Aspect: | AE |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | NS |
| | 1 B 12.0 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 1.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1. | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-402-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | The recorded gradient represents an average gradient for the whole reach: the lower 30 m of stream has a gradient of 5-8%; u/s of 30 m the gradient is 15-18%. |
| C2 | This site was not sampled. BT are present on the St35 mainstem just d/s of the St35/ST35.2 confluence. ~0.4 m high drop is present at the mouth of St35.2; fish access is restricted in the lower 30 m of stream and may only be accessible to juveniles during high flows. U/S of 30 m there is no fish access or use due to the steep gradient. |
| C3 | Tributary is a single channel and bed material consists of boulder/cobble. Potential spawning habitat is very limited. Good BT rearing habitat is present. |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: STARR C. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-722-599-506-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------------------------|--------------------|---|
| Stream Name: | STARR C. TRIBUTARY | Stream "Local": | ST35.3 | Access: | FI |
| Watershed Code: | 460-6006-508-722-599-506-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.6 Method: MW |
| Location: | TRIBUTARY LOCATED 1420 m U/S IN R2; SITE LOCATED -30 m U/S FROM THE MOUTH. | Map #: | 093L043 | Site No.: | 5 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M.: | 9.5959 60289 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/7/96 | Time: 17:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ \ | Photos: | A11/9, 10 Air Photos: BC 7326.255 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 7.7 | Method Av. Chan. Width (m): | T | 6.8 | 9.5 | 7.3 | 8.4 | 6.5 | 7.4 |
| Av. Wet. Width (m): | 2.1 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 15 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 70 | Av. Max. Pool Depth (cm): | 15 | | | | | | |
| Gradient (%): | 13.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 15 | % Riffle: | 80 | % Run: | 5 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|------------|---|
| Cover Total %: | 80 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 40 | L.O.D.: | 0 | Boulder: | 60 | In Veg.: | 0 | Over Veg.: | 0 |
| Crown Closure %: | 5 | Method Crown Closure: | GE | Aspect: | NW | Method Aspect: | AE | Cutbank: | 0 |

Discharge

| | | | | | |
|----------------------|----------------------------|--------------------------|--|--|--|
| Wetted Width (m): | Method Wetted Width (m): | | | | |
| Mean Depth (m): | Method Mean Depth (m): | | | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s): | 0.22 | Method Discharge (m3/s): | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NS | |
| 8 A 13.0 | 1171 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 10 | Small (2-16mm): | 5 |
| | | Large (16-64mm): | 5 |
| % Larges: | 75 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 30 |
| | | Boulder cobble (>256mm): | 40 |
| % Bedrock: | 10 | % Bedrock: | 10 |
| D90 (cm): | 30 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 1.5 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 3 | Larges: | Yes |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | 1. | | |
| Flood Signs 1lt(m): | 0.8 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 40 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 6.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 81 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: STARR C. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-722-599-506-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

| Obstruction Ht(m) | Type | Location |
|-------------------|------|----------|
| 2 | F | 0.1 |
| 10 | F | 0.1 |

Comments

- C1 This site was not fish sampled. Suspected BT was visually observed on St35 ~400 m d/s from the St35/St35.3 confluence. ~94 m u/s from the mouth, 1.5 m high confined bedrock falls is present: impassable to fish. Channel is steep (~14%) and confined for 40 m and then increases in gradient to ~90% where ~10 m high falls is present.
- C2 Large, dynamic creek with bed material consisting of boulder/cobble bedrock. No potential spawning habitat present.
- C3 Marginal fish habitat above 50 m. Possible fish use in the lower 90 m of stream.
- C4 A small trickle seepage was observed on river left ~67 m u/s from the St35.3 confluence; creek is steep with a discharge of ~0.5 cfs and an average channel width of 40 cm. No fish habitat present.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH-47-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | |
|---------------------------------|--|--|--|-----------------------------|--|---------------------------------|--|---------------------------|--|--------------------|--|---|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | | | Stream "Local": | | TH47 | | Access: | | H | |
| Watershed Code: | | 460-6006-508-TH-47-000-000-000-000-000-000 | | | | Reach No.: | | 1 | | Reach Length (km): | | 0.2 Method: MW | |
| Location: | | TRIBUTARY LOCATED ~400 m U/S FROM THE STARR C. CONFLUENCE. | | | | Map #: | | 093L044 | | Site No.: | | 1 Length surveyed (m): 100.0 Method: HC | |
| | | | | | | U.T.M.: | | 9.6071 60288 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 10/15/96 | | Time: 11:00 | | Agency: C58 | | Survey Crew: JH \ \ \ \ \ \ \ \ | | Photos: | | B11/4, 5 | | Air Photos: BCB 91181:189 | |
| Channel Characteristics | | | | | | | | | | | | | |
| | | | | | | Specific Data | | | | | | | |
| Av. Chan. Width (m): | | 0.5 | | Method Av. Chan. Width (m): | | T | | 0.6 | | 0.6 | | 1.0 0.0 0.7 0.0 | |
| Av. Wet. Width (m): | | 0.0 | | Method Av. Wet. Width (m): | | T | | | | | | | |
| Av. Max. Rif. Depth (cm): | | | | Av. Max. Riffle Depth (cm): | | | | | | | | | |
| Av. Max. Pool Depth (cm): | | | | Av. Max. Pool Depth (cm): | | | | | | | | | |
| Gradient (%): | | 10.0 | | Method Gradient: | | CL | | | | | | | |
| % Pool: | | 0 | | % Riffle: | | 0 | | % Run: | | 0 | | % Other: 0 Method: GE | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | | | | | | |
| % Debris Area: | | 0-10 | | Method Debris Area: | | GE | | | | | | | |
| Cover | | | | | | | | | | | | | |
| Cover Total %: | | | | Method Cover Total %: | | | | | | | | | |
| Dp Pool: | | L.O.D.: | | Boulder: | | In Veg.: | | Over Veg.: | | Cutbank: | | | |
| Crown Closure %: | | 40 | | Method Crown Closure: | | GE | | Aspect: | | SW | | Method Aspect: AE | |
| Discharge | | | | | | | | | | | | | |
| | | | | | | Specific Data | | | | | | | |
| Wetted Width (m): | | | | Method Wetted Width (m): | | | | | | | | | |
| Mean Depth (m): | | | | Method Mean Depth (m): | | | | | | | | | |
| Mean Velocity (m/s): | | | | Method Mean Velocity (m/s) | | VO | | | | | | | |
| Discharge (m3/s): | | 0.00 | | Method Discharge (m3/s): | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | |
| | | | | | | (Fish) | | | | | | | |
| | | | | | | NS | | | | | | | |
| | | | | | | 1 A 10.0 6130 | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | | | (Bed Material) | | | | | | | |
| Bed Material | | | | | | | | | | | | | |
| % Fines (<2mm): | | 60 | | % Fines (<2mm): | | 60 | | | | | | | |
| % Gravels: | | 15 | | Small (2-16mm): | | | | Large (16-64mm): | | | | | |
| % Larges: | | 25 | | Small cobble (64-128mm): | | | | Large cobble (128-256mm): | | | | Boulder cobble (>256mm): | |
| % Bedrock: | | 0 | | % Bedrock: | | 0 | | | | | | | |
| D90 (cm): | | 11 | | Compaction: | | High | | | | | | | |
| Banks | | | | | | | | | | | | | |
| Height (m): | | 0.5 | | % Unstable: | | 0 | | | | | | | |
| Textures Fines: | | Yes | | Gravel: | | No | | Larges: | | No | | Bedrock: No | |
| Confinement: | | 2 | | | | | | | | | | | |
| Valley: Chan. Ratio: | | 1 | | | | | | | | | | | |
| Stage: | | Dry | | | | | | | | | | | |
| Flood Signs Ht(m): | | | | Method Flood Signs: | | | | | | | | | |
| Braided: | | | | Method Braided: | | GE | | | | | | | |
| Bars (%): | | 100 | | Method Bars: | | GE | | | | | | | |
| pH: | | | | Method pH: | | | | | | | | | |
| O2 (ppm): | | | | Method Dissolved Oxygen: | | | | | | | | | |
| Water Temp. (°C): | | | | Method Temperature: | | | | | | | | | |
| Turb. (cm): | | | | Method Turbidity: | | | | | | | | | |
| Cond. (µmhos): | | | | Method Conductivity: | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-TH -47 -000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Discontinuous, dry channel. Lacks continuous defined banks. |
| C2 | Fish habitat is present during high flows only and it is marginal due to the steep gradient of the creek which inhibits fry access. |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-736-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH48 | Access: | 11 |
| Watershed Code: | 460-6006-508-736-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.4 Method: MW |
| Location: | SITE LOCATED ~200 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 354.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6071 .60289 | Photos: | B11/8, 9 Air Photos: BCB 91181:189 |
| Date: | 10/15/96 | Time: | 13:00 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.3 | Method Av. Chan. Width (m): | T | 1.3 | 1.3 | 1.8 | 1.2 | 1.2 | 1.3 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.7 | 1.2 | 0.8 | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | 7 | 7 | 7 | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 7 | 14 | 18 | 13 | | | |
| Gradient (%): | 7.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 50 | % Run: | 20 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 45 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 45 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 11 | Compaction: | Medium |

Cover

| | | | |
|--------------------|----|-----------------------|-------------------|
| Cover Total % : | 40 | Method Cover Total %: | GE |
| Dp Pool: 0 L.O.D.: | 20 | Boulder: 0 In Veg.: | 0 |
| | | Over Veg: | 60 |
| Crown Closure % : | 40 | Method Crown Closure: | GE |
| | | Aspect: SW | Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: No |
| Confinement: | 3 | Bedrock: | No |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 8.4 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Discharge

| | |
|-----------------------|--------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) VO |
| Discharge (m3/s) : | 0.01 Method Discharge (m3/s) : |

Specific Data

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV |
| I B 7.0 | 1450 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-736-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 12 | ~130 | A | S | R | | VO |

Obstructions

Comments

- C1 DV were observed up to 200 m u/s from the mouth. No migration barriers were observed during ground survey to 354 m. Tributary is classed as S4 habitat in the lower 400 m of stream, and suspected S4 habitat u/s to the top of R1.
- C2 Air Temp: 1 C.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-736-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|-------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH48 | Access: | 11 |
| Watershed Code: | 460-6006-508-736-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.4 Method: MW |
| Location: | SITE LOCATED ~900 m U/S FROM THE MOUTH. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: HC |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6071 60289 | Photos: | DB4/9, 10 Air Photos: BCB 91181:189 |
| Date: | 10/8/96 | Time: | 13:00 | Agency: | C58 |
| | | Survey Crew: | DB\SS \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 1.2 | Method Av. Chan. Width (m): | T | 2.0 | 0.9 | 0.7 | 0.9 | 1.2 | 1.3 |
| Av. Wet. Width (m): | 0.6 | Method Av. Wet. Width (m): | T | 0.7 | 0.9 | 0.5 | 0.6 | 0.6 | 0.6 |
| Av. Max. Rif. Depth (cm): | 5 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 5 | | | | | | |
| Gradient (%): | 8.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 40 | % Riffle: | 60 | % Run: | 0 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Specific Data

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 |
| % Gravels: | 90 | Small (2-16mm): | 70 |
| | | Large (16-64mm): | 20 |
| % Larges: | 10 | Small cobble (64-128mm): | 10 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Cover

| | | | |
|-------------------|----|-----------------------|----|
| Cover Total % : | 30 | Method Cover Total %: | GE |
| Dp Pool : | 0 | L.O.D.: | 50 |
| | | Boulder: | 0 |
| | | In Veg.: | 0 |
| | | Over Veg: | 10 |
| | | Cutbank: | 40 |
| Crown Closure % : | 60 | Method Crown Closure: | GE |
| | | Aspect : | SW |
| | | Method Aspect: | AE |

Discharge

| | |
|-----------------------|---------------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : |
| Mean Depth (m) : | Method Mean Depth (m) : |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) : VO |
| Discharge (m3/s) : | 0.03 Method Discharge (m3/s) : |

Specific Data

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 3 | Larges: | No |
| Valley: Chan. Ratio: | 2 | Bedrock: | No |
| Stage: | 1. | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 20 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.5 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

Reach Symbol

| |
|--|
| (Fish) |
| NF |
| 1 B 8.0 0910 |
| (Width, Valley: Channel, Slope) (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-736-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 62 m length of stream, 1 pass with no lower net. No fish were caught or observed. |
| C2 | 2 small Western Spotted frogs were observed at the landing meadow in a 0.2 m wide seepage. |
| C3 | Creek is subsurface just w/s from the sample site which then reappears in the more confined reach w/s. Suspect channel may dewater in this section during dry years. |
| C4 | Bar development and gravel bed material suggest flow is high at times. |
| C5 | Reach 2 begins 1400 m w/s from the mouth and marks the end of fish distribution. |
| C6 | Lat/Lon of helicopter landing site: 54 24 26 127 20 92 |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-745-000-000-000-000-000-000

| Header Information | | | | | | | | | | | |
|---------------------------|--|---|--|--|--|---------------------------------|--|----------------------|--|--|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH49 | | Access: | | H | |
| Watershed Code: | | 460-6006-508-745-000-000-000-000-000-000 | | Reach No.: | | 1 | | Reach Length (km): | | 0.7 Method: MW | |
| Location: | | SITE LOCATED ~200 m U/S FROM THE MOUTH. | | Map #: | | 093L044 | | Site No.: | | 1 Length surveyed (m): 200.0 Method: HC | |
| | | | | U.T.M.: | | 9.6068 .60291 | | Fish Card: | | N Field: Yes Historical: No | |
| Date: 10/15/96 | | Time: 14:00 | | Agency: C58 | | Survey Crew: JH \ \ \ \ \ \ \ \ | | Photos: | | B11/11, 12 Air Photos: BCB 91181:189 | |
| Channel Characteristics | | | | Specific Data | | | | Bed Material | | | |
| Av. Chan. Width (m): | | 2.1 Method Av. Chan. Width (m): | | T | | 1.6 1.7 2.3 2.4 2.4 2.3 | | % Fines (<2mm): | | 15 % Fines (<2mm): 15 | |
| Av. Wet. Width (m): | | 2.0 Method Av. Wet. Width (m): | | T | | 2.1 2.3 2.1 1.7 | | % Gravels: | | 25 Small (2-16mm): Large (16-64mm): | |
| Av. Max. Rif. Depth (cm): | | 16 Av. Max. Riffle Depth (cm): | | MS | | 12 22 14 | | % Larges: | | 60 Small cobble (64-128mm): Large cobble (128-256mm): Boulder cobble (>256mm): | |
| Av. Max. Pool Depth (cm): | | 37 Av. Max. Pool Depth (cm): | | 16 | | 35 41 36 | | % Bedrock: | | 0 % Bedrock: 0 | |
| Gradient (%): | | 3.0 Method Gradient: | | CL | | | | D90 (cm): | | 28 Compaction: High | |
| % Pool: 30 | | % Riffle: 55 | | % Run: 15 | | % Other: 0 Method: GE | | | | | |
| % Side Channel: | | 0 Method Side Channel: | | GE | | | | | | | |
| % Debris Area: | | 0-10 Method Debris Area: | | GE | | | | | | | |
| Cover | | | | | | | | Banks | | | |
| Cover Total % : | | 60 Method Cover Total %: | | GE | | | | Height (m): | | 0.3 % Unstable: 0 | |
| Dp Pool: 30 L.O.D.: | | 5 Boulder: 15 In Veg.: 0 Over Veg: 30 Cutbank: 20 | | | | | | Textures Fines: | | Yes Gravel: No Larges: Yes Bedrock: No | |
| Crown Closure % : | | 60 Method Crown Closure: | | GE Aspect: SE Method Aspect: AE | | | | Confinement: | | 3 | |
| Discharge | | | | Specific Data | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | Valley: Chan. Ratio: | | 2 | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | Stage: | | M | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | | VO | | | | Flood Signs Ht(m): | | 0.3 Method Flood Signs: MS | |
| Discharge (m3/s) : | | 0.08 Method Discharge (m3/s) : | | | | | | Braided: | | N Method Braided: GE | |
| Reach Symbol | | | | | | | | | | | |
| | | | | (Fish) | | | | | | | |
| | | | | (DV) | | | | | | | |
| | | | | 2 B 3.0 1260 | | | | | | | |
| | | | | (Width, Valley: Channel, Slope) (Bed Material) | | | | | | | |
| Water Temp. (°C): | | 2.0 Method Temperature: | | 1C | | | | Turb. (cm): | | 200 Method Turbidity: GE | |
| Cond. (µmhos): | | 30 Method Conductivity: | | CM | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-745-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1
- This reach was not fish sampled and no fish were observed. DV are present u/s in R2 but they are suspected to be residents; channel is not defined d/s from the sample site. R1 is classed as S3 habitat.
- C2
- No migration barriers were observed in the lower 200 m of stream. Suitable fish habitat is present in R1.
- C3
- Air Temp: 0.5 C.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-745-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|---------------------------------|--------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH49 | Access: | 11 |
| Watershed Code: | 460-6006-508-745-000-000-000-000-000-000-000 | Reach No.: | 2 | Reach Length (km): | 0.7 Method: MW |
| Location: | SITE LOCATED ~1250 m U/S FROM THE MOUTH. | Map #: | 093L044 | Site No.: | 2 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M.: | 9.6068 .60291 | Fish Card: | N Field: Yes Historical: No |
| Date: 10/8/96 | Time: 15:00 | Agency: C58 | Survey Crew: RD\CP\ \ \ \ \ \ \ | Photos: | A11/19, 20 Air Photos: BCB 91181:189 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| Av. Chan. Width (m): | 2.3 | Method Av. Chan. Width (m): | T | 2.6 | 2.1 | 2.4 | 2.0 | 1.9 | 2.7 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.1 | 1.0 | 0.7 | 1.1 | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 35 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 4.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 70 | % Run: 10 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | |
|------------------------|-----------------------|-----------------------|--------------------------|
| Cover Total % : | 60 | Method Cover Total %: | GE |
| Dp Pool: 10 L.O.D.: 10 | Boulder: 10 | In Veg.: 0 | Over Veg: 30 Cutbank: 40 |
| Crown Closure % : | Method Crown Closure: | Aspect: SE | Method Aspect: AE |

Discharge

| | | |
|-----------------------|----------------------------|---------------------------|
| Wetted Width (m) : | Method Wetted Width (m) : | |
| Mean Depth (m) : | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| DV | |
| 2 B 4.0 | 1540 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 50 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 30 |
| % Larges: | 40 | Small cobble (64-128mm): | 40 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 8 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 1.2 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 4 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | 1 | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 7.6 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.7 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 141 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-745-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 2 | 110, 149 | A | S | M | | EL |

Obstructions

Comments

- C1 Electrofished 45 m length of stream, 1 pass with no lower net. 2 DV were caught; 1 DV was a ripe male and the other DV was suspected to be a spent female.
- C2 Small creek with a moderate potential to transport debris. ~20-30 cm high drops over debris are present in this section. Further u/s from the sample site the channel becomes more confined and steepens. R2 is classed as S3 habitat but suspected S3 habitat in the top 400 m of R2.
- C3 Sections of heavy alder swales and forest line the creek. D/S from the sample site the creek flows through a wide meadow and is dewatered at the time of survey; the channel is undefined and lower gradient in this section. Suspect the DV caught in sample site 2 are residents based on the dewatered, undefined channel d/s.
- C4 Lat/Lon of helicopter landing site: 54 24.30 127 22.36
- C5 Tributary Th49.1 was not ground surveyed; suspect DV are present in the lower 320 m of this stream (to the top of R1) based on gradient.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-745-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|----------------------|--------------------|---|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH49 | Access: | HI |
| Watershed Code: | 460-6006-508-745-000-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.5 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE BASE OF REACH 3. | Map #: | 093L044 | Site No.: | 3 Length surveyed (m): 100.0 Method: HC |
| | | U.T.M.: | 9.6068 .60291 | Fish Card: | N Field: Yes Historical: No |
| Date: | 10/8/96 | Time: | 16:00 | Agency: | C58 |
| | | Survey Crew: | RD\CP\ \ \ \ \ \ \ \ | Photos: | A11/21, 22 |
| | | | | Air Photos: | BCB 91181:189 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 2.3 | Method Av. Chan. Width (m): | T | 1.4 | 2.0 | 2.4 | 2.8 | 2.7 | 2.5 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | | | | | | |
| Av. Max. Rif. Depth (cm): | 7 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 20 | Av. Max. Pool Depth (cm): | 7 | | | | | | |
| Gradient (%): | 10.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 20 | % Riffle: | 70 | % Run: | 10 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 10-40 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | | | |
|------------------|----|-----------------------|----|----------|----|----------------|----|------------|----|
| Cover Total %: | 60 | Method Cover Total %: | GE | | | | | | |
| Dp Pool: | 5 | L.O.D.: | 20 | Boulder: | 60 | In Veg.: | 0 | Over Veg.: | 0 |
| Crown Closure %: | 20 | Method Crown Closure: | GE | Aspect: | SE | Method Aspect: | AE | Cutbank: | 15 |

Discharge

| | | | | | | | | | |
|----------------------|------|-----------------------------|----|--|--|--|--|--|--|
| Wetted Width (m): | | Method Wetted Width (m): | | | | | | | |
| Mean Depth (m): | | Method Mean Depth (m): | | | | | | | |
| Mean Velocity (m/s): | | Method Mean Velocity (m/s): | VO | | | | | | |
| Discharge (m3/s): | 0.01 | Method Discharge (m3/s): | | | | | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| 2 A 10.0 | 1630 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 60 | Small (2-16mm): | 30 |
| | | Large (16-64mm): | 30 |
| % Larges: | 30 | Small cobble (64-128mm): | 5 |
| | | Large cobble (128-256mm): | 10 |
| | | Boulder cobble (>256mm): | 15 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 28 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|-----|
| Height (m): | 0.5 | % Unstable: | 5 |
| Textures Fines: | Yes | Gravel: | Yes |
| Confinement: | 3 | Larges: | No |
| Valley: Chan. Ratio: | 1 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.3 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 10 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 5.8 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 59 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-745-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 70 m length of stream, 1 pass with no lower net. No fish were caught or observed. |
| C2 | Difficult fish access due to steep gradient. Several ~30-40 cm high drops over boulders or debris are present in this reach. Channel is very confined with 5-10 m high sideslopes. |
| C3 | Very limited sections suitable for DV spawning; bed material consists primarily of boulder/fines. |
| C4 | R3 is classed as S6 habitat. |
| C5 | Lat/Lon of helicopter landing site: 54 24.17 127 22.95 |

DFO/MoELP Stream Survey Form

2"-Mar-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-804-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------|----------------------|--------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH50 | Access: | 11 |
| Watershed Code: | 460-6006-508-804-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | SITE LOCATED ~90 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 150.0 Method: GE |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6063 .60307 | Photos: | B11/15, 16 Air Photos: BCB 91181:189 |
| Date: | 10/15/96 | Time: | 16:30 | Agency: | C58 |
| | | Survey Crew: | JH \ \ \ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|-------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 1.9 | Method Av. Chan. Width (m): | T | 1.4 | 2.2 | 2.4 | 2.2 | 1.8 | 1.6 |
| Av. Wet. Width (m): | 1.9 | Method Av. Wet. Width (m): | T | 1.4 | 2.2 | 2.4 | 2.2 | 1.8 | 1.6 |
| Av. Max. Rif. Depth (cm): | | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 53 | Av. Max. Pool Depth (cm): | | 42 | 65 | 51 | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 10 | % Run: | 60 | % Other: | 0 | Method: | GE |
| % Side Channel: | 10-40 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|
| Cover Total % : | 40 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 40 | L.O.D.: | 0 | Boulder: | 0 | In Veg.: | 0 |
| Crown Closure % : | 0 | Method Crown Closure: | GE | Aspect : | SE | Method Aspect: | AE |
| | | Over Veg.: | 20 | Cutbank: | 40 | | |

Discharge

| | | | |
|-----------------------|----------------------------|----------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | | |
| Discharge (m3/s) : | Method Discharge (m3/s) : | | |

Reach Symbol

| | | |
|---------------------------------|--|----------------|
| | | (Fish) |
| | | SST DV |
| 2 D 1.0 | | 8110 |
| (Width, Valley: Channel, Slope) | | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 80 | % Fines (<2mm): | 80 |
| % Gravels: | 15 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 5 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 2 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|----|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: | No |
| Confinement: | 5 | Larges: | No |
| Valley: Chan. Ratio: | 4 | Bedrock: | No |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | Y | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 10 |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 20 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-804-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | | BD | |

Comments

- C1 Channel passes through a series of 3 old beaver dams which may be restrictions but are not migration barriers.
- C2 This site was not fish sampled; SST and DV were caught ~70 m further u/s and are assumed to be present throughout this tributary.
- C3 Air Temp: 1.5 C.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Stream Survey Report

Watershed Code:

460-6006-508-804-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-------------------------------|----------------------|--------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH50 | Access: | II |
| Watershed Code: | 460-6006-508-804-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.2 Method: MW |
| Location: | SITE LOCATED ~160 m U/S FROM THE MOUTH. | Site No.: | 2 | Length surveyed (m): | 100.0 Method: GE |
| | | Map #: | 093L044 | Fish Card: | N Field: Yes Historical: No |
| | | U.T.M.: | 9.6063 .60307 | Photos: | DB4/13, 14 Air Photos: BCB 91181:189 |
| Date: 10/8/96 | Time: 10:00 | Agency: C58 | Survey Crew: DB\SS\ \ \ \ \ \ | | |

Channel Characteristics

| | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|---------|-----|-----|-----|-----|
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.4 | 1.4 | 1.4 | 2.0 | 2.0 |
| Av. Wet. Width (m): | 1.6 | Method Av. Wet. Width (m): | T | 1.4 | 1.4 | 1.4 | 2.0 | 2.0 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | |
| Av. Max. Pool Depth (cm): | 15 | Av. Max. Pool Depth (cm): | 10 | | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | |
| % Pool: 80 | % Riffle: 20 | % Run: 0 | % Other: 0 | Method: | GE | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | |

Cover

| | | | | | | | | |
|------------------|------------|-----------------------|-------------|-------------|-------------------|--|--|--|
| Cover Total %: | 100 | Method Cover Total %: | GE | | | | | |
| Dp Pool: 0 | L.O.D.: 10 | Boulder: 0 | In Veg.: 90 | Over Veg: 0 | Cutbank: 0 | | | |
| Crown Closure %: | 0 | Method Crown Closure: | GE | Aspect: SE | Method Aspect: AE | | | |

Discharge

| | | | | | |
|----------------------|----------------------------|--------------------------|--|--|--|
| Wetted Width (m): | Method Wetted Width (m): | | | | |
| Mean Depth (m): | Method Mean Depth (m): | | | | |
| Mean Velocity (m/s): | Method Mean Velocity (m/s) | VO | | | |
| Discharge (m3/s): | 0.03 | Method Discharge (m3/s): | | | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| SST DV | |
| 2 D 1.0 | 2800 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 20 | % Fines (<2mm): | 20 |
| % Gravels: | 80 | Small (2-16mm): | 50 |
| | | Large (16-64mm): | 30 |
| % Larges: | 0 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 6 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|------------------------|
| Height (m): | 0.6 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No Bedrock: No |
| Confinement: | 5 | | |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | L | | |
| Flood Signs Ht(m): | 0.2 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 7.2 | Method pH: | PH |
| O2 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 7.0 | Method Temperature: | TC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | | Method Conductivity: | |

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-804-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| SST | 18 | 31 - 46 | F | R | | | EL |
| DV | 2 | 89, 136 | J | R | | | EL |

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| | 1 | BD | 0.2 |

Comments

- C1 Electrofished 21 m length of stream, 1 pass with no lower net. DV and SST were caught. The SST caught had highly pigmented fins; suspect due to abundant algae and seepage from the meadow and the tannic color of the water. Suspect SST fry migrate out of the Thautil R. mainstem and occupy Th50 up to the impassable beaver dam at the base of the lake.
- C2 0.75 m high beaver dam at the base of the lake is presently a barrier. Assume fish presence in the lake, but no migration between the lake and tributary is presently possible.
- C3 Several signs of moose were observed, and moose were present in the lake at the time of survey.
- C4 Lat/Lon of helicopter landing site: 54 25.09 127 21.90

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-822-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|-----------------|----------------------|--------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH51 | Access: | H |
| Watershed Code: | 460-6006-508-822-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 1.7 Method: MW |
| Location: | SITE LOCATED ~200 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 100.0 Method: GE |
| | | Fish Card: | N | Field: | Yes Historical: No |
| | | Photos: | A13/7, 8 | Air Photos: | BC 7326-145 |
| Date: | 10/15/96 | Time: | 9:30 | Agency: | C58 |
| | | Survey Crew: | RD\SS \ \ \ \ \ | | |
| | | Map #: | 093L044 | | |
| | | U.T.M.: | 9.6065 .60312 | | |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|------|-----------------------------|----|--------|-----|----------|-----|---------|-----|
| Av. Chan. Width (m): | 4.2 | Method Av. Chan. Width (m): | T | 4.1 | 4.3 | 4.1 | 4.6 | 4.4 | 3.9 |
| Av. Wet. Width (m): | 2.3 | Method Av. Wet. Width (m): | T | 1.5 | 3.0 | 2.4 | | | |
| Av. Max. Rif. Depth (cm): | 9 | Av. Max. Riffle Depth (cm): | MS | | | | | | |
| Av. Max. Pool Depth (cm): | 42 | Av. Max. Pool Depth (cm): | 9 | | | | | | |
| Gradient (%): | 1.0 | Method Gradient: | CL | | | | | | |
| % Pool: | 30 | % Riffle: | 30 | % Run: | 40 | % Other: | 0 | Method: | GE |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|----|-----------------------|----|----------|----|----------------|----|
| Cover Total % : | 60 | Method Cover Total %: | GE | | | | |
| Dp Pool : | 20 | L.O.D.: | 10 | Boulder: | 30 | In Veg.: | 0 |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | SE | Method Aspect: | AE |
| | | Over Veg: | 10 | Cutbank: | 30 | | |

Discharge

| | | | |
|-----------------------|------|----------------------------|----|
| Wetted Width (m) : | | Method Wetted Width (m) : | |
| Mean Depth (m) : | | Method Mean Depth (m) : | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO |
| Discharge (m3/s) : | 0.06 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| (DV) | |
| 4 D 1.0 | 1720 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 10 | % Fines (<2mm): | 10 |
| % Gravels: | 70 | Small (2-16mm): | 20 |
| | | Large (16-64mm): | 50 |
| % Larges: | 20 | Small cobble (64-128mm): | 20 |
| | | Large cobble (128-256mm): | 0 |
| | | Boulder cobble (>256mm): | 0 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 9 | Compaction: | High |

Banks

| | | | |
|----------------------|-----|--------------------------|------------|
| Height (m): | 0.8 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: Yes | Larges: No |
| Confinement: | 4 | Bedrock: | No |
| Valley: Chan. Ratio: | 4 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | 0.5 | Method Flood Signs: | MS |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 15 | Method Bars: | GE |
| pH: | 7.9 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 60 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-822-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

Comments

- C1Electrofished 55 m length of stream, 1 pass with no lower net. No fish were caught or observed.
- C2Low gradient creek with bed material consisting of gravels. Areas suitable for DV spawning are present. Habitat is suitable for fish although none were observed.
- C3The swamp/dry lake just u/s from the sample site was wetted at the time of sampling due to rain but was dry the day before (Photos A11/23, 24); suspect the majority of R1 is seasonally wetted and is classed as S3 habitat.
- C4Lat/Lon of helicopter landing site: 54 25.20 127 21.75

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-822-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------|--|-------------|-----------------|----------|--------------------------------|-----|--------------------|--|---|----|-----------------------|----|---------------|--|--|--|--|--|----------------------|------------|-----------------------------|------------|-------------|----------|-----|-----|-----|--|------------------|---------------------|-------------------------|----------------------------|------|----------|-----|----------------|-----|-----|---------------------------------|--|----------------------------|---|-----------------------------|-------------|-----|-------------|----|-----------------|--------------------|------------|---------------------------|-------------|---------------------------|----|---------------------------|----|--|----------------------|---|--|--|--|--------|---|---------------|-----|------------------|--------------------|-----|---------------------|----|----------|---|-----------------|----|-----------|------------|--------------|----------|------------|------------|------------|----|-----------|--|--------------------------|--|-------------------|-----------------|---------------------|----------------------|-------------|-----|-------------------|----|----------------|--|----------------------|--|--|----------------|-----|---------------------|----|--|--|--|--|--|--|--|--|---|--|-----------------|---|-----------------|---|------------|----|-----------------|---|--|--|------------------|----|-----------|----|--------------------------|----|--|--|---------------------------|----|--|--|--------------------------|----|------------|---|------------|---|-----------|----|-------------|------|
| Stream Name: | | THAUTIL R. TRIBUTARY | | Stream "Local": | | TH51 | | Access: | | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: | | 460-6006-508-822-000-000-000-000-000-000-000 | | Reach No.: | | 2 | | Reach Length (km): | | 3.1 Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | | SITE LOCATED ~2500 m U/S FROM THE BASE OF REACH 2, ADJACENT TO SMALL MEADOW. | | Map #: | | 093L043 | | Site No.: | | 2 Length surveyed (m): 100.0 Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/15/96 | | Time: 9:30 | | Agency: C58 | | Survey Crew: DB\SS \ \ \ \ \ \ | | Fish Card: | | N Field: Yes Historical: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | Photos: | | DB4/15, 16 Air Photos: BC 7326 145 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="6">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>8.5</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>10.5</td> <td>9.2</td> <td>6.6</td> <td>7.9</td> <td>8.1</td> <td colspan="2"></td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>3.2</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>3.2</td> <td>2.4</td> <td>3.0</td> <td>4.5</td> <td>3.0</td> <td colspan="2"></td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>10</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td colspan="6"></td> <td colspan="2"></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>25</td> <td>Av. Max. Pool Depth (cm):</td> <td>10</td> <td colspan="6"></td> <td colspan="2"></td> </tr> <tr> <td>Gradient (%):</td> <td>3.0</td> <td>Method Gradient:</td> <td>CL</td> <td colspan="6"></td> <td colspan="2"></td> </tr> <tr> <td>% Pool: 10</td> <td>% Riffle: 90</td> <td>% Run: 0</td> <td>% Other: 0</td> <td colspan="6">Method: GE</td> <td colspan="2"></td> </tr> <tr> <td>% Side Channel:</td> <td>0-10</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="6"></td> <td colspan="2"></td> </tr> <tr> <td>% Debris Area:</td> <td>>40</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="6"></td> <td colspan="2"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | Av. Chan. Width (m): | 8.5 | Method Av. Chan. Width (m): | T | 10.5 | 9.2 | 6.6 | 7.9 | 8.1 | | | Av. Wet. Width (m): | 3.2 | Method Av. Wet. Width (m): | T | 3.2 | 2.4 | 3.0 | 4.5 | 3.0 | | | Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 10 | | | | | | | | | Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | | | | % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | | | | % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | | | | % Debris Area: | >40 | Method Debris Area: | GE | | | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>0</td> <td>% Fines (<2mm):</td> <td>0</td> </tr> <tr> <td>% Gravels:</td> <td>10</td> <td>Small (2-16mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>10</td> </tr> <tr> <td>% Larges:</td> <td>90</td> <td>Small cobble (64-128mm):</td> <td>20</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>50</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>20</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>30</td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | % Fines (<2mm): | 0 | % Fines (<2mm): | 0 | % Gravels: | 10 | Small (2-16mm): | 0 | | | Large (16-64mm): | 10 | % Larges: | 90 | Small cobble (64-128mm): | 20 | | | Large cobble (128-256mm): | 50 | | | Boulder cobble (>256mm): | 20 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 30 | Compaction: | High |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 8.5 | Method Av. Chan. Width (m): | T | 10.5 | 9.2 | 6.6 | 7.9 | 8.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 3.2 | Method Av. Wet. Width (m): | T | 3.2 | 2.4 | 3.0 | 4.5 | 3.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 25 | Av. Max. Pool Depth (cm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 3.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 10 | % Riffle: 90 | % Run: 0 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | >40 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 0 | % Fines (<2mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 10 | Small (2-16mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 90 | Small cobble (64-128mm): | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 30 | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>70</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>Dp Pool: 0</td> <td>L.O.D.: 50</td> <td>Boulder: 50</td> <td>In Veg.: 0</td> <td>Over Veg: 0</td> <td>Cutbank:</td> <td>0</td> <td colspan="4"></td> </tr> <tr> <td>Crown Closure % :</td> <td>25</td> <td>Method Crown Closure:</td> <td>GE</td> <td>Aspect :</td> <td>E</td> <td>Method Aspect:</td> <td>AE</td> <td colspan="4"></td> </tr> </tbody> </table> | | | | | | | | | | Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | | Dp Pool: 0 | L.O.D.: 50 | Boulder: 50 | In Veg.: 0 | Over Veg: 0 | Cutbank: | 0 | | | | | Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE | | | | | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>1.0</td> <td>% Unstable:</td> <td>75</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel: No</td> <td>Larges: Yes</td> <td>Bedrock: No</td> </tr> <tr> <td>Confinement:</td> <td>2</td> <td colspan="2"></td> <td></td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>1</td> <td colspan="2"></td> <td></td> </tr> <tr> <td>Stage:</td> <td>L</td> <td colspan="2"></td> <td></td> </tr> <tr> <td>Flood Signs H1(m):</td> <td>0.6</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>30</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>7.8</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>O2 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>4.0</td> <td>Method Temperature:</td> <td>1C</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td></td> <td>Method Conductivity:</td> <td></td> </tr> </tbody> </table> | | Height (m): | 1.0 | % Unstable: | 75 | Textures Fines: | Yes | Gravel: No | Larges: Yes | Bedrock: No | Confinement: | 2 | | | | Valley: Chan. Ratio: | 1 | | | | Stage: | L | | | | Flood Signs H1(m): | 0.6 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 30 | Method Bars: | GE | pH: | 7.8 | Method pH: | PH | O2 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 4.0 | Method Temperature: | 1C | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 70 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool: 0 | L.O.D.: 50 | Boulder: 50 | In Veg.: 0 | Over Veg: 0 | Cutbank: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | 25 | Method Crown Closure: | GE | Aspect : | E | Method Aspect: | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 1.0 | % Unstable: | 75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: No | Larges: Yes | Bedrock: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs H1(m): | 0.6 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 30 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 7.8 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| O2 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 4.0 | Method Temperature: | 1C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | | Method Conductivity: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2"></th> <th colspan="6">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m) :</td> <td></td> <td>Method Wetted Width (m) :</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>Mean Depth (m) :</td> <td></td> <td>Method Mean Depth (m) :</td> <td></td> <td colspan="6"></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td></td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> <td colspan="6"></td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.17</td> <td>Method Discharge (m3/s) :</td> <td></td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | | | | | | | Specific Data | | | | | | Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | Discharge (m3/s) : | 0.17 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.17 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td colspan="2"></td> <td colspan="2">(Fish)</td> <td colspan="6"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2">DV</td> <td colspan="6"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2">9 A 3.0</td> <td colspan="6">0190</td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td colspan="2"></td> <td colspan="6">(Bed Material)</td> </tr> </tbody> </table> | | | | | | | | | | | | (Fish) | | | | | | | | | | DV | | | | | | | | | | 9 A 3.0 | | 0190 | | | | | | (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | DV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 9 A 3.0 | | 0190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-822-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 5 | 58 - 84 | J | R | | | EL |
| DV | 1 | 139 | A | M | R | | EL |

Obstructions

Comments

- C1 Electrofished 30 m length of stream, 1 pass with no lower net; DV were caught. Suspect DV are residents due to subsurface flow in the vicinity of the dry lake bed in R1;
- C2 Very dynamic system with abundant LOD stepped and jammed across the channel. Bed material is large and appears to be highly mobile; creek has a high potential to transport debris and bed material.
- C3 Banks on river right are ~100 feet in height.
- C4 Channel width is wider in R2 than in R1; R2 is classed as an S2 stream.
- C5 Lat/Lon of helicopter landing site: 54 25.24 127 24.11

DFO/MoELP Stream Survey Form

2"-Mur-9"

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-822-000-000-000-000-000-000-000

| Header Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------|-----------------------------|------------|----------------------|-----|-----------------|-----|-----------------------------------|-----|--|----|--------------------|---|---------------------------|---------------------------------|----------------------|------|-----------------------------|------------------|----------------|-------------------------|-----------|-----|-------------------|-----|-----------------------|-----|----------------------------|----|-----|-----|-----|--------------------|----------------|---------------------------|---|----|-----------------------------|----|----|----|-------------|-----|-------------|---|---------------------------|-----|---------------------------|------------|--------------|----|----------|----|----------------------|---|---------------|-----|------------------|----|--|--|--------------------|-----|---------------------|----|------------|--------------|-----------------|------------|------------|---|--------------|----|-----|-----|-----------------|----|----------------------|----|--------------------------|--|-------------------|-----|---------------------|----|----------------|-----|---------------------|----|----------------|----|----------------------|----|--|--|---|--|--|--|--|--|-----------------|----|-----------------|----|------------|----|-----------------|----|--|--|------------------|----|-----------|---|--------------------------|---|--|--|---------------------------|---|--|--|--------------------------|---|------------|---|------------|---|-----------|---|-------------|------|
| Stream Name: THAUTIL R. TRIBUTARY | | | | Stream "Local": TH51 | | | | Access: 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Watershed Code: 460-6006-508-822-000-000-000-000-000-000-000 | | | | Reach No.: 3 | | | | Reach Length (km): 2.0 Method: MW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: SITE LOCATED ~1000 m U/S FROM THE BASE OF REACH 3. | | | | Map #: 093L043 | | | | Site No.: 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date: 10/15/96 | | | | Time: 9:15 | | | | Fish Card: N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Agency: C58 | | | | U.T.M.: 9.6029 60311 | | | | Field: Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey Crew: DB\CP\ \ \ \ \ \ \ \ | | | | Photos: DB4/17, 18 | | | | Historical: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Air Photos: BC 7326-142 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Characteristics | | | | | | Bed Material | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="8">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Av. Chan. Width (m):</td> <td>1.1</td> <td>Method Av. Chan. Width (m):</td> <td>T</td> <td>0.7</td> <td>0.6</td> <td>0.9</td> <td>1.2</td> <td>1.9</td> <td>1.6</td> </tr> <tr> <td>Av. Wet. Width (m):</td> <td>1.1</td> <td>Method Av. Wet. Width (m):</td> <td>T</td> <td>0.7</td> <td>0.6</td> <td>0.9</td> <td>1.2</td> <td>1.9</td> <td>1.6</td> </tr> <tr> <td>Av. Max. Rif. Depth (cm):</td> <td>24</td> <td>Av. Max. Riffle Depth (cm):</td> <td>MS</td> <td>22</td> <td>25</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Av. Max. Pool Depth (cm):</td> <td>31</td> <td>Av. Max. Pool Depth (cm):</td> <td>24</td> <td>32</td> <td>28</td> <td>34</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gradient (%):</td> <td>2.0</td> <td>Method Gradient:</td> <td>CL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% Pool: 70</td> <td>% Riffle: 10</td> <td>% Run: 20</td> <td>% Other: 0</td> <td colspan="6">Method: GE</td> </tr> <tr> <td>% Side Channel:</td> <td>0</td> <td>Method Side Channel:</td> <td>GE</td> <td colspan="6"></td> </tr> <tr> <td>% Debris Area:</td> <td>0</td> <td>Method Debris Area:</td> <td>GE</td> <td colspan="6"></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | | | | | | | Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 0.7 | 0.6 | 0.9 | 1.2 | 1.9 | 1.6 | Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 0.7 | 0.6 | 0.9 | 1.2 | 1.9 | 1.6 | Av. Max. Rif. Depth (cm): | 24 | Av. Max. Riffle Depth (cm): | MS | 22 | 25 | | | | | Av. Max. Pool Depth (cm): | 31 | Av. Max. Pool Depth (cm): | 24 | 32 | 28 | 34 | | | | Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | | % Pool: 70 | % Riffle: 10 | % Run: 20 | % Other: 0 | Method: GE | | | | | | % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | % Debris Area: | 0 | Method Debris Area: | GE | | | | | | | <table border="1"> <tbody> <tr> <td>% Fines (<2mm):</td> <td>70</td> <td>% Fines (<2mm):</td> <td>70</td> </tr> <tr> <td>% Gravels:</td> <td>30</td> <td>Small (2-16mm):</td> <td>20</td> </tr> <tr> <td></td> <td></td> <td>Large (16-64mm):</td> <td>10</td> </tr> <tr> <td>% Larges:</td> <td>0</td> <td>Small cobble (64-128mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Large cobble (128-256mm):</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>Boulder cobble (>256mm):</td> <td>0</td> </tr> <tr> <td>% Bedrock:</td> <td>0</td> <td>% Bedrock:</td> <td>0</td> </tr> <tr> <td>D90 (cm):</td> <td>3</td> <td>Compaction:</td> <td>High</td> </tr> </tbody> </table> | | | | | | % Fines (<2mm): | 70 | % Fines (<2mm): | 70 | % Gravels: | 30 | Small (2-16mm): | 20 | | | Large (16-64mm): | 10 | % Larges: | 0 | Small cobble (64-128mm): | 0 | | | Large cobble (128-256mm): | 0 | | | Boulder cobble (>256mm): | 0 | % Bedrock: | 0 | % Bedrock: | 0 | D90 (cm): | 3 | Compaction: | High |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Chan. Width (m): | 1.1 | Method Av. Chan. Width (m): | T | 0.7 | 0.6 | 0.9 | 1.2 | 1.9 | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Wet. Width (m): | 1.1 | Method Av. Wet. Width (m): | T | 0.7 | 0.6 | 0.9 | 1.2 | 1.9 | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Rif. Depth (cm): | 24 | Av. Max. Riffle Depth (cm): | MS | 22 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Av. Max. Pool Depth (cm): | 31 | Av. Max. Pool Depth (cm): | 24 | 32 | 28 | 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gradient (%): | 2.0 | Method Gradient: | CL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Pool: 70 | % Riffle: 10 | % Run: 20 | % Other: 0 | Method: GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Fines (<2mm): | 70 | % Fines (<2mm): | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Gravels: | 30 | Small (2-16mm): | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large (16-64mm): | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Larges: | 0 | Small cobble (64-128mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Large cobble (128-256mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Boulder cobble (>256mm): | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % Bedrock: | 0 | % Bedrock: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D90 (cm): | 3 | Compaction: | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover | | | | | | Banks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td>Cover Total % :</td> <td>75</td> <td>Method Cover Total %:</td> <td>GE</td> <td colspan="2"></td> </tr> <tr> <td>Dp Pool :</td> <td>0</td> <td>L.O.D.:</td> <td>0</td> <td>Boulder:</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td>In Veg.:</td> <td>20</td> <td>Over Veg:</td> <td>70</td> </tr> <tr> <td>Crown Closure % :</td> <td></td> <td>Method Crown Closure:</td> <td></td> <td>Aspect :</td> <td>E</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>Method Aspect:</td> <td>AE</td> </tr> </tbody> </table> | | | | | | Cover Total % : | 75 | Method Cover Total %: | GE | | | Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | | | In Veg.: | 20 | Over Veg: | 70 | Crown Closure % : | | Method Crown Closure: | | Aspect : | E | | | | | Method Aspect: | AE | <table border="1"> <tbody> <tr> <td>Height (m):</td> <td>0.6</td> <td>% Unstable:</td> <td>0</td> </tr> <tr> <td>Textures Fines:</td> <td>Yes</td> <td>Gravel: No</td> <td>Larges: No</td> </tr> <tr> <td>Confinement:</td> <td>4</td> <td>Bedrock:</td> <td>No</td> </tr> <tr> <td>Valley: Chan. Ratio:</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Stage:</td> <td>L</td> <td></td> <td></td> </tr> <tr> <td>Flood Signs Ht(m):</td> <td>0.1</td> <td>Method Flood Signs:</td> <td>MS</td> </tr> <tr> <td>Braided:</td> <td>N</td> <td>Method Braided:</td> <td>GE</td> </tr> <tr> <td>Bars (%):</td> <td>0</td> <td>Method Bars:</td> <td>GE</td> </tr> <tr> <td>pH:</td> <td>8.1</td> <td>Method pH:</td> <td>PH</td> </tr> <tr> <td>02 (ppm):</td> <td></td> <td>Method Dissolved Oxygen:</td> <td></td> </tr> <tr> <td>Water Temp. (°C):</td> <td>1.0</td> <td>Method Temperature:</td> <td>TC</td> </tr> <tr> <td>Turb. (cm):</td> <td>200</td> <td>Method Turbidity:</td> <td>GE</td> </tr> <tr> <td>Cond. (µmhos):</td> <td>20</td> <td>Method Conductivity:</td> <td>CM</td> </tr> </tbody> </table> | | | | | | Height (m): | 0.6 | % Unstable: | 0 | Textures Fines: | Yes | Gravel: No | Larges: No | Confinement: | 4 | Bedrock: | No | Valley: Chan. Ratio: | 2 | | | Stage: | L | | | Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS | Braided: | N | Method Braided: | GE | Bars (%): | 0 | Method Bars: | GE | pH: | 8.1 | Method pH: | PH | 02 (ppm): | | Method Dissolved Oxygen: | | Water Temp. (°C): | 1.0 | Method Temperature: | TC | Turb. (cm): | 200 | Method Turbidity: | GE | Cond. (µmhos): | 20 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cover Total % : | 75 | Method Cover Total %: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dp Pool : | 0 | L.O.D.: | 0 | Boulder: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | In Veg.: | 20 | Over Veg: | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crown Closure % : | | Method Crown Closure: | | Aspect : | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Method Aspect: | AE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Height (m): | 0.6 | % Unstable: | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Textures Fines: | Yes | Gravel: No | Larges: No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Confinement: | 4 | Bedrock: | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valley: Chan. Ratio: | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stage: | L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flood Signs Ht(m): | 0.1 | Method Flood Signs: | MS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Braided: | N | Method Braided: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bars (%): | 0 | Method Bars: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH: | 8.1 | Method pH: | PH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 02 (ppm): | | Method Dissolved Oxygen: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Temp. (°C): | 1.0 | Method Temperature: | TC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turb. (cm): | 200 | Method Turbidity: | GE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cond. (µmhos): | 20 | Method Conductivity: | CM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="4">Specific Data</th> </tr> </thead> <tbody> <tr> <td>Wetted Width (m) :</td> <td></td> <td>Method Wetted Width (m) :</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mean Depth (m) :</td> <td></td> <td>Method Mean Depth (m) :</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mean Velocity (m/s) :</td> <td></td> <td>Method Mean Velocity (m/s)</td> <td>VO</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Discharge (m3/s) :</td> <td>0.03</td> <td>Method Discharge (m3/s) :</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | | | | | | | | Specific Data | | | | Wetted Width (m) : | | Method Wetted Width (m) : | | | | | Mean Depth (m) : | | Method Mean Depth (m) : | | | | | Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wetted Width (m) : | | Method Wetted Width (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Depth (m) : | | Method Mean Depth (m) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean Velocity (m/s) : | | Method Mean Velocity (m/s) | VO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Discharge (m3/s) : | 0.03 | Method Discharge (m3/s) : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Symbol | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tbody> <tr> <td colspan="2"></td> <td>(Fish)</td> </tr> <tr> <td colspan="2"></td> <td>NF</td> </tr> <tr> <td>1</td> <td>B</td> <td>2.0</td> </tr> <tr> <td colspan="2">(Width, Valley: Channel, Slope)</td> <td>7300</td> </tr> <tr> <td colspan="2"></td> <td>(Bed Material)</td> </tr> </tbody> </table> | | | | | | | | (Fish) | | | NF | 1 | B | 2.0 | (Width, Valley: Channel, Slope) | | 7300 | | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Fish) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | B | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Width, Valley: Channel, Slope) | | 7300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (Bed Material) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-822-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|---|
| C1 | Electrofished 60 m length of stream, 1 pass with no lower net. No fish were caught or observed. |
| C2 | Suspect fish use ends a the top of R2. No barriers were observed throughout R2 and R3 but it was difficult to see small creek within the forest. R3 is classed as S5 habitat. |
| C3 | Air Temp. - 5 C. |
| C4 | Lat/Lon of helicopter landing site: 54 25.02 127 25.72 |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-895-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|--|-----------------|--------------------------------|----------------------|-------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH53 | Access: | 11 |
| Watershed Code: | 460-6006-508-895-000-000-000-000-000-000-000 | Reach No.: | 1 | Reach Length (km): | 0.9 Method: MW |
| Location: | SITE LOCATED ~135 m U/S FROM THE MOUTH. | Site No.: | 1 | Length surveyed (m): | 300.0 Method: JIC |
| | | Map #: | 093L044 | Fish Card: | N |
| | | U.T.M.: | 9.6087 .60326 | Field: | Yes |
| Date: 10/22/96 | Time: 13:30 | Agency: CS8 | Survey Crew: JH/SS \ \ \ \ \ \ | Historical: | No |
| | | | | Photos: | not available |
| | | | | Air Photos: | BC 7326:147 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 1.6 | Method Av. Chan. Width (m): | T | 1.3 | 1.8 | 1.5 | 1.6 | 1.3 | 1.8 |
| Av. Wet. Width (m): | 1.0 | Method Av. Wet. Width (m): | T | 1.0 | 1.1 | 1.0 | | | |
| Av. Max. Rif. Depth (cm): | 12 | Av. Max. Riffle Depth (cm): | MS | 9 | 12 | 15 | | | |
| Av. Max. Pool Depth (cm): | 21 | Av. Max. Pool Depth (cm): | 12 | 19 | 18 | 26 | | | |
| Gradient (%): | 13.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 80 | % Run: 0 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0-10 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0-10 | Method Debris Area: | GE | | | | | | |

Cover

| | | | | | | | |
|-------------------|-----------|-----------------------|------------|--------------|-------------------|--|--|
| Cover Total % : | 35 | Method Cover Total %: | GE | | | | |
| Dp Pool : 20 | L.O.D.: 5 | Boulder: 25 | In Veg.: 0 | Over Veg: 30 | Cutbank: 20 | | |
| Crown Closure % : | 15 | Method Crown Closure: | GE | Aspect : S | Method Aspect: AE | | |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.02 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| | (Fish) |
| | DV |
| 2 A 13 0 | 1270 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

Bed Material

| | | | |
|-----------------|----|---------------------------|--------|
| % Fines (<2mm): | 5 | % Fines (<2mm): | 5 |
| % Gravels: | 20 | Small (2-16mm): | |
| | | Large (16-64mm): | |
| % Larges: | 75 | Small cobble (64-128mm): | |
| | | Large cobble (128-256mm): | |
| | | Boulder cobble (>256mm): | |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 34 | Compaction: | Medium |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------|
| Height (m): | 0.4 | % Unstable: | 0 |
| Textures Fines: | No | Gravel: No | Larges: Yes |
| Confinement: | 2 | Bedrock: | No |
| Valley: Chan. Ratio: | 1 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | | Method Bars: | |
| pH: | 8.1 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 3.0 | Method Temperature: | 1C |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 100 | Method Conductivity: | CM |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-895-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

| Species | Number | Size Range (mm) | Life Phase | Use 1 | Use 2 | Use 3 | Method/Reference |
|---------|--------|-----------------|------------|-------|-------|-------|------------------|
| DV | 2 | 100, 135 | A | M | S | | EL |

Obstructions

| Obstruction Ht(m) | Type | Location |
|-------------------|------|----------|
| 1 | X | 0.1 |

Comments

- C1 Electrofished 40 m length of stream, 1 pass with no lower net. DV were caught.
- C2 The gradient from mouth of creek is 16-18% which then decreases going u/s to 9-12%.
- C3 The lower 135 m of stream contains several debris/rock jams up to 0.9 m in height; none are migration barriers.
- C4 ~135 m u/s from the mouth, an unnaped tributary flows into Th53 on river left; the gradient is 20% from the mouth and no fish habitat is present.
- C5 Air Temp: 5 C.
- C6 R1 is classed a S3 habitat to 300 m, suspected S3 habitat from 300 m to 600 m, and S6 habitat u/s of 600 m.

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-895-000-000-000-000-000-000-000

Header Information

| | | | | | |
|-----------------|---|-----------------|-------------------------------|----------------------|------------------------------------|
| Stream Name: | THAUTIL R. TRIBUTARY | Stream "Local": | TH53 | Access: | H |
| Watershed Code: | 460-6006-508-895-000-000-000-000-000-000-000 | Reach No.: | 3 | Reach Length (km): | 1.5 Method: MW |
| Location: | SITE LOCATED ~100 m U/S FROM THE BASE OF REACH 3, IN LOWER SECTION OF UPPER MEADOW. | Site No.: | 2 | Length surveyed (m): | 57.0 Method: IIC |
| | U.T.M. : 9.6087 60326 | Fish Card: | N | Field: | Yes Historical: No |
| Date: 10/15/96 | Time: 20:00 | Agency: C58 | Survey Crew: DB\CP\ \ \ \ \ \ | Photos: | DB4/21, 22 Air Photos: BC 7326:147 |

Channel Characteristics

| | | | | | | | | | |
|---------------------------|--------------|-----------------------------|------------|------------|-----|-----|-----|-----|-----|
| | | <i>Specific Data</i> | | | | | | | |
| Av. Chan. Width (m): | 0.9 | Method Av. Chan. Width (m): | T | 0.6 | 1.1 | 1.2 | 1.0 | 0.8 | 0.5 |
| Av. Wet. Width (m): | 0.9 | Method Av. Wet. Width (m): | T | 0.6 | 1.1 | 1.2 | 1.0 | 0.8 | 0.5 |
| Av. Max. Rif. Depth (cm): | 10 | Av. Max. Riffle Depth (cm): | MS | 10 | 10 | 10 | | | |
| Av. Max. Pool Depth (cm): | 22 | Av. Max. Pool Depth (cm): | 10 | 20 | 20 | 25 | | | |
| Gradient (%): | 12.0 | Method Gradient: | CL | | | | | | |
| % Pool: 20 | % Riffle: 60 | % Run: 20 | % Other: 0 | Method: GE | | | | | |
| % Side Channel: | 0 | Method Side Channel: | GE | | | | | | |
| % Debris Area: | 0 | Method Debris Area: | GE | | | | | | |

Bed Material

| | | | |
|-----------------|----|---------------------------|------|
| % Fines (<2mm): | 40 | % Fines (<2mm): | 40 |
| % Gravels: | 30 | Small (2-16mm): | 30 |
| | | Large (16-64mm): | 0 |
| % Larges: | 30 | Small cobble (64-128mm): | 0 |
| | | Large cobble (128-256mm): | 20 |
| | | Boulder cobble (>256mm): | 10 |
| % Bedrock: | 0 | % Bedrock: | 0 |
| D90 (cm): | 26 | Compaction: | High |

Cover

| | | | |
|----------------------|------------------------|-----------------------|---------------------------------|
| Cover Total % : | 100 | Method Cover Total %: | GE |
| Dp Pool: 0 L.O.D.: 0 | Boulder: 0 In Veg.: 10 | Over Veg: 70 | Cutbank: 20 |
| Crown Closure % : | 70 | Method Crown Closure: | GE Aspect: SW Method Aspect: AE |

Banks

| | | | |
|----------------------|-----|--------------------------|-------------------------|
| Height (m): | 0.3 | % Unstable: | 0 |
| Textures Fines: | Yes | Gravel: No | Larges: Yes Bedrock: No |
| Confinement: | 3 | | |
| Valley: Chan. Ratio: | 2 | | |
| Stage: | M | | |
| Flood Signs Ht(m): | | Method Flood Signs: | |
| Braided: | N | Method Braided: | GE |
| Bars (%): | 0 | Method Bars: | GE |
| pH: | 8.0 | Method pH: | PH |
| 02 (ppm): | | Method Dissolved Oxygen: | |
| Water Temp. (°C): | 2.0 | Method Temperature: | IC |
| Turb. (cm): | 200 | Method Turbidity: | GE |
| Cond. (µmhos): | 130 | Method Conductivity: | CM |

Discharge

| | | | |
|-----------------------|----------------------------|---------------------------|--|
| | | <i>Specific Data</i> | |
| Wetted Width (m) : | Method Wetted Width (m) : | | |
| Mean Depth (m) : | Method Mean Depth (m) : | | |
| Mean Velocity (m/s) : | Method Mean Velocity (m/s) | VO | |
| Discharge (m3/s) : | 0.04 | Method Discharge (m3/s) : | |

Reach Symbol

| | |
|---------------------------------|----------------|
| (Fish) | |
| NF | |
| I B 12.0 | 4330 |
| (Width, Valley: Channel, Slope) | (Bed Material) |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-895-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- | | |
|----|--|
| C1 | Electrofished 57 m length of stream, 1 pass with no lower net. No fish were caught or observed. |
| C2 | No barriers were noted by air d/s of the sample site, but creek is small and hard to see. R2 and R3 are classed as S6 habitat based on size and gradient of the tributary. |
| C3 | Deer tracks were noted in the snow. |
| C4 | Thick moss is present on the channel bed material. |
| C5 | Lat/Lon of helicopter landing site: 54 26.81 127 19.13 |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-940-000-000-000-000-000-000-000

| Header Information | | | | | | | | | |
|---------------------------|--|--|--|-----------------------------|--|-------------------------------|--|-------------------------|--|
| Stream Name: | | THAUTIL R. TRIBUTARY | | | | Stream "Local": | | TH54 | |
| Watershed Code: | | 460-6006-508-940-000-000-000-000-000-000-000 | | | | Reach No.: | | 1 | |
| Location: | | SITE LOCATED ~670 m U/S FROM THE MOUTH. | | | | Site No.: | | 1 | |
| Date: 10/15/96 | | Time: 13:00 | | Agency: C58 | | Survey Crew: RD\SS\ \ \ \ \ \ | | Fish Card: N | |
| | | | | | | U.T.M.: | | 9.6091 .60328 | |
| | | | | | | Photos: | | A13/13, 14 | |
| | | | | | | Access: | | H | |
| | | | | | | Reach Length (km): | | 0.8 Method: MW | |
| | | | | | | Length surveyed (m): | | 100.0 Method: HC | |
| | | | | | | Field: Yes | | Historical: No | |
| | | | | | | Air Photos: | | BC 7326.148 | |
| Channel Characteristics | | | | | Specific Data | | | | |
| Av. Chan. Width (m): | | 2.2 | | Method Av. Chan. Width (m): | | T | | 2.3 2.3 2.5 1.8 2.4 1.9 | |
| Av. Wet. Width (m): | | 2.2 | | Method Av. Wet. Width (m): | | T | | 2.1 2.2 2.5 1.7 2.4 | |
| Av. Max. Rif. Depth (cm): | | 9 | | Av. Max. Riffle Depth (cm): | | MS | | | |
| Av. Max. Pool Depth (cm): | | 36 | | Av. Max. Pool Depth (cm): | | 9 | | | |
| Gradient (%): | | 9.0 | | Method Gradient: | | CL | | | |
| % Pool: 20 | | % Riffle: 75 | | % Run: 5 | | % Other: 0 | | Method: GE | |
| % Side Channel: | | 0 | | Method Side Channel: | | GE | | | |
| % Debris Area: | | 0-10 | | Method Debris Area: | | GE | | | |
| Cover | | | | | | | | | |
| Cover Total % : | | 80 | | Method Cover Total %: | | GE | | | |
| Dp Pool : 25 | | L.O.D.: 10 | | Boulder: 50 | | In Veg.: 10 | | Over Veg: 0 Cutbank: 5 | |
| Crown Closure % : | | | | Method Crown Closure: | | Aspect : NW | | Method Aspect: AE | |
| Discharge | | | | | Specific Data | | | | |
| Wetted Width (m) : | | | | Method Wetted Width (m) : | | | | | |
| Mean Depth (m) : | | | | Method Mean Depth (m) : | | | | | |
| Mean Velocity (m/s) : | | | | Method Mean Velocity (m/s) | | VO | | | |
| Discharge (m3/s) : | | 0.06 | | Method Discharge (m3/s) : | | | | | |
| Reach Symbol | | | | | | | | | |
| | | | | | (Fish) | | | | |
| | | | | | (DV) | | | | |
| | | | | | 2 B 9.0 1270 | | | | |
| | | | | | (Width, Valley: Channel, Slope) (Bed Material) | | | | |
| Bed Material | | | | | | | | | |
| % Fines (<2mm): | | 5 | | % Fines (<2mm): | | 5 | | | |
| % Gravels: | | 25 | | Small (2-16mm): | | 5 | | | |
| | | | | Large (16-64mm): | | 20 | | | |
| % Larges: | | 70 | | Small cobble (64-128mm): | | 50 | | | |
| | | | | Large cobble (128-256mm): | | 15 | | | |
| | | | | Boulder cobble (>256mm): | | 5 | | | |
| % Bedrock: | | 0 | | % Bedrock: | | 0 | | | |
| D90 (cm): | | 22 | | Compaction: | | Medium | | | |
| Banks | | | | | | | | | |
| Height (m): | | 0.6 | | % Unstable: | | 10 | | | |
| Textures Fines: | | Yes | | Gravel: Yes | | Larges: No | | Bedrock: No | |
| Confinement: | | 3 | | | | | | | |
| Valley: Chan. Ratio: | | 2 | | | | | | | |
| Stage: | | M | | | | | | | |
| Flood Signs Ht(m): | | 0.2 | | Method Flood Signs: | | MS | | | |
| Braided: | | N | | Method Braided: | | GE | | | |
| Bars (%): | | 2 | | Method Bars: | | GE | | | |
| pH: | | 7.8 | | Method pH: | | PH | | | |
| O2 (ppm): | | | | Method Dissolved Oxygen: | | | | | |
| Water Temp. (°C): | | 1.9 | | Method Temperature: | | TC | | | |
| Turb. (cm): | | 200 | | Method Turbidity: | | GE | | | |
| Cond. (µmhos): | | 60 | | Method Conductivity: | | CM | | | |

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-940-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Planimetric View

Fish Summary

Obstructions

| Obstruction | Ht(m) | Type | Location |
|-------------|-------|------|----------|
| 1 | | F | 0.3 |
| 2 | | F | 0.5 |

Comments

- C1Electrofished 78 m length of stream, 1 pass with no lower net. No fish were caught or observed although habitat is suitable for fish use. Creek may be too steep to support fish or the ~1.5 m high falls located ~500 m u/s from the mouth may be a migration barrier. The 0.8 m high falls at 300 m is a restriction to fish but not a barrier.
- C2R1 is classed as suspected S3 habitat up to the 1.5 m high falls and S6 habitat u/s from the falls.
- C3Channel is confined; numerous 15-20 m high eroding banks were observed on river left in the lower 300 m of the creek.
- C4Lat/Lon of helicopter landing site: 54 25.78 127 19.23

2-Mar-9

Stream: THAUTIL R. TRIBUTARY

460-6006-508-940-000-000-000-000-000-000-000

79

DFO/MoELP Stream Survey Form

27-Mar-97

Stream: THAUTIL R. TRIBUTARY

Watershed Code:

Stream Survey Report

460-6006-508-940-000-000-000-000-000-000-000

Stream/Valley Cross-Section

Stream/Valley Cross Section

Fish Summary

Obstructions

Comments

- C1
- Electrofished 95 m length of stream, 1 pass with no lower net. No fish were caught or observed.
- C2
- Small, stable creek; suitable for fish throughout R2 but may be too small to support residents (1.5 m high falls in R1 is a barrier to fish migration). Suspect creek dewater/freezes in the winter. Pockets of suitable DV spawning habitat are present.
- C3
- R2 is classed as S6 habitat.
- C4
- Lat/Lon of helicopter landing site: 54 25.37 127 19.08