Reconnaissance Level Fish and Fish Habitat Inventory in the Bulkley T.S.A.

(Working Unit #2 - Babine)

TRITON
Environmental Consultants Ltd.

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Prepared for:

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EXECUTIVE SUMMARY

Triton Environmental Consultants Ltd. was retained by Pacific Inland Resources (PIR) in partnership with the Ministry of Environment, Lands and Parks (MELP) in Smithers to conduct reconnaissance level fish and fish habitat inventories in the Bulkley Forest District. This report summarizes the historical fisheries data collected by SKR Consultants Ltd. and the field data collected by Triton survey crews in working unit 2. The historical records indicate the presence of the following species in this working area:

- steelhead and rainbow trout (*Oncorhynchus mykiss*)
- sockeye (*O. nerka*)
- chinook (*O. tshawytcha*)
- pink (*O. gorbuscha*)
- coho (*O. kisutch*)
- cutthroat trout (*O. clarkii*)
- Dolly Varden (*Salvelinus malma*)
- mountain whitefish (*Prosopium williamsoni*)

A total of 56 sites were sampled between July 25 and October 2 1996 and July 7 and September 20 1997. Five sites were classified as "Not A Creek" due to the lack of a defined channel. Fish were captured by electrofishing at 9 sites and by minnow trapping at 3 sites. Fish were also visually observed at 1 site. The species sampled in this inventory include: cutthroat trout, rainbow trout, Dolly Varden and sockeye salmon. A total of 15 sites were classified as S5 or S6 and the basis for the non fish bearing status is summarized. The report also includes recommendations for resampling in reaches that fish are likely to use, but where no fish were caught.

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ACKNOWLEDGMENTS

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1.0 INTRODUCTION

1.1 Background

Pacific Inland Resources retained Triton Environmental Consultants Ltd. (Triton) to conduct a reconnaissance level fish and fish habitat inventory in 14 different watersheds in the Bulkley Forest District. Existing information on fish distribution within the watersheds under investigation was collected by SKR Consultants Ltd., in Smithers, B.C. Data from provincial and federal government sources such as the Stream Information Summary System (SISS) and the Fisheries Information Summary System (FISS) were researched for information. Stream classification is required under the Forest Practices Code (FPC) of British Columbia Act (Bill 40 - 1994) and the associated Operational Planning Regulation enacted in June 1995. It is used to determine the appropriate width of riparian management areas. This report summarizes historical and field data collected in unit 2, which covers the section of the Babine River and its tributaries north of Nilkitkwa Lake (see Figure 1). Historical fisheries information is available for only one tributary (480- 3352) in this unit (Saimoto 1996). The remaining historical records are for the Babine River and indicate that the following species are found in the study area :

- steelhead and rainbow trout
- sockeye
- chinook
- pink
- coho
- cutthroat trout
- Dolly Varden
- mountain whitefish

1.2 Objectives

Triton's objectives in this inventory, were to describe fish distributions and habitat characteristics, and to provide stream classifications according to the Forest Practices Code. Fish and fish habitat operational inventories consist of:

- reconnaissance-level surveys aimed at characterizing fish habitat and distribution,
- identification of fish and fish habitat values that require special designation under the Forest Practices Code (e.g. sensitive areas); and
- new, reinterpreted, or augmented data to meet Forest Practices Code requirements for classification of areas (e.g. fish stream classification).

2.0 STUDY AREA

2.1 Location

The Bulkley Forest district is located in north-central British Columbia and contains several major tributaries to the Babine and Bulkley Rivers. The 1:20,000 TRIM maps covering working unit 2 are: 93 M 047, 93 M 057, 93 M 067,93 M 056, 93 M 066. The Babine working unit cover approximately 285 km² and comprises 3.6% of the study area. It includes part of the Babine drainage (Fisheries Class 1 Waters) located in the Bulkley forest district. This working area extends from the confluence with the Nilkitkwa River in the south to the forest district boundary in the west. The eastern boundary occurs along the height of land separating the Babine drainage from a main tributary, the Nilkitkwa drainage (Saimoto 1996). The southwest side divides the Babine drainage from the Nichyeskwa drainage (working unit 3). The streams sampled in unit 2 are all tributaries to the Babine River.

2.3 Access

Most of the Babine working unit is accessible by helicopter or boat, with road access for only 8 of the significant tributaries, located on the eastern side of the river (Saimoto 1996). The streams on the west side of the river, as well as the remaining streams on the east side of the river, require boat access for the lower reaches and helicopter access for the upper reaches. The streams sampled in this unit were sampled primarily by helicopter crews, with some road access.

2.4 Resource Use

Logging is the primary resource activity in this working unit

3.0 METHODS

3.1 Physical

Prior to the start of the field program 1:20,000 TRIM maps were used to estimate the location of reach breaks, as needed to identify potential sampling sites. The locations of these reach breaks were subsequently confirmed or modified during the field studies.

The survey was conducted by a 10 person field crew working as 5 teams in 1996 and an 8 person field crew working as 4 teams in 1997. Sites at the top of the watershed were sampled first to determine fish presence whenever possible. DFO/MELP Stream Inventory Survey forms were filled out for each site (Department of Fisheries and Oceans and Ministry of Environment, 1989). Channel widths were measured with hip chains, measuring tapes, meter sticks or were visually estimated where wading conditions were

dangerous. Water depths were measured with a meter stick. Stream classifications, whether fish bearing or non fish bearing, require the measurement of a minimum of six channel widths. Stream gradients were measured using a Suunto clinometer. In order to allow for future verification of sampling sites, all sampling sites were permanently marked with unique flagging tape (blue and white striped) and the GPS locations of all sites were noted.

Photos were taken at each site to document field data and conditions. Canon Sure Shot A1 Prima AS-1 cameras were used for this purpose. The camera is equipped with a 32 mm lens. Photos were typically taken of both the upstream and downstream view of the stream and any characteristic features such as cascades and falls. Photos were also often taken of fish captured at the site. The film used was 200 ISO. The photodocumentation summary appears in Appendix 2.

3.2 Biological

Triton obtained fish sampling permits from the appropriate DFO and MELP offices. Fish presence or absence was established by electrofishing, minnow trapping and occasionally angling. Electrofishing was carried out at all sites where fish presence has not been determined upstream, or where habitat characteristics were sufficiently different from other sites. A minimum area of approximately 100 m^2 was electrofished, however, a larger area was often fished above barriers. The effort (shocking time and distance shocked) was recorded for each sample site. A variety of electroshocker models were used in this study including :

- Smithroot 12 B POW
- Smithroot Type VII
- Smithroot 15 A
- Coffelt Mark 10

The electroshockers were commonly set at 60HZ at 6MS, however adjustments were made where appropriate. Salt was not used at any of the sample sites. The fork length of each fish collected was measured and, when necessary, voucher specimens were collected and stored in a 10% formaldehyde solution in plastic bags. These specimens were delivered to the Smithers office of BC Environment. Where necessary , sampling crews used the Field Key to the Freshwater Fishes of British Columbia (RIC manual), to identify fish to species. Additionally, bull trout were distinguished from Dolly Varden by a branchiostegal ray count and /or the Bull Trout and Dolly Varden LDF Identification Formula (Haas and McPhail 1991).

The data collected from existing sources and during the field program were used to determine the riparian class as defined under the *Forest Practices Code*. Table 1 provides

the FPC definition of each riparian class. Draft procedures are also outlined in the guidebook to determine the riparian management areas (RMA) for lakes (L1 - L4), wetlands (W1 - W5) and fisheries sensitive zones.

4.0 PHYSICAL CHARACTERISTICS

4.1 Stream Flow

There are no Water Survey of Canada (WSC) gauging stations located within the boundaries of Unit 2.

4.2 Water Quality

As agreed with the Ministry Representative, water samples were not collected for chemical analyses. The parameters that were measured for each site, however were temperature, pH and conductivity. Conductivity was measured with a handheld Hanna TDS Tester #3 and a Hanna Conductivity TDS #3. The acceptable values of conductivity for electroshocking purposes must exceed 30 µS. The pH was measured with a handheld Hanna pH meter 3#, an Oakton pH Tester #2 and a Hanna HI9024 Microcomputer pH meter, low pH Regents Accutron" Water Test System. Water temperature was measured with a Weksler general purpose thermometer. Turbidity was determined subjectively and it was stipulated by the ministry representative during the 1996 quality assurance phase of the project, that the depth of the deepest pool would be the default value in the database when the water was clear to the bottom. During the 1997 season turbidity was measured only in cases where the water could not be described as clear to bottom.

Table 2 summarizes the pH , temperature and conductivity measurements collected during this inventory. Water temperatures ranged from 5.0 to 21°C, with an average of value of 11.93. The pH ranged from 5.80 to 7.69, with an average value of 6.88. The conductivity ranged from 20 to 130 with an average value of 51.67. The turbidity values are not discussed here as the values were defaulted on request of the QA/QC monitor to the depth of the deepest pool when turbidity was recorded as clear to the bottom. This value is not considered indicative of the stream turbidity by Triton and will not be discussed further.

5.0 RESULTS AND DISCUSSION

The survey took place between July 28th and August 7th 1996 and July 7 and September 20 1997. A total of 56 sites were sampled and 5 sites were classified as "Not a creek" due the absence of a defined channel in the sampling areas. Fish were caught by electrofishing at 9 sites, by minnow trapping at 3 sites and were visually observed at 1 site. The species sampled in this inventory include: cutthroat trout, rainbow trout, Dolly Varden and

sockeye salmon. Fifteen sites were classified as non fish bearing, due to the presence of impassable barriers and or a lack of suitable habitat in the sampling areas. A summary of significant barriers identified in this working unit is provided in **Table 3.** The summary information for all of the sample sites is listed in **Table 4** and includes proposed stream classifications, fish data, and sampling methods. This table is arranged by sub basin, in alphabetical order. The stream cards and accompanying site photos are also arranged in alphabetical sub basin order and appear with the appropriate sub basin description in this report. A list of sample sites classified as non fish bearing is provided in **Table 5** and **Table 6** lists sites for which future sampling is recommended. **Table 7** summarizes the wildlife and wildlife signs observed by Triton crews in working unit 2. Individual fish data for this working unit has been summarized in Appendix 1. Fish catch data were compiled for all records that contained a discrete size measurement. These data were summarised and plotted in histograms by species, the results are presented in Figures 2a through 2d.

5.1 Babine River (480-0000-000) (93 M 066, 93 M 057, 93 M 056, 93 M 047)

5.1.1 Sensitive Habitats and Barriers

Approximately 28.8 km of the Babine River flows through this working unit. The Babine River has low gradient and multiple rapids in this area. In addition, the side slopes have moderate to low gradient. A 2 km section of the Babine on TRIM sheet 93 M 056 is somewhat confined. Approximately 48 tributaries flow into the Babine River in this unit. The area in the vicinity of and to the south of the confluence with the Nilkitkwa River, is easily accessed by road. The tributaries to the Babine were sampled at 56 locations.

5.1.2 Fish Summary Table and Stream Classification

The historical information indicates the presence of a wide variety of fish species in this unit. Fish sampling was conducted by electrofishing at the majority of the sites and minnow trapping at select sites. Fish were caught at 9 sites and the species captured include, Dolly Varden, rainbow trout, cutthroat trout and sockeye salmon. The Babine River mainstem was not sampled in this study but would be classified as an S1 based on fish presence and an average channel width well in excess of 20 meters.

The tributaries in this working unit range in size from S2 to S4 and S6. The majority of the tributaries sampled in 1996 were classified as S3 based on channel widths equal to or exceeding 1.5 meters. Some S5 and S6 streams were also identified in this unit based on the presence of barriers and a lack of evidence of a resident population above these barriers (see Table 3). For example sites J55 through J58 have been classified as non fish bearing as no fish were caught at either of these sites, and both are located above an impassable 5 meter falls.

DFO/MoELP Stream Survey Form **Site Number:** E289 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: E289, Unit 2, NE of the Babine River **Stream (Gaz.):** Unnamed **Watershed Code:** 019-9500-000-000-000-000-000-000-000-000-000-

Map #: 93 M 067 **Reach Length (km):** 2.2 MA **Date:** 11-Sep-97 **Time:** 12:13 **Agency:** TEC **Access:** V4 **Fish Card:** N **Field** ☒ **Historical** ☐

U.T.M. : 9 .6397 .61654 **Length surveyed (m):** 400.0 GE **Survey Crew:** SJ UL \ \ \ \ \ \ \ **Photos:** E-28-22,23 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.1	MS
Av. Wet. Width (m):	0.9	MS
Av. Max Riffle Depth (cm):	3	MS
Av. Max Pool Depth (cm):	23	MS
Gradient (%):	6.0	CL
Pool: 15 Riffle: 25 Run: 60 Other:	0	
% Side Channel:	10-40	GE
% Debris Area:	>15	GE
%Stable:	10	GE

Specific Data

0.8	1.2	1.2	1.5	0.7	1.2
0.6	1.0	1.0	0.5	0.6	1.5
5	3	2			
30	23	15			

Cover

Cover Total % : 20 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
20	40	0	0	20	20

Crown Closure % : 25 Aspect : S

Bed Material

Fines	Clay, silt, sand (<2mm):	90	90
Gravels	Small (2-16mm):	10	10
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 5 Compaction: Low

Discharge

Wetted Width (m) :	0.3	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.22	F
Discharge (m3/s) :	0.00	F

Banks

Height (m): 0.1

% Unstable: 10

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0.2

Bars (%): 0 pH: 6.8 Braided: Y

Water Temp. (°C): 8.0 02 (ppm):

Turb. (cm): Cond. (µmhos): 30

Reach Symbol

(Fish)

NF

1 D 6.0 | 9100

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1 S6

C2 LS = 20%, RS = 4%

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a Smithroot 12 B POW model set at I-5-400V, was 196 seconds over 100 meters.

C5 No additional bank texture information.

C6 DO was not measured, the water was clear to the bottom. The air temperature at this site was 18.C.

C7 LOD and pools provide some rearing cover at this site. The substrate is unsuitable for spawning. This reach is narrow and moves through an alder swale.

Photo #: E-27-22, 10-Sep-97
Site #: E289, Looking upstream at the channel, note the dense riparian cover

Photo #: E-27-23, 10-Sep-97
Site #: E289, Looking downstream at the channel

DFO/MoELP Stream Survey Form **Site Number:** E291 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: E291, Unit 2, NE of the Babine River. Stream (Gaz.): Unnamed Watershed Code: 016-9000-000-000-000-000-000-000-000-000-000-

Map #: 93 M 057 Reach Length (km): 3.0 MA Date: 11-Sep-97 Time: 14:39 Agency: TEC Access: V4 Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .6401 .61631 Length surveyed (m): 800.0 GE Survey Crew: SJ \UL\ \ \ \ \ \ \ Photos: E-28-4,5 Air Photos:

Channel Characteristics

Av. Chan. Width (m):	1.5	MS
Av. Wet. Width (m):	1.2	MS
Av. Max Riffle Depth (cm):	3	MS
Av. Max Pool Depth (cm):	13	MS
Gradient (%):	3.0	CL
Pool: 20 Riffle: 60 Run: 20 Other:	0	
% Side Channel:	0-10	GE
% Debris Area:	>15	GE
%Stable:	0	GE

Specific Data

1.6	1.7	1.4	0.7	2.2	1.5
1.4	1.6	1.1	0.6	1.5	1.2
1	3	3	4	2	
13	12	17	15	9	

Cover

Cover Total % : 20 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
20	20	20	0	30	10

Crown Closure % : 40 Aspect : SW

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	10	5
	Large (16-64mm):		5
Larges	Sm. cobble (64-128mm):	80	20
	Lge cobble (128-256mm):		40
	Bldr cobble (>256mm):		20
Bedrock		0	0

D90 (cm): 29 Compaction: High

Discharge

Wetted Width (m) :	0.9	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.20	F
Discharge (m3/s) :	0.01	F

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0.2

Bars (%): 0 pH: 6.0 Braided: Y

Water Temp. (°C): 9.0 02 (ppm):

Turb. (cm): Cond. (µmhos): 20

Reach Symbol

(Fish)

(DV) (RB)

2 D 3.0 | 1180

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1: S3

C2: LS = 1%, RS = 5%

C3: No fisheries sensitive zones present.

C4: The electroshocking effort, using a Smithroot 12 B POW model, set at I-5-500V, was 244 seconds over 100 meters.

C5: Fines and larges make up the bank texture at this site.

C6: DO was not measured, the water was clear to the bottom. The air temperature at this site was 14.C.

C7: This reach runs through a 20 yr old burned over cutblock. Rearing habitat was noted in the form of pools, boulders and overstream vegetation. A large amount of LOD, perhaps associated with logging activities, was observed in the channel.

C8: This reach was sampled twice in successive years and no fish were caught.

Photo #: E-28-4, 11-Sep-97
Site #: E291, Looking upstream at the channel

Photo #: E-28-5, 11-Sep-97
Site #: E291, Looking downstream at the channel

DFO/MoELP Stream Survey Form

Site Number: E94 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: E94, Unit 2, West of Babine River. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-6600-000-000-000-000-000-000-000-000-000-

Map #: 93 M 057 Reach Length (km): 1.4 MA Date: 20-Jul-97 Time: 16:30 Agency: TEC Access: H Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .6396 .61570 Length surveyed (m): 100.0 GE Survey Crew: EM \JL \ \ \ \ \ \ \ Photos: E-9-7,8 Air Photos:

Channel Characteristics

Av. Chan. Width (m):	1.6	MS
Av. Wet. Width (m):	1.1	MS
Av. Max Riffle Depth (cm):	3	MS
Av. Max Pool Depth (cm):	22	MS
Gradient (%):	4.0	CL
Pool: 10 Riffle: 20 Run: 70 Other:	0	
% Side Channel:	0-10	GE
% Debris Area:	>15	GE
%Stable:	10	GE

Specific Data

1.5	1.7	1.7	1.6	1.5
1.0	1.3	1.2	1.1	1.0
3	4	3	2	3
25	20	27	20	19

Bed Material

Fines	Clay, silt, sand (<2mm):	20	20
Gravels	Small (2-16mm):	50	25
	Large (16-64mm):		25
Larges	Sm. cobble (64-128mm):	30	20
	Lge cobble (128-256mm):		10
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 13 Compaction: Medium

Cover

Cover Total % : 20 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	30	20	0	30	20

Crown Closure % : 90 Aspect : E

Discharge

Wetted Width (m) :	1.3	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.21	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: M Flood Signs Ht(m): 0.4

Bars (%): 30 pH: 7.5 Braided: N

Water Temp. (°C): 6.0 02 (ppm):

Turb. (cm): Cond. (µmhos): 30

Reach Symbol

(Fish)

(DV)

2 C 4.0 | 2530

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1: S3

C2: LS = 4%, RS = 5%

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithrooot 12 B POW model, set at I-5-400V, was 200 seconds over 100 meters

C5: Fines and larges make up the bank texture at this site.

C6: DO was not measured, the water was clear to the bottom. The mean air temperature on this day was 16.6.C.

C7: Cobble and overstream vegetation cover was noted in this reach. The site is heavily overgrown with alder.

Photo #: E-9-7, 20-Jul-97
Site #: E94, Looking downstream at the channel

Photo #: E-9-8, 20-Jul-97
Site #: E94, Looking upstream at the channel

DFO/MoELP Stream Survey Form

Site Number: JULIE 40 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 40, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-9100-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 3.3 Mw **Date:** 30-Jul-96 **Time:** 10:19 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6382 .61618 **Length surveyed (m):** 103.0 HC **Survey Crew:** JP \KG\ \ \ \ \ \ \ **Photos:** J-3-1 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	3.1	MS
Av. Wet. Width (m):	2.7	MS
Av. Max Riffle Depth (cm):	10	MS
Av. Max Pool Depth (cm):	24	MS
Gradient (%):	3.0	CL
Pool: 60 Riffle: 40 Run: 0 Other:	0	
% Side Channel:	0	GE
% Debris Area:	5-15	GE
%Stable:	20	GE

Specific Data

2.9	3.1	2.7	3.0	3.7
2.3	3.0	2.5	2.5	3.4
7	14	8		
34	21	16		

Cover

Cover Total % : 70 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	10	35	5	40	10

Crown Closure % : 70 Aspect : S

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	30	10
	Large (16-64mm):		20
Larges	Sm. cobble (64-128mm):	60	10
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		35
Bedrock		0	0

D90 (cm): 26 Compaction: Medium

Discharge

Wetted Width (m) :	2.8	MS
Mean Depth (m) :	0.3	MS
Mean Velocity (m/s) :	0.05	F
Discharge (m3/s) :	0.03	F

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

RB

3 B 3.0 | 1260

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: FC

Valley : Channel Ratio 2-5

Stage: M Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 34 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	RB	1	28	F	R			EL

Comments

C1 S3

C2 LS=15%, RS=10%

C3 A large swamp is associated with the channel at this site.

C4 The electroshocking effort, using a Smithroot 12 B POW model, was 511seconds over 100m.

C5 Lat N 55 34' 56.7" , Long W 126 48' 04.1"

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 11.3°C

C8 Some excellent fish cover was noted at this site.

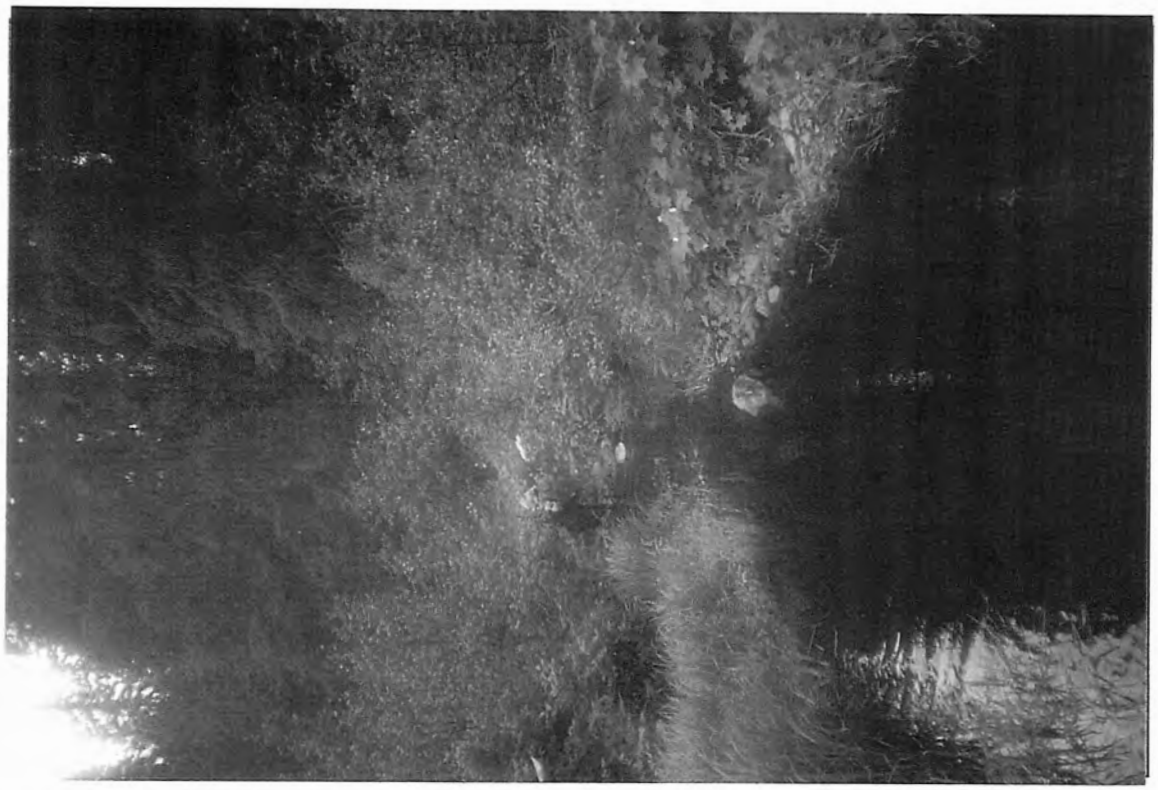

Photo #: J-3-1, 1996/07/30
Site #: J40, Looking downstream.

DFO/MoELP Stream Survey Form

Site Number: JULIE 41 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 41, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-1000-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 Reach Length (km): 1.3 MW Date: 30-Jul-96 Time: 11:55 Agency: TEC Access: HL Fish Card: N Field ☒ Historical ☐

U.T.M.: 9 .6373 .61576 Length surveyed (m): 500.0 GE Survey Crew: JP\KG\ \ \ \ \ \ \ Photos: J-3-2,3,4 Air Photos:

Channel Characteristics

	Av. Chan. Width (m):	3.3	GE
	Av. Wet. Width (m):	3.3	GE
N	Av. Max Riffle Depth (cm):	0	MS
	Av. Max Pool Depth (cm):	83	MS
	Gradient (%):	0.0	CL
	Pool: 100 Riffle: 0 Run: 0 Other: 0		
	% Side Channel:	0-10	GE
	% Debris Area:	5-15	GE
	%Stable:	100	GE

Specific Data

4.0	2.5	3.0	3.5
4.0	2.5	3.0	3.5
0	0	0	0
80	95	75	

Cover

Cover Total %: 85 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
70	5	0	15	10	0

Crown Closure %: 0 Aspect: NW

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):		0
	Lge cobble (128-256mm):	0	0
	Bldr cobble (>256mm):		0
Bedrock		0	0

N D90 (cm): 0 Compaction: Low

Obstructions

C	Height (m)	Type	Location
	5	F	0.5

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				MT

Discharge

N	Wetted Width (m):		
N	Mean Depth (m):		
N	Mean Velocity (m/s):		
N	Discharge (m3/s):		

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: Flood Flood Signs Ht(m): 0.1

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 16.0 02 (ppm):

Turb. (cm): 95 Cond. (µmhos):

Reach Symbol

(Fish)

NF

3 D 0.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Comments

C1 S5

C2 LS=10%, RS=10%

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a Smithroot 12 B POW model, was 400 seconds over 100 meters.One trap, with a 24 hr soak time, was set.

C5 Lat N 55 33'27" 126 49'00"

C6 No additional bank texture information.

C7 This reach has been classified as non fish bearing because it is located above a 5 meter falls (on the main tributary) which would prevent fish passage upstream and because no evidence of either a resident population was found. The mean air temperature on this day was 11.3°C

C8 Sampled in marshy section with several beaver dams and ponds.

Photo #: J-3-2, 1996/07/30
Site #: d/s J41, Waterfall downstream from site J41.

Photo #: J-3-3, 1996/07/30
Site #: d/s J41, Waterfall downstream from site J41.

Photo #: J-3-4, 1996/07/30
Site #: J41, Channel in meadow above beaver dam.

DFO/MoELP Stream Survey Form

Site Number: JULIE 46 **Reach No.:** 4

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 46, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 018-2800-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 0.7 MW **Date:** 29-Jul-96 **Time:** 8:35 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 . 6293 . 61580 **Length surveyed (m):** 400.0 GE **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** J-3-9 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.4	MS
Av. Wet. Width (m):	1.4	MS
Av. Max Riffle Depth (cm):	0	MS
Av. Max Pool Depth (cm):	50	MS
Gradient (%):	0.5	CL

Pool: 100 Riffle: 0 Run: 0 Other: 0

% Side Channel:	0	GE
% Debris Area:	5	GE
%Stable:	80	GE

Specific Data

1.2	1.6	1.3	1.3	1.4	
1.2	1.6	1.3	1.3	1.4	
0	0	0	0	0	0
44	50	56			

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Cover

Cover Total % : 35 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
60	5	0	20	10	5

Crown Closure % : 10 Aspect : N

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: Flood Flood Signs Ht(m): 0.2

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 12.0 02 (ppm):

Turb. (cm): 56 Cond. (µmhos):

Reach Symbol

(Fish)

(DV)

I D 0.5 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S4

C2: LS= 10, RS=15

C3: No fisheries sensitive zones.

C4: The electroshocking effort, using a Smithroot 12 B POW model, was 845 seconds over 200m. The crew sampled below a small lake, in area that used to have an old beaver dam. Minnow trap set in small lake upstream

C5: N 55 33' 04" W 126 56' 56"

C6: No visible obstructions or additional bank texture infonnation.

C7: DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: This site has marginal fish habitat.

DFO/MoELP Stream Survey Form

Site Number: JULIE 55 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 55, Unit 2, NW of J41, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-9400-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 1.1 MW **Date:** 07-Aug-96 **Time:** 10:03 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M.: 9 .6360 .61602 **Length surveyed (m):** 142.0 HC **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** J-3-19 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.3	MS
Av. Wet. Width (m):	1.1	MS
Av. Max Riffle Depth (cm):	0	MS
Av. Max Pool Depth (cm):	13	MS
Gradient (%):	4.0	CL

Pool: 80 Riffle: 0 Run: 20 Other: 0

% Side Channel:	0-10	GE
% Debris Area:	0-5	GE
%Stable:	80	GE

Specific Data

1.0	1.1	1.4	1.6	1.5
1.0	1.0	1.5	1.2	1.0
0	0	0	0	0
10	14	15		

Cover

Cover Total %: 60 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
5	10	30	5	45	5

Crown Closure %: 70 Aspect: E

Bed Material

Fines	Clay, silt, sand (<2mm):	30	30
Gravels	Small (2-16mm):	40	10
	Large (16-64mm):		30
Larges	Sm. cobble (64-128mm):	30	5
	Lge cobble (128-256mm):		10
	Bldr cobble (>256mm):		15
Bedrock		0	0

D90 (cm): 29 Compaction: Medium

Discharge

Wetted Width (m):	1.0	MS
Mean Depth (m):	0.1	MS
Mean Velocity (m/s):	0.16	F
Discharge (m3/s):	0.01	F

Reach Symbol

(Fish)

NF

1 D 4.0 | 3430

(Width, Valley: Channel, Slope) (Bed Material)

Banks

Height (m): 0.1

% Unstable: 15

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0

Bars (%): 0 pH: 7.0 Braided: N

Water Temp. (°C): 10.0 02 (ppm):

Turb. (cm): 1022 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location
	5	F	0.5

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1 S6

C2 LS=5%,RS=6%

C3 No fisheries sensitive zones were noted at this site.

C4 The electroshocking effort, using a Smithroot 12 B POW model, was 645 seconds over 142 meters.

C5 Lat N 55 33'53.8", Long W 126 50'35.1"

C6 No additional bank texture information.

C7 DO, pH, conducitivity were not measured at this site. The mean air temperature on this day was 12.7°C

C8 This small tributary has been classified as non fish bearing because it is situated above a 5 meter falls on the main tributary, (which would prevent fish access to this smaller tributary), it contains no overwintering habitat and would not be expected to support a resident population.

Photo #: J-3-19, 1996/08/2
Site #: J55, Large cobble and fine substrate.

DFO/MoELP Stream Survey Form

Site Number: JULIE 56 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 56, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-9500-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 1.9 MW **Date:** 07-Aug-96 **Time:** 10:00 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6361 .61596 **Length surveyed (m):** 112.0 HC **Survey Crew:** JP \KG\ \ \ \ \ \ \ **Photos:** J- -3-20 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	3.1	MS
Av. Wet. Width (m):	3.0	MS
Av. Max Riffle Depth (cm):	8	MS
Av. Max Pool Depth (cm):	28	MS
Gradient (%):	1.0	CL
Pool: 90 Riffle: 10 Run: 0 Other:	0	
% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	80	GE

Specific Data

3.2	3.1	2.9	4.1	2.5	0.0
2.1	3.1	2.2	5.3	2.1	0.0
7	10	8	0	0	0
47	20	13	32	0	0

Cover

Cover Total % : 75 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
25	25	10	0	20	20

Crown Closure % : 60 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	30	30
Gravels	Small (2-16mm):	30	15
	Large (16-64mm):		15
Larges	Sm. cobble (64-128mm):	40	10
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		15
Bedrock		0	0

D90 (cm): 28 Compaction: High

Discharge

Wetted Width (m) :	1.6	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.20	F
Discharge (m3/s) :	0.02	f

Banks

Height (m): 15.0

% Unstable: 10

F Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0

Bars (%): 5 pH: 7.7 Braided: N

Water Temp. (°C): 12.0 02 (ppm):

Turb. (cm): 32 Cond. (µmhos): 100

Reach Symbol

(Fish)

NF

3 D 1.0 | 3340

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location
	5	F	0.5

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1 S5

C2 LS-7,RS-11

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a Smithroot 12 B POW model, was 1224 seconds over 150 meters.

C5 Lat N 55 33' 48.2" Long W 126 50' 35.4"

C6 No additional bank texture information.

C7 DO, pH, conducitivty were not measured at this site. The mean air temperature on this day was 12.7°C

C8 This tributary has been classified as non fish bearing because it is located above a 5 meter falls on the main tributary, which would prevent fish passage upstream to the sampling area.

Photo #: J-3-20, 1996/08/2
Site #: J56, Channel through willows.

DFO/MoELP Stream Survey Form

Site Number: JULIE 57 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 57, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-9300-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 3.4 MW **Date:** 07-Aug-96 **Time:** 10:00 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6370 .61592 **Length surveyed (m):** 20.0 HC **Survey Crew:** JP \KG \ \ \ \ \ \ \ **Photos:** J-3-21 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	4.0	MS
Av. Wet. Width (m):	0.0	
Av. Max Riffle Depth (cm):	0	GE
Av. Max Pool Depth (cm):	0	GE
Gradient (%):	0.0	CL
Pool: 0 Riffle: 0 Run: 0 Other: 0		
% Side Channel:	0	
% Debris Area: 0		GE
%Stable:	0	GE

Specific Data

3.5	3.4	4.3	4.1	4.4	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 0 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

Crown Closure % : 0 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Banks

Height (m): 0.0

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: Dry Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 02 (ppm):

Turb. (cm): 0 Cond. (µmhos):

Reach Symbol

(Fish)

NF

4 D 0.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location
	5	F	0.5

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S5

C2 LS-0%,RS-0%

C3 No fisheries sensitive zones noted.

C4 This dry site was not electrofished.

C5 Lat N 55 33' 45.0" , Long W 126 50 36.6"

C6 No additional bank texture information.

C7 No water quality measurements could be made at this site. The mean air temperature on this day was 12.7°C

C This tributary has been classified as non fish bearing because of the 5 meter falls downstream, which would prevent fish passage upstream. This tributary would not be expected to support a resident population.

Photo #: J-3-21, 1996/08/2
Site #: J57, Grass lined channel through willows

DFO/MoELP Stream Survey Form

Site Number: JULIE 58

Reach No.: 1

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 58, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-0400-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 2.9 MW **Date:** 07-Aug-96 **Time:** 13:20 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 . 6372 .61593 **Length surveyed (m):** 20.0 HC **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** J-3-22 **Air Photos:**

Channel Characteristics

	Av. Chan. Width (m):	1.1	MS
	Av. Wet. Width (m):	1.4	MS
N	Av. Max Riffle Depth (cm):	0	MS
	Av. Max Pool Depth (cm):	40	MS
	Gradient (%):	0.0	CL
	Pool: 100 Riffle: 0 Run: 0 Other: 0		
	% Side Channel:	0	GE
	% Debris Area:	0-5	GE
	%Stable:	90	GE

Specific Data

1.0	1.3	1.4	1.0	1.0	
1.5	1.1	1.5	1.7	1.3	
0	0	0	0	0	0
56	41	41	41	0	0

Cover

Cover Total % : 35 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	5	0	10	65	20

Crown Closure % : 50 Aspect : NW

Bed Material

Fines	Clay, silt, sand (<2mm):	80	80
Gravels	Small (2-16mm):	10	0
	Large (16-64mm):		10
Larges	Sm. cobble (64-128mm):	10	10
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

N D90 (cm): 7 Compaction: Low

Discharge

Wetted Width (m) :	1.9	MS
Mean Depth (m) :	0.4	MS
Mean Velocity (m/s) :	0.03	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: Flood Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 56 Cond. (µmhos):

Reach Symbol

(Fish)

NF

1 D 0.0 | 8110

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location
	5	F	0.5

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				VO

Comments

C1 S6

C2 LS-8,RS-8

C3 No fisherics sensitive zones noted.

C4 This site was not electrofished.

C5 Lat N 55 33'42.9" Long W 126 49'53.2"

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 12.7°C

C8 This reach has been classified as non fish bearing because the 5 meter falls downstream would prevent fish migration upstream to this area.

Photo #: J-3-22, 1996/08/2
Site #: J58, Grass lined channel through willows

DFO/MoELP Stream Survey Form

Site Number: JULIE 60 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 60, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-4700-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 | Reach Length (km): 1.8 MW | Date: 07-Aug-96 | Time: 16:30 | Agency: TEC | Access: HL | Fish Card: N | Field ☒ | Historical ☐

U.T.M. : 9 .6347 .61621 | Length surveyed (m): 1700.0 AE | Survey Crew: JP\KG\ \ \ \ \ \ \ | Photos: J-3-25 | Air Photos:

Channel Characteristics

	Av. Chan. Width (m):	1.0	AE
	Av. Wet. Width (m):	0.8	GE
N	Av. Max Riffle Depth (cm):	0	AE
N	Av. Max Pool Depth (cm):	0	AE
	Gradient (%):	2.0	MA
	Pool: 0 Riffle: 0 Run: 100 Other: 0		
	% Side Channel:	0-10	GE
	% Debris Area:	0	GE
	%Stable:	0	AE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 0 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

Crown Closure % : 0 Aspect : E

Bed Material

Fines	Clay, silt, sand (<2mm):	0	0
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction:

Discharge

N	Wetted Width (m) :	0.0	
N	Mean Depth (m) :	0.0	
N	Mean Velocity (m/s) :	0.00	
N	Discharge (m3/s) :		

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: Y

Water Temp. (°C): 02 (ppm):

Turb. (cm): Cond. (µmhos):

Reach Symbol

(Fish)

NF

1 D 2.0 | 0000

(Width, Valley: Channel, Slope) | (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				VO

Comments

C1 S6

C2 The side slopes were not measured at this site.

C3 No fisheries sensitive zones were noted at this site.

C4 This site was not electrofished.

C5 Lat N 55 35'10.5" Long W 126 52' 0.8"

C6 No additional bank texture information.

C7 Water quality was not measured at this site. The mean air temperature on this day was 12.7°C

C8 This reach has been given a non fish bearing classification because of a steep gradient barrier at the mouth of the stream, which would prevent fish access upstream.

Photo #: J-3-25, 1996/08/2
Site #: J60, Looking upstream through meadow.

DFO/MoELP Stream Survey Form

Site Number: JULIE 61 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 61, Unit 2, see C5. **Stream (Gaz.):** Unamed **Watershed Code:** 017-4900-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 3.1 MA **Date:** 07-Aug-96 **Time:** 16:45 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6335 .61612 **Length surveyed (m):** 3100.0 AE **Survey Crew:** JP\KG\ \ \ \ \ \ **Photos:** None **Air Photos:**

Channel Characteristics

N	Av. Chan. Width (m):	1.5	AE
N	Av. Wet. Width (m):	0.0	
N	Av. Max Riffle Depth (cm):	0	AE
N	Av. Max Pool Depth (cm):	0	AE
	Gradient (%):	5.0	MU
N	Pool: 0 Riffle: 0 Run: 0 Other: 0		
N	% Side Channel:		
N	% Debris Area: 0		AE
	%Stable:	0	AE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 0 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

Crown Closure % : 0 Aspect : NE

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	30	
	Large (16-64mm):		
Larges	Sm. cobble (64-128mm):	60	
	Lge cobble (128-256mm):		
	Bldr cobble (>256mm):		
Bedrock		0	0

D90 (cm): 26 Compaction:

Discharge

N	Wetted Width (m) :	0.0	
N	Mean Depth (m) :	0.0	
N	Mean Velocity (m/s) :	0.00	
N	Discharge (m3/s) :		

Banks

Height (m): 0.0

% Unstable: 0

Fines ☐ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: N/A

Valley : Channel Ratio N/A

Stage: Dry Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 02 (ppm):

Turb. (cm): Cond. (µmhos):

Reach Symbol

(Fish)

(RB)

2 E 5.0	1360
(Width, Valley: Channel, Slope)	(Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				VO

Comments

C5 Lat N 55 35'10.5" Long W 126 53'0.5"

C6 No additional bank texture information.

C1 S3

C2 The side slopes were not measured.

C3 No fisheries sensitive zones noted.

C4 This site was not electrofished, as this was an aerial survey.

C7 The mean air temperature on this day was 12.7.C.

C8 The gradient reaches 14% above this reach.

DFO/MoELP Stream Survey Form

Site Number: RYAN 29 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 29, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 081-9300-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 047 **Reach Length (km):** 1.0 MA **Date:** 29-Jul-96 **Time:** 8:15 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6416 .61509 **Length surveyed (m):** 100.0 GE **Survey Crew:** RH \DD\ \ \ \ \ \ \ **Photos:** R-3-1 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.6	MS
Av. Wet. Width (m):	0.5	MS
Av. Max Riffle Depth (cm):	4	MS
Av. Max Pool Depth (cm):	8	MS
Gradient (%):	1.0	CL

Pool: 10 Riffle: 15 Run: 75 Other: 0

% Side Channel:	0-10	GE
% Debris Area:	>15	GE
%Stable:	20	GE

Specific Data

0.6	0.8	0.8	0.4	0.5
0.6	0.5	0.6	0.4	0.5
4	5	4		
7	10			

Cover

Cover Total % : 70 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	15	0	10	55	20

Crown Closure % : 85 Aspect : E

Bed Material

Fines	Clay, silt, sand (<2mm):	85	85
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	15	5
	Lge cobble (128-256mm):		5
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 26 Compaction: Low

Discharge

Wetted Width (m) :	0.3	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.28	F
Discharge (m3/s) :	0.01	F

Banks

Height (m): 0.3

% Unstable: 5

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(RB)

I D 1.0 | 9010

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 10.0 02 (ppm):

Turb. (cm): 10 Cond. (µmhos):

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S4

C2 LS=25, RS=20

C3 No fisheries sensitive zones.

C4 The electroshocking effort was 120 seconds over 100 meters with a Smithroot 12 B POW model.

C5 N 55 28' 34" W 126 45' 20"

C6 No additional bank texture information.

C7 DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 No permanent obstructions were noted. The culvert could be an obstruction at low flows.

Photo #: R-3-1, 1996/07/29
Site #: R29, Looking upstream from road.

DFO/MoELP Stream Survey Form

Site Number: RYAN 30 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 30, Unit 2 , see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 081-7200-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 047 **Reach Length (km):** 5.3 MA **Date:** 29-Jul-96 **Time:** 9:00 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M.: 9 .6419 .61501 **Length surveyed (m):** 50.0 GE **Survey Crew:** RH\DD\ \ \ \ \ \ \ **Photos:** R-3-2 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.1	MS
Av. Wet. Width (m):	1.8	MS
Av. Max Riffle Depth (cm):	8	MS
Av. Max Pool Depth (cm):	20	MS
Gradient (%):	4.0	CL
Pool: 35 Riffle: 30 Run: 35 Other:	0	
% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	50	GE

Specific Data

2.5	1.2	2.2	1.9	2.0	2.8
2.0	0.9	1.8	1.9	1.8	2.6
5	10				
12	25	23			

Cover

Cover Total % : 75 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	15	5	0	65	5

Crown Closure % : 85 Aspect : E

Bed Material

Fines	Clay, silt, sand (<2mm):	30	30
Gravels	Small (2-16mm):	30	15
	Large (16-64mm):		15
Larges	Sm. cobble (64-128mm):	40	15
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 27 Compaction: Medium

Discharge

Wetted Width (m) :	1.0	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.27	F
Discharge (m3/s) :	0.15	F

Banks

Height (m): 0.3

% Unstable: 5

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

RB

2 D 4.0 | 3340

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.5

Bars (%): 10 pH: Braided: N

Water Temp. (°C): 13.0 02 (ppm):

Turb. (cm): 25 Cond. (µmhos):

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
C4	RB	12	50	J	R			EL
	RB	8	25	F	R			EL

Comments

C1 S3

C2 LS=25, RS=28

C3 No fisheries sensitive zones.

C4 The electroshocking effort, using a Smithroot 12 B POW model was 150 seconds over 50 meters. Ten rainbow trout were visually observed.

C5 N 55 28' 16" W 126 44' 51"

C6 No additional bank texture information.

C7 DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 This site has some excellent rearing habitat.

Photo #: R-3-2, 1996/07/29
Site #: R30, Looking upstream from road.

DFO/MoELP Stream Survey Form

Site Number: RYAN 31 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 31, Unit 2 , see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 081-7300-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 047 **Reach Length (km):** 3.5 MW **Date:** 29-Jul-96 **Time:** 9:55 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6420 .61491 **Length surveyed (m):** 100.0 GE **Survey Crew:** RH \DD\ \ \ \ \ \ \ **Photos:** R-3-3 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.8	MS
Av. Wet. Width (m):	1.4	MS
Av. Max Riffle Depth (cm):	8	MS
Av. Max Pool Depth (cm):	14	MS
Gradient (%):	4.0	CL
Pool: 25 Riffle: 45 Run: 30 Other:	0	
% Side Channel:	0	GE
% Debris Area:	5-15	GE
%Stable:	50	GE

Specific Data

2.1	1.5	1.3	2.0	2.0	1.9
1.7	1.3	1.0	1.7	1.3	1.4
9	7	8			
15	14				

Cover

Cover Total % : 85 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
5	15	5	0	60	15

Crown Closure % : 85 Aspect : SE

Bed Material

Fines	Clay, silt, sand (<2mm):	20	20
Gravels	Small (2-16mm):	40	15
	Large (16-64mm):		25
Larges	Sm. cobble (64-128mm):	40	20
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 28 Compaction: Medium

Discharge

Wetted Width (m) :	1.3	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.19	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.4

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: L Flood Signs Ht(m): 0.4

Bars (%): 5 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 15 Cond. (µmhos):

Reach Symbol

(Fish)

RB

2 C 4.0 | 2440

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	RB	2	80	J	R			EL

Comments

C1 S3

C2 LS=3, RS=3

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a smithroot 12 B POW model, was 120 seconds over 100 meters.

C5 N 55 27' 47" W 126 44' 37"

C6 No additional bank texture information.

C7 DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 Overstream vegetation provides most of the cover for fish at this site. Rearing habitat and some spawning sized gravels were noted.

Photo #: R-3-3, 1996/07/29
Site #: R31, Looking upstream.

DFO/MoELP Stream Survey Form

Site Number: RYAN 32 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 32, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 081-6300-000-000-000-000-000-000-000-000-000-0

Map #:	93 M 047	Reach Length (km):	2.2	MW	Date:	29-Jul-96	Time:	10:45	Agency:	TEC	Access:	HL	Fish Card:	N	Field ☒ Historical ☐
U.T.M.:	9 .6434 .61478	Length surveyed (m):	100.0	GE	Survey Crew:	RH \DD\ \ \ \ \ \ \			Photos:	R-3-4	Air Photos:				

Channel Characteristics

Av. Chan. Width (m):	0.8	MS
Av. Wet. Width (m):	0.5	MS
Av. Max Riffle Depth (cm):	4	MS
Av. Max Pool Depth (cm):	8	MS
Gradient (%):	0.5	CL
Pool: 5 Riffle: 5 Run: 90 Other: 0		
% Side Channel:	0-10	GE
% Debris Area:	5-15	GE
%Stable:	90	GE

Specific Data

0.5	1.3	0.7	0.7
0.3	0.6	0.5	0.5
4			
9	7		

Cover

Cover Total %: 90 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	10	0	5	80	5

Crown Closure %: 95 Aspect: E

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m):	0.3	MS
Mean Depth (m):	0.1	MS
Mean Velocity (m/s):	0.14	F
Discharge (m3/s):	0.00	F

Banks

Height (m): 0.1

% Unstable: 5

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 9 Cond. (µmhos):

Reach Symbol

(Fish)

(RB)

I D 0.5 F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S4

C2: The side slopes were not measured at this site.

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithroot 12 B POW model was 25 seconds over 20 meters.

C5: Lat N 55 27' 41", Long W 126 44' 58"

C6: No additional bank texture information.

C7: DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: This site would provide rearing habitat at higher flows, however, the channel ends above the road crossing.

Photo #: R-3-4, 1996/07/29
Site #: R32, Looking upstream from road.

DFO/MoELP Stream Survey Form

Site Number: RYAN 34

Reach No.: 3

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 34, Unit 2 , see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-4100-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 066 **Reach Length (km):** 3.7 MA **Date:** 29-Jul-96 **Time:** 14:30 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 . 6362 . 61627 **Length surveyed (m):** 100.0 GE **Survey Crew:** RH \DD\ \ \ \ \ \ \ **Photos:** R-3-6 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.8	MS
Av. Wet. Width (m):	2.7	MS
Av. Max Riffle Depth (cm):	11	MS
Av. Max Pool Depth (cm):	53	MS
Gradient (%):	5.0	CL
Pool: 10 Riffle: 15 Run: 75 Other:	0	
% Side Channel:		GE
% Debris Area:	5-15	GE
%Stable:	90	GE

Specific Data

3.2	2.6	3.4	2.1
3.2	2.5	3.2	2.0
10	12	0	0
45	61		

Cover

Cover Total % : 70 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
5	5	5	25	50	10

Crown Closure % : 70 Aspect : SW

Bed Material

Fines	Clay, silt, sand (<2mm):	85	85
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	15	5
	Lge cobble (128-256mm):		5
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 25 Compaction: Low

Discharge

Wetted Width (m) :	3.0	MS
Mean Depth (m) :	0.4	MS
Mean Velocity (m/s) :	0.01	F
Discharge (m3/s) :	0.01	F

Banks

Height (m): 0.3

% Unstable: 5

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

NF

3 D 5.0 | 8020

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0

Bars (%): 0 pH: 5.8 Braided: N

Water Temp. (°C): 5.0 02 (ppm):

Turb. (cm): 35 Cond. (µmhos): 30

Obstructions

C	Height (m)	Type	Location
	4	F	4.1

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S6

C2 LS=22, RS=15

C3 No fisheries sensitive zones.

C4 The electroshocking effort, using a Smithroot 12 B POW model was 150 seconds over 100 meters.

C5 N 55 35' 29" W 126 50' 21"

C6 No additional bank texture information.

C7 Some good rearing habitat was noted, spawning habitat could be present further downstream. The mean air temperature on this day was 19.7°C

C8 Beaver activity was noted.

Photo #: R-3-6, 1996/07/29
Site #: R34, Looking downstream, channel through willows.

DFO/MoELP Stream Survey Form

Site Number: RYAN 35 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 35, Unit 2 , see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-0

Map #: 93 M 066 **Reach Length (km):** 4.4 MA **Date:** 29-Jul-96 **Time:** 16:30 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6362 .61680 **Length surveyed (m):** 3000.0 HC **Survey Crew:** RH \DD \ \ \ \ \ \ **Photos:** None **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.9	GE
Av. Wet. Width (m):	2.7	GE
Av. Max Riffle Depth (cm):	20	GE
Av. Max Pool Depth (cm):	35	GE
Gradient (%):	6.0	GE
Pool: 30 Riffle: 50 Run: 20 Other:	0	
% Side Channel:	0-10	GE
% Debris Area:	0-5	GE
%Stable:	40	GE

Specific Data

0

Cover

Cover Total % : 70 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	10	10	0	65	5

Crown Closure % : 70 Aspect : SW

Bed Material

Fines	Clay, silt, sand (<2mm):	20	20
Gravels	Small (2-16mm):	35	15
	Large (16-64mm):		20
Larges	Sm. cobble (64-128mm):	45	15
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		15
Bedrock		0	0

D90 (cm): 30 Compaction: Medium

Discharge

N	Wetted Width (m) :	
N	Mean Depth (m) :	
N	Mean Velocity (m/s) :	
N	Discharge (m3/s) :	

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0

Bars (%): 5 pH: 7.0 Braided: N

Water Temp. (°C): 5.0 02 (ppm):

Turb. (cm): 35 Cond. (µmhos): 50

Reach Symbol

(Fish)

SK

3 D 6.0 | 2440

(Width, Valley: Channel, Slope) | (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	SK	10	450	A	S			VO

Comments

C1 S3

C2 LS= 6%, RS= 5%

C3 No fisheries sensitive zones.

C4 This site was not electrofished.

C5 N 55 35' 30" W 126 52' 20"

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 Spawning sockeye were observed at the mouth of this stream.

DFO/MoELP Stream Survey Form

Site Number: RYAN 37 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 37, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 3.3 MW **Date:** 30-Jul-96 **Time:** 9:20 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 . 6413 . 61552 **Length surveyed (m):** 100.0 HC **Survey Crew:** RH \EM\ \ \ \ \ \ \ **Photos:** R-3-7 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.7	MS
Av. Wet. Width (m):	0.6	MS
Av. Max Riffle Depth (cm):	9	MS
Av. Max Pool Depth (cm):	19	MS
Gradient (%):	2.0	CL
Pool: 10 Riffle: 10 Run: 80 Other: 0		
% Side Channel:	0	GE
% Debris Area:	5-15	GE
%Stable:	50	GE

Specific Data

0.9	0.8	0.7	0.8	0.5	0.4
0.8	0.8	0.6	0.8	0.4	0.4
8	8	12	0	0	0
22	16	20	0	0	0

Cover

Cover Total % : 80 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	10	0	0	80	10

Crown Closure % : 80 Aspect : NE

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

N D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m) :	0.3	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.06	F
Discharge (m3/s) :	0.00	F

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(DV)

I D 2.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: H Flood Signs Ht(m): 0.1

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 12.5 02 (ppm):

Turb. (cm): 22 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				VO

Comments

C1 S4

C2 LS=10%, RS=14%

C3 No fisheries sensitive zones were noted at this site.

C4 This site was not electroshocked due to equipment malfunction.

C5 Lat N 55 31'20" 126 45'51"

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 11.3°C

C8 This site could provide rearing habitat.

Photo #: R-3-7, 1996/07/30
Site #: R37, Looking downstream through alder.

DFO/MoELP Stream Survey Form

Site Number: TERRY 25 **Reach No.:** 2

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 25, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-9100-000-000-000-000-000-000-000-000-000-0

Map #:	93 M 056	Reach Length (km):	3.3	MW	Date:	29-Jul-96	Time:	7:45	Agency:	TEC	Access:	V2	Fish Card:	N	Field ☒ Historical ☐
U.T.M.:	9 .6385 .61630	Length surveyed (m):	150.0	GE	Survey Crew:	HS \TD \ \ \ \ \ \					Photos:	T-2-3	Air Photos:		

Channel Characteristics

Av. Chan. Width (m):	2.9	MS
Av. Wet. Width (m):	2.3	MS
Av. Max Riffle Depth (cm):	4	MS
Av. Max Pool Depth (cm):	13	MS
Gradient (%):	3.0	CL
Pool: 20 Riffle: 30 Run: 50 Other:	0	
% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	90	GE

Specific Data

2.7	2.6	2.9	3.7	2.5
2.5	2.4	2.4	1.9	2.5
3	5	4		
9	16	14		

Cover

Cover Total %: 85 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	25	10	20	20	15

Crown Closure %: 80 Aspect: NE

Bed Material

Fines	Clay, silt, sand (<2mm):	20	20
Gravels	Small (2-16mm):	30	15
	Large (16-64mm):		15
Larges	Sm. cobble (64-128mm):	50	20
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		15
Bedrock		0	0

D90 (cm): 42 Compaction: Medium

Discharge

Wetted Width (m):	1.3	MS
Mean Depth (m):	0.1	MS
Mean Velocity (m/s):	0.23	F
Discharge (m3/s):	0.00	F

Banks

Height (m): 0.2

% Unstable: 10

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: H Flood Signs Ht(m): 0.1

Bars (%): 5 pH: Braided: N

Water Temp. (°C): 12.0 02 (ppm):

Turb. (cm): 16 Cond. (µmhos):

Reach Symbol

(Fish)

CT

3 D 3.0 | 2350

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	CT	3	90-120	J				EL

Comments

C1: S3

C2: The side slopes were not measured at this site.

C: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Honda Mark 10 model, was 362 seconds over 150 meters.

C5: N 55 35' 38" W 126 48' 04.9"

C6: No additional bank texture information.

C7: DO, pH and conductivity were not measured at this site. The water was coloured at the time of sampling. The mean air temperature on this day was 19.7°C

C8: Moss and algae was noted on the substrate at this site. Fish were caught on both sides of the road crossing. This site has some excellent rearing habitat.

Photo #: T-2-3, 1996/07/29
Site #: T25, Channel.

DFO/MoELP Stream Survey Form

Site Number: TERRY 26 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 26, Unit 2, Northwest corner of 515-3, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-9000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 | Reach Length (km): 1.7 MW | Date: 29-Jul-96 | Time: 10:20 | Agency: TEC | Access: V2 | Fish Card: N | Field ☒ | Historical ☐

U.T.M. : 9. 6383 . 61612 | Length surveyed (m): 125.0 GE | Survey Crew: HS \TD\ \ \ \ \ \ \ | Photos: T-2-4 | Air Photos:

Channel Characteristics

Av. Chan. Width (m):	2.8	MS
Av. Wet. Width (m):	2.0	MS
Av. Max Riffle Depth (cm):	4	MS
Av. Max Pool Depth (cm):	16	MS
Gradient (%):	3.0	CL
Pool: 10 Riffle: 80 Run: 10 Other: 0		
% Side Channel:	0-10	GE
% Debris Area:	0-5	GE
%Stable:	80	GE

Specific Data

3.3	2.8	1.8	3.5	2.7
1.4	1.5	4.7	1.2	1.1
3	3	5		
14	18	17		

Cover

Cover Total % : 60 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	5	40	20	30	5

Crown Closure % : 50 Aspect : W

Bed Material

Fines	Clay, silt, sand (<2mm):	5	5
Gravels	Small (2-16mm):	15	5
	Large (16-64mm):		10
Larges	Sm. cobble (64-128mm):	80	30
	Lge cobble (128-256mm):		40
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 27 Compaction: Medium

Discharge

Wetted Width (m) :	4.6	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.14	F
Discharge (m3/s) :	0.05	F

Banks

Height (m): 0.5

% Unstable: 0

Fines ☐ Gravels ☒ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(CT)

3 D 3.0 | 1180

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0.7

Bars (%): 5 pH: Braided: Y

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 18 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1 S3

C2 LS= 13, RS= 11

C3 No fisheries sensitive zones.

C4 The electroshocking effort, using a Honda gas shocker, was 249 seconds over 125 meters.

C5 N 55 34' 40.5" W 126 48' 02.4"

C6 Fines and gravels comprise the bank texture at this site.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 Moss and algae were observed on the streambed at this site. This creek runs below a decommissioned road. Boulders and overstream vegetation provide most of the fish cover at this site.

Photo #: T-2-4, 1996/07/29
Site #: T26, Upstream view.

DFO/MoELP Stream Survey Form

Site Number: TERRY 27 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 27, Unit 2, N end of 515-2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-8900-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 10.4 MW **Date:** 29-Jul-96 **Time:** 11:05 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 . 6395 . 61605 **Length surveyed (m):** 100.0 GE **Survey Crew:** HS\TD\ \ \ \ \ \ \ **Photos:** T-2-5 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.7	MS
Av. Wet. Width (m):	2.5	MS
Av. Max Riffle Depth (cm):	6	MS
Av. Max Pool Depth (cm):	11	MS
Gradient (%):	2.0	CL
Pool: 40 Riffle: 40 Run: 20 Other:	0	
% Side Channel:	0-10	GE
% Debris Area:	5-15	GE
%Stable:	90	GE

Specific Data

2.8	3.1	3.4	1.8	2.2
2.4	2.7	3.4	1.8	2.1
6	4	8		
10	11	11		

Cover

Cover Total % : 80 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	10	15	20	55	0

Crown Closure % : 70 Aspect : SW

Bed Material

Fines	Clay, silt, sand (<2mm):	5	5
Gravels	Small (2-16mm):	15	10
	Large (16-64mm):		5
Larges	Sm. cobble (64-128mm):	80	20
	Lge cobble (128-256mm):		40
	Bldr cobble (>256mm):		20
Bedrock		0	0

D90 (cm): 28 Compaction:

Discharge

Wetted Width (m) :	1.4	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.17	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.2

% Unstable: 20

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0

Bars (%): 30 pH: Braided: Y

Water Temp. (°C): 16.0 02 (ppm):

Turb. (cm): 11 Cond. (µmhos):

Reach Symbol

(Fish)

(CT)

3 D 2.0 | 1180

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S3

C2 LS= 8, RS = 10

C3 No fisheries sensitive zones.

C4 The electroshocking effort using a Honda gas shocker was 289 seconds over 100 meters.

C5 N 55 34' 13.0" W 126 47' 16.4"

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 Boulers and overstream vegetation provide most of the cover for fish at this site.

Photo #: T-2-5, 1996/07/29
Site #: T27, Upstream view, channel through alders.

DFO/MoELP Stream Survey Form **Site Number:** TERRY 28 **Reach No.:** 2

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 28, Unit 2, Northeast of 515-2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-7600-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 3.0 MW **Date:** 29-Jul-96 **Time:** 12:40 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6403 .61607 **Length surveyed (m):** 100.0 GE **Survey Crew:** HS \TD\ \ \ \ \ \ \ **Photos:** T-2-6,7 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.9	MS
Av. Wet. Width (m):	1.3	MS
Av. Max Riffle Depth (cm):	3	MS
Av. Max Pool Depth (cm):	35	MS
Gradient (%):	1.5	GE
Pool: 60 Riffle: 20 Run: 20 Other:	0	
% Side Channel:	0	GE
% Debris Area:	0-5	GE
%Stable:	30	GE

Specific Data

2.1	1.3	2.4	1.9	1.8
2.1	0.8	1.0	0.9	1.8
4	2	2		
31	35	38		

Cover

Cover Total % : 80 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	10	0	40	40	0

Crown Closure % : 85 Aspect : S

Bed Material

Fines	Clay, silt, sand (<2mm):	30	30
Gravels	Small (2-16mm):	30	15
	Large (16-64mm):		15
Larges	Sm. cobble (64-128mm):	40	20
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 26 Compaction: Low

Discharge

Wetted Width (m) :	0.4	MS
Mean Depth (m) :	0.3	MS
Mean Velocity (m/s) :	0.42	F
Discharge (m3/s) :	0.04	

Banks

Height (m): 0.5

% Unstable: 60

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.5

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 38 Cond. (µmhos):

Reach Symbol

(Fish)

(DV)

2 D 1.5 | 3340

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1: S3

C2: The side slopes were not measured at this site.

C3: No fisheries sensitive zones.

C4: The electroshocking effort, using a Honda Gas Shocker, was 372 seconds over 100 meters.

C5: N 55 34' 16" W 126 46' 28"

C6: No additional bank texture information.

C7: DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: A lot of instream vegetation was noted at this site, which does not contain suitable fish habitat. The stream appears to be more of a slough moving into a creek.

Photo #: T-2-6, 1996/07/29
Site #: T28, Upstream view.

Photo #: T-2-7, 1996/07/29
Site #: T28, Downstream view with LOD.

DFO/MoELP Stream Survey Form

Site Number: TERRY 36 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 36, Unit 2, East of 632-3,see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-8900-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 067 **Reach Length (km):** 10.4 MW **Date:** 30-Jul-96 **Time:** 9:15 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6415 .61658 **Length surveyed (m):** 100.0 GE **Survey Crew:** HS \TD\ \ \ \ \ \ \ **Photos:** T-2-18 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.8	MS
Av. Wet. Width (m):	1.1	MS
Av. Max Riffle Depth (cm):	4	MS
Av. Max Pool Depth (cm):	11	MS
Gradient (%):	2.0	CL
Pool: 40 Riffle: 30 Run: 30 Other:	0	
% Side Channel:	0	GE
% Debris Area:	0-5	GE
%Stable:	80	GE

Specific Data

1.3	1.2	2.9	2.3	1.2
1.3	1.1	0.8	1.3	1.0
3	5	4		
9	15	10		

Cover

Cover Total % : 95 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	5	20	15	40	20

Crown Closure % : 95 Aspect : NW

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	30	15
	Large (16-64mm):		15
Larges	Sm. cobble (64-128mm):	60	20
	Lge cobble (128-256mm):		10
	Bldr cobble (>256mm):		30
Bedrock		0	0

D90 (cm): 27 Compaction: Medium

Discharge

Wetted Width (m) :	1.0	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.29	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.2

% Unstable: 65

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.25

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 12.5 02 (ppm):

Turb. (cm): 15 Cond. (µmhos):

Reach Symbol

(Fish)

(DV)

2 D 2.0 | 1360

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1 S3

C2 LS=5%, RS=5%

C3 Potential fisheries sensitive zone.

C4 The electroshocking effort, using a Honda Mark 10 model was 289 seconds over 100 meters.

C5 Lat N 55 37'01", Long W 126 45'15"

C6 No additional bank texture information.

C7 DO, pH and conductivity were not measured at this site. The water was coloured. The mean air temperature on this day was 11.3°C

C8 This site could provide rearing habitat. Algae was noted on the rocks.

Photo #: Y-8-15, 20/07/97
Site #: Y61, Looking upstream at the channel.

Photo #: Y-8-16, 22/07/97
Site #: Y61, Looking downstream at the channel.

DFO/MoELP Stream Survey Form **Site Number: Z1** **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z1, Unit 2 **Stream (Gaz.):** Unnamed **Watershed Code:** 016-7300-000-000-000-000-000-000-000-000-000-

Map #: 93 M 057 **Reach Length (km):** 1.9 MW **Date:** 08-Jul-97 **Time:** 8:10 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M.: 9 .64161 . 61593 **Length surveyed (m):** 135.0 GE **Survey Crew:** AFL\ KG\ \ \ \ \ \ \ **Photos:** Z-1-1,2 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.4	MS
Av. Wet. Width (m):	0.8	MS
Av. Max Riffle Depth (cm):	5	MS
Av. Max Pool Depth (cm):	16	MS
Gradient (%):	4.0	CL

Pool: 15 Riffle: 30 Run: 50 Other: 5

% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	60	GE

Specific Data

1.4	1.3	1.4	1.7	1.5	1.1
1.0	0.7	0.8	1.0	0.8	0.3
7	5	5	6	4	
12	22	15	14		

Cover

Cover Total %: 30 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
5	20	5	5	55	10

Crown Closure %: 70 Aspect: W

Bed Material

Fines	Clay, silt, sand (<2mm):	90	90
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	10	0
	Lge cobble (128-256mm):		5
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 23 Compaction: High

Discharge

Wetted Width (m):	0.4	MS
Mean Depth (m):	0.2	MS
Mean Velocity (m/s):	0.34	F
Discharge (m3/s):	0.02	F

Reach Symbol

(Fish)

NF

1 D 4.0 | 9010

(Width, Valley: Channel, Slope) (Bed Material)

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.3

Bars (%): 0 pH: 6.8 Braided: N

Water Temp. (°C): 10.0 02 (ppm):

Turb. (cm): Cond. (µmhos): 20

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1 S6

C2 LS = 1%, RS = 0%

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a Smithroot Type VII model set at 60hz/6ms, was 200 seconds over 100 meters.

C5 No additional bank texture information.

C6 DO was not measured at this site, the water was clear to bottom. The mean air temperature on this day was 13.6.C.

C7 This site does not have suitable spawning or overwintering habitat. The rearing habitat is marginal at best. Evidence of sedimentation was noted.

Photo #: Z-1-1, 08-Jul-97
Site #: Z1, Looking upstream at the channel, heavily overgrown with vegetation

Photo #: Z-1-2, 08-Jul-97
Site #: Z1, Looking downstream at the channel

DFO/MoELP Stream Survey Form

Site Number: Z2

Reach No.: 1

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z2, Unit 2 **Stream (Gaz.):** Unnamed **Watershed Code:** 016-7200-000-000-000-000-000-000-000-000-000-

Map #: 93 M 057 **Reach Length (km):** 2.0 MW **Date:** 08-Jul-97 **Time:** 9:00 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .642143.6158687 **Length surveyed (m):** 70.0 GE **Survey Crew:** AFL\ KG\ \ \ \ \ \ \ **Photos:** Z-1-3,4 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.8	MS
Av. Wet. Width (m):	0.4	MS
Av. Max Riffle Depth (cm):	4	MS
Av. Max Pool Depth (cm):	11	MS
Gradient (%):	14.0	CL

Pool: 30 Riffle: 50 Run: 20 Other: 0

% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	80	GE

Specific Data

0.8	0.6	0.7	0.9	1.0
0.4	0.4	0.3	0.3	0.4
4	3	5		
12	12	9		

Cover

Cover Total % : 100 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
5	10	0	30	50	5

Crown Closure % : 30 Aspect : W

Bed Material

Fines	Clay, silt, sand (<2mm):	80	80
Gravels	Small (2-16mm):	20	10
	Large (16-64mm):		10
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 3 Compaction: Medium

Discharge

Wetted Width (m) :	0.4	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.28	F
Discharge (m3/s) :	0.01	F

Banks

Height (m): 0.5

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

NF

1 D 14.0 | 8200

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: H Flood Signs Ht(m): 0

Bars (%): 0 pH: 6.7 Braided: N

Water Temp. (°C): 10.5 02 (ppm):

Turb. (cm): Cond. (µmhos): 30

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C4 This site was not electrofished as the stream is too small and shallow in this reach for effective electrofishing.

C5 No additional bank texture information.

C6 DO was not measured at this site, the water was clear to the bottom. The mean air temperature on this day was was 13.6.C.

C7 The channel is discontinuous in the sampling area and has no rearing or overwintering habitat. The lack of suitable habitat combin and the somewhat steep gradient make the use of this reach by fish unlikely.

C1 S6

C2 LS = 4%, RS = 3%

C3 No fisheries sensitive zones noted.

Photo #: Z-1-3, 08-Jul-97
Site #: Z2, Looking upstream at the channel, heavily overgrown with vegetation

Photo #: Z-1-4, 08-Jul-97
Site #: Z2, Looking downstream at the channel

DFO/MoELP Stream Survey Form **Site Number: Z5** **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z5, Unit 2, 1.0km West of the 456 rd, .9km West of the Nichyeskwa. Stream (Gaz.): Unnamed Watershed Code: 081-5900-000-000-000-000-000-000-000-000-000-

Map #: 93 M 047 Reach Length (km): 1.2 MA Date: 08-Jul-97 Time: 15:20 Agency: TEC Access: V2 Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .64492 .6146673 Length surveyed (m): 110.0 GE Survey Crew: AFL\ KG\ \ \ \ \ \ \ Photos: Z-1-17,18 Air Photos:

Channel Characteristics

Av. Chan. Width (m):	1.7	MS
Av. Wet. Width (m):	1.0	MS
Av. Max Riffle Depth (cm):	6	MS
Av. Max Pool Depth (cm):	9	MS
Gradient (%):	0.5	GE

Pool: 65 Riffle: 10 Run: 25 Other: 0

% Side Channel: GE

% Debris Area: 30 GE

%Stable: 85 GE

Specific Data

1.8	1.5	3.0	0.0	2.3	1.4
1.0	1.1	2.1	0.0	1.0	0.6
6					
5	13	6	9	14	

Cover

Cover Total % : 100 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	15	0	20	45	10

Crown Closure % : 40 Aspect : S

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m) :	1.6	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.02	F
Discharge (m3/s) :	0.00	F

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.2

Bars (%): 0 pH: 6.3 Braided: N

Water Temp. (°C): 12.5 02 (ppm):

Turb. (cm): Cond. (µmhos): 30

Reach Symbol

(Fish)

NF

2 D 0.5 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
C4	NF			NA				VO

Comments

C1: S6

C2: LS =0%, RS = 0%

C3: No fisheries sensitive zones noted.

C4: This small stream was not electrofished as it was too small and shallow to effectively shock.

C5: No additional bank texture information.

C6: DO was not measured at this site, the water was clear to the bottom. The mean air temperature on this day was 13.6 .C.

C7: This site has no spawning habitat. The stream is too small in this reach to accomodate adult migration. It could be accessed by fry, but there is a low probability of fish use. Downstream of the road crossing, the creek takes on a considerable amount of sediment from a nearby ditch drainage. Beyond this point the creek has been rerouted into a ditch.

Photo #: Z-1-17, 08-Jul-97
Site #: Z5, Looking upstream at the channel

Photo #: Z-1-18, 08-Jul-97
Site #: Z5, Looking downstream at the channel

DFO/MoELP Stream Survey Form

Site Number: Z53 **Reach No.: 1**

Trib to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z53, Unit 2 **Stream (Gaz.):** Unnamed **Watershed Code:** 081-8500-000-000-000-000-000-000-000-000-000-

Map #: 93 M 047 **Reach Length (km):** 0.7 MW **Date:** 19-Jul-97 **Time:** 8:05 **Agency:** TEC **Access:** Hi **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .64514 .615088 **Length surveyed (m):** 100.0 GE **Survey Crew:** JP \KG\ \ \ \ \ \ \ **Photos:** Z-7-9,10 **Air Photos:**

Channel Characteristics

	Av. Chan. Width (m):	1.6	MS
	Av. Wet. Width (m):	1.4	MS
C1	Av. Max Riffle Depth (cm):	0	GE
C1	Av. Max Pool Depth (cm):	0	GE
	Gradient (%):	0.0	CL
	Pool: 0 Riffle: 0 Run: 100 Other: 0		
	% Side Channel:	0	GE
	% Debris Area:	5-15	GE
	%Stable:	30	GE

Specific Data

1.7	1.5	1.7	1.6
1.5	1.5	1.2	1.3

Cover

Cover Total % : 10 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	35	10	55

Crown Closure % : 0 Aspect : W

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m) :	1.0	MS
Mean Depth (m) :	0.3	MS
Mean Velocity (m/s) :	0.09	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

NF

2 D 0.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m):

Bars (%): 0 pH: 7.5 Braided: N

Water Temp. (°C): 8.0 02 (ppm):

Turb. (cm): Cond. (µmhos): 130

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S6.

C2 LS=0%, RS=0%

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a Smithroot 12B POW model set at I, 5, 200V, was 60 seconds over 50 meters.

C5 No additional bank texture information.

C6 DO was not measured at this site, the water was clear to bottom. The mean air temperature on this day was 15.2 C.

C7 This is a small channel in a large swamp with no real fish habitat. There were bubbles observed in the stream.

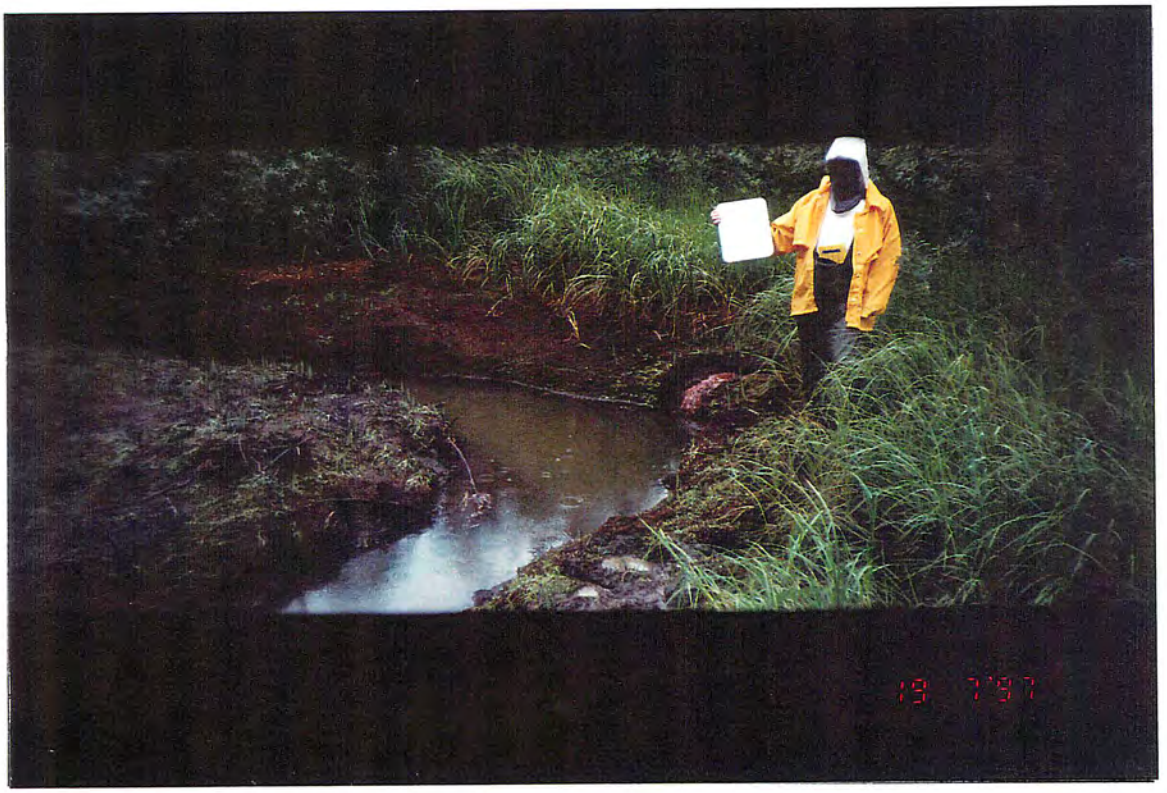

Photo #: Z-7-9, 19-Jul-97
Site #: Z53, Looking upstream at the channel

Photo #: Z-7-10, 19-Jul-97
Site #: Z53, Looking downstream at the channel

DFO/MoELP Stream Survey Form

Site Number: Z54 **Reach No.:** 2

Trib to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z54, Unit 2 **Stream (Gaz.):** Unnamed **Watershed Code:** 081-8200-000-000-000-000-000-000-000-000-000-

Map #: 93 M 047 **Reach Length (km):** 0.7 MW **Date:** 19-Jul-97 **Time:** 9:05 **Agency:** TEC **Access:** H **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6446 .615024 **Length surveyed (m):** 100.0 GE **Survey Crew:** KG \JP\ \ \ \ \ \ \ **Photos:** Z-7-11,12,13 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.8	MS
Av. Wet. Width (m):	2.2	MS
Av. Max Riffle Depth (cm):	10	MS
Av. Max Pool Depth (cm):	29	MS
Gradient (%):	2.0	CL
Pool: 15 Riffle: 10 Run: 70 Other:	5	
% Side Channel:	10-40	GE
% Debris Area:	>15	GE
%Stable:	55	GE

Specific Data

2.8	3.1	2.0	2.6	3.5	2.9
2.1	2.2	1.8	2.3	2.7	2.2
10	14	5			
38	35	15			

Cover

Cover Total % : 40 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
5	25	10	5	35	20

Crown Closure % : 60 Aspect : S

Bed Material

Fines	Clay, silt, sand (<2mm):	30	30
Gravels	Small (2-16mm):	20	5
	Large (16-64mm):		15
Larges	Sm. cobble (64-128mm):	50	20
	Lge cobble (128-256mm):		20
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 25 Compaction: Medium

Discharge

Wetted Width (m) :	2.0	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.38	F
Discharge (m3/s) :	0.06	F

Banks

Height (m): 0.3

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: M Flood Signs Ht(m):

Bars (%): 5 pH: Braided: Y

Water Temp. (°C): 02 (ppm):

Turb. (cm): Cond. (µmhos):

Reach Symbol

(Fish)

NF

3 C 2.0 | 3250

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S6.

C2: LS=30%, RS=33%

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a smithroot 12 B POW set at I, 5, 200V, was 152 seconds over 100 meters.

C5: No additional bank texture information.

C6: DO was not measured at this site, the water was clear to bottom. The mean air temperature on this day was 15.2 C.

C7: The water sample bottles were spilled and crushed when a crew memebr fell onto boulders and cobble in the Babine River at site Z56. A photo was taken of the cascades on this creek.

Photo #: Z-7-11, 19-Jul-97
Site #: Z54, Looking downstream at the channel

Photo #: Z-7-12, 19-Jul-97
Site #: Z54, Looking upstream at the channel

DFO/MoELP Stream Survey Form

Site Number: Z55

Reach No.: 3

Trib to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z55, Unit 2 | **Stream (Gaz.):** Unnamed | **Watershed Code:** 081-7700-000-000-000-000-000-000-000-000-000-

Map #: 93 M 047 | **Reach Length (km):** 1.2 MW | **Date:** 19-Jul-97 | **Time:** 10:18 | **Agency:** TEC | **Access:** H | **Fish Card:** N | Field ☒ Historical ☐

U.T.M.: 9 .641573.6151426 | **Length surveyed (m):** 100.0 GE | **Survey Crew:** JP\KG\ \ \ \ \ \ \ | **Photos:** Z-7-14,15 | **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.8	MS
Av. Wet. Width (m):	0.6	MS
Av. Max Riffle Depth (cm):	0	MS
Av. Max Pool Depth (cm):	31	MS
Gradient (%):	0.5	CL
Pool: 20 Riffle: 0 Run: 80 Other: 0		
% Side Channel:	0-10	GE
% Debris Area:	>15	GE
%Stable:	50	GE

Specific Data

0.5	0.7	0.8	1.3	0.6	0.7
0.4	0.4	0.7	1.2	0.5	0.6
17	37	38			

Cover

Cover Total %: 25 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	25	55	20

Crown Closure %: 10 | Aspect: SE

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 | Compaction: Low

Discharge

C1	Wetted Width (m):	0.0	GE
C1	Mean Depth (m):	0.0	GE
C1	Mean Velocity (m/s):	0.00	F
C1	Discharge (m3/s):	0.00	F

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(RB)

1 D 0.5 | F

(Width, Valley: Channel, Slope) | (Bed Material)

Confinement: UC

Valley : Channel Ratio: 10+

Stage: M | Flood Signs Ht(m):

Bars (%): 0 | pH: 6.6 | Braided: N

Water Temp. (°C): | 02 (ppm):

Turb. (cm): | Cond. (µmhos): 50

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S4. Almost no flow was present at the time of sampling.

C2 LS=0%, RS=0%

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a Smithroot 12 B POW model, was 101 seconds over 100 meters.

C5 No additional bank texture information.

C6 DO was not measured at this site, the water was clear to bottom. The air temperature at this site was 14 C.

C7 This is a very small stream with little fish habitat. It is however connected to a large lake which looks like it could support fish. Loons were noted on the lake.

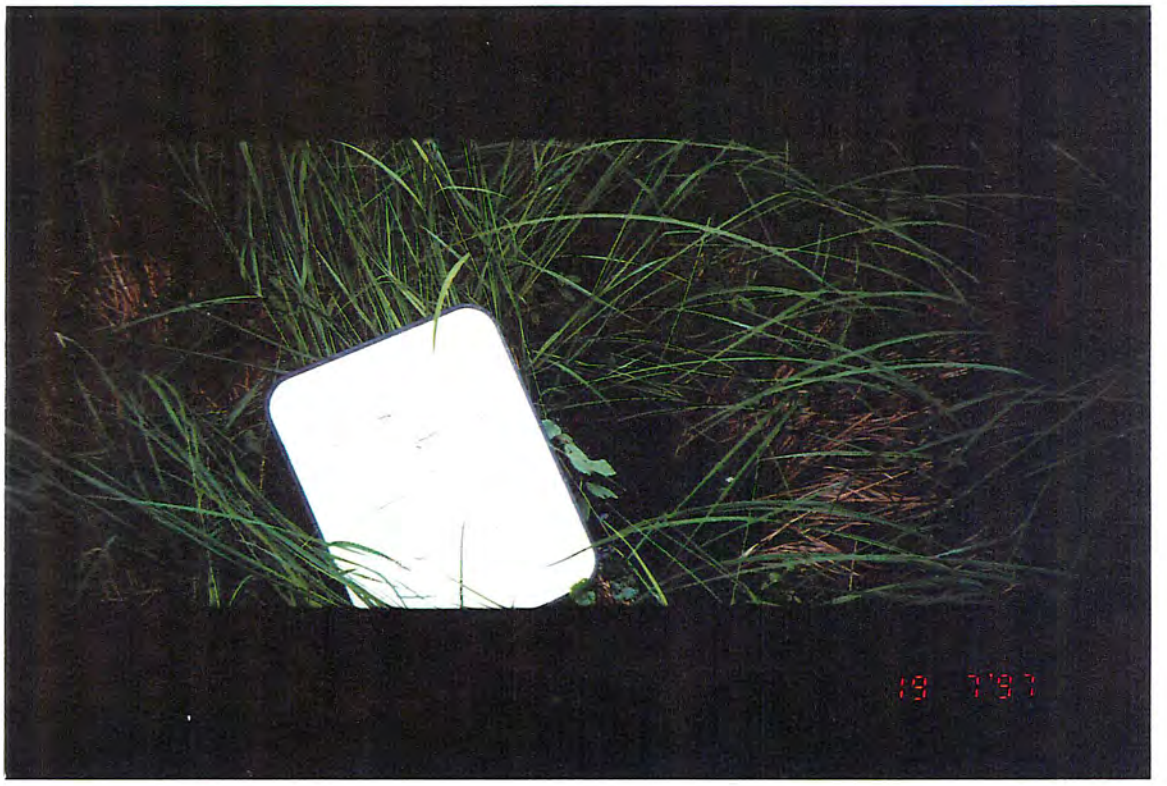

Photo #: Z-7-14, 19-Jul-97
Site #: Z55, Looking upstream at the channel

Photo #: Z-7-15, 19-Jul-97
Site #: Z55, Looking downstream at the channel

DFO/MoELP Stream Survey Form

Site Number: Z56 **Reach No.: 1**

Trib to Babine R.

TRITON Environmental Consultants Ltd.

Location: Z56, Unit 2 **Stream (Gaz.):** Unnamed **Watershed Code:** 081-8900-000-000-000-000-000-000-000-000-000-

Map #: 93 M 047 **Reach Length (km):** 0.4 MW **Date:** 19-Jul-97 **Time:** 11:04 **Agency:** TEC **Access:** H **Fish Card:** N **Field** ☒ **Historical** ☐

U.T.M. : 9 .6432 .615194 **Length surveyed (m):** 110.0 GE **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** Z-7-16,17,18 **Air Photos:**

Channel Characteristics

C1	Av. Chan. Width (m):	4.8	MS
C1	Av. Wet. Width (m):	2.5	MS
C1	Av. Max Riffle Depth (cm):	0	MS
	Av. Max Pool Depth (cm):	34	MS
	Gradient (%):	0.0	CL
	Pool: 30 Riffle: 0 Run: 70 Other: 0		
	% Side Channel:	10-40	GE
	% Debris Area:	>15	GE
	%Stable:	50	GE

Specific Data

4.0	5.0	4.2	4.8	4.6	6.0
2.8	3.0	2.0	2.2	2.0	2.8
38	22	34	42		

Cover

Cover Total % : 30 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	45	0	30	15	0

Crown Closure % : 35 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m) :	0.0	MS
Mean Depth (m) :	0.0	MS
Mean Velocity (m/s) :	0.00	F
Discharge (m3/s) :	0.00	F

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: L Flood Signs Ht(m): 1.7

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 6.0 02 (ppm):

Turb. (cm): Cond. (µmhos):

Reach Symbol

(Fish)

RB

5 C 0.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	RB	1	30	F	R			EL

Comments

C1: S3. One additional measurement was taken for both channel and wetted widths, 5.1 and 2.2. Riffle depth was not measured. Standing water comprised most of hte flow at this site, so no velocity measuremments could be taken.

C2: LS=10%, RS=6%

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithroot 12 B POW model, was 253 seconds over 60 meters.

C5: No additional bank texture information.

C6: DO was not measured at this site, the water was clear to bottom. The air temperature at this site was 14 C.

C7: The channel contains consistent flow for roughly 50 m. It then becomes a series of isolated pools and then dries up.

Photo #: Z-7-16, 19-Jul-97
Site #: Z56, Looking upstream at the channel

Photo #: Z-7-17, 19-Jul-97
Site #: Z56, Looking downstream at the channel

5.2 Unnamed Tributary to the Babine River (480-2494-000) (93 M 056, 93 M 066)

5.2.1 Sensitive Habitats and Barriers

This large unnamed tributary to the Babine is 13.8 km in length and is fed by 20 smaller streams. A number of wetlands occur in the upper reaches of this stream, however no other sensitive habitats were identified by the field crew working in this area. Beaver dams were the only observed barriers in this system although, the confinement and varied gradient of this stream indicate potential cascade barriers in several areas. Reach 1 is moderately confined and has moderate gradient, both of which increase in reach 2. Reach 3 has low gradient and is largely unconfined. A small lake was noted at the top end of this system. This stream was sampled in reaches 2 and 3.

5.2.2 Fish Summary Tables and Stream Classification

No historical information was found for this stream and no fish were visually observed in either of the sample sites. The mainstem was classified as an S2 in reach 2 based on an average channel width of 5.0 meters and the presence of fish habitat in the sampling area. The tributary to the main creek was classified as an S3 based on an average channel width of 2.64 meters and the presence of rearing habitat (see Table 4). A number of unsampled tributaries to the larger creek have been classified as non fish bearing due to steep gradient, associated with mainstem confinement. It should be noted that reach 2 was aerially assessed due to poor access. A detailed ground survey is recommended for reaches 1 and 2 of this stream.

DFO/MoELP Stream Survey Form

Site Number: JULIE 37 **Reach No.:** 2

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 37, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 182-7000-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 3.5 MA **Date:** 29-Jul-96 **Time:** 16:30 **Agency:** TEC **Access:** HL **Fish Card:** N **Field** ☒ **Historical** ☐

U.T.M. : 9 .6310 . 61600 **Length surveyed (m):** 2000.0 MA **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** J-2-22 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	5.0	AE
Av. Wet. Width (m):	3.5	AE
Av. Max Riffle Depth (cm):	15	AE
Av. Max Pool Depth (cm):	60	AE
Gradient (%):	6.0	MA
Pool: 20 Riffle: 40 Run: 20 Other:	20	
% Side Channel:		AE
% Debris Area: 15		AE
%Stable:	80	AE

Specific Data

Cover

Cover Total % : 60 AE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	30	40	0	15	5

Crown Closure % : 20 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	30	10
	Large (16-64mm):		20
Larges	Sm. cobble (64-128mm):	60	20
	Lge cobble (128-256mm):		20
	Bldr cobble (>256mm):		20
Bedrock		0	0

D90 (cm): 40 Compaction: Medium

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Banks

Height (m): 1.0

% Unstable: 20

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(DV)

5 B 6.0 | 1360

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: FC

Valley : Channel Ratio 2-5

Stage: M Flood Signs Ht(m): 1

Bars (%): 15 pH: 7.0 Braided: N

Water Temp. (°C): 8.0 02 (ppm):

Turb. (cm): 60 Cond. (µmhos): 50

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S2

C2: LS=40, RS=40

C3: No fisheries sensitive zones noted.

C4: No electroshocking was carried out at this site, which was evaluated from the air. See the results of sampling upstream at J38.

C5: N 55 34 03, W 126 56 33

C6: No additional bank texture information. Some sections of eroding banks were observed, especially in the canyon.

C7: No discharge measurements, see results of J38. Helicopter access to this site was poor. Sampling had to take place upstream. The mean air temperature on this day was 19.7°C

C8: LOD and boulders provide most of the cover for fish at this site.

Photo #: J-2-22, 1996/07/29
Site #: d/s J37, Aerial photo, downstream of site J37.

DFO/MoELP Stream Survey Form

Site Number: JULIE 38 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 38, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 056 **Reach Length (km):** 1.8 MW **Date:** 29-Jul-96 **Time:** 17:00 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6311 .61566 **Length surveyed (m):** 400.0 GE **Survey Crew:** JP \KG\ \ \ \ \ \ \ **Photos:** J-2-23 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.6	MS
Av. Wet. Width (m):	2.7	MS
Av. Max Riffle Depth (cm):	0	MS
Av. Max Pool Depth (cm):	75	MS
Gradient (%):	1.0	CL
Pool: 90 Riffle: 0 Run: 5 Other: 5		
% Side Channel:		GE
% Debris Area:	10	GE
%Stable:	40	GE

Specific Data

3.5	2.2	3.3	1.8	2.4
3.5	2.2	3.3	2.0	2.4
0	0	0	0	0
76	78	79	67	

Cover

Cover Total % : 80 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
70	20	0	0	5	5

Crown Closure % : 15 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	60	60
Gravels	Small (2-16mm):	20	10
	Large (16-64mm):		10
Larges	Sm. cobble (64-128mm):	20	15
	Lge cobble (128-256mm):		5
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 13 Compaction: Medium

Discharge

Wetted Width (m) :	0.9	MS
Mean Depth (m) :	0.2	MS
Mean Velocity (m/s) :	0.35	F
Discharge (m3/s) :	0.05	F

Banks

Height (m): 0.6

% Unstable: 5

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: H Flood Signs Ht(m): 0.4

Bars (%): 5 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 79 Cond. (µmhos):

Reach Symbol

(Fish)

(RB)

3 D 1.0 | 6220

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S3

C2: LS=5, RS=5

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithroot 12 B POW model was 724 seconds over 200 meters.

C5: N 55 32' 39" W 126 5' 23"

C6: No additional bank texture information.

C7: DO, pH, conductivity were not measured at this site. The water was clear to the bottom. The mean air temperature on this day was 19.7°C

C8: This site appears to have suitable fish habitat.

Photo #: J-2-23, 1996/07/29
Site #: J38, Looking downstream, channel through grass and alder.

5.3 Unnamed Tributary to the Babine River (480-2809-000) (93 M 056)

5.3.1 Sensitive Habitats and Barriers

This tributary is 9.3 km in length and is fed by 14 smaller streams. The TRIM sheet indicates steep gradient and some canyon like confinement in reach 1, however no permanent barriers were identified by the sampling crew working on this system. Reaches 1, 2, 3 and 4 have steadily decreasing confinement and gradient. Reach 5 has low gradient and is unconfined and reach 6 has steep, ultimately impassable gradient. Two small fisheries sensitive zones, comprised of wetlands and small lakes were identified in the upper reaches of this stream. The steep side slopes of this system warrant special attention in development plans for this small watershed. Some beaver activity was also noted in the upper reaches of this stream. This stream was sampled at 4 locations, including reaches 4 and 5 of the mainstem.

5.3.2 Fish Summary Tables and Stream Classification

No historical fisheries records were found for this stream and no fish were caught by electrofishing in the 4 sample sites on this system. However, the mainstem was sampled in reaches 4 and 5 and was classified as fish bearing based on average channel widths of 1.56 meters, 2.22 meters and the presence of fish habitat in the sampling area. Pools and riffles were noted at site J33 in reach 4. Site J36, located on 1 of the larger tributaries to the main creek was classified as an S3 based on the presence of fish habitat, consisting of a series of beaver ponds, linked by sections of riffle over cobble, and an average channel width of 2.96 meters (see Table 4).

DFO/MoELP Stream Survey Form

Site Number: JULIE 33 Reach No.: 4

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 33 , Unit 2, West branch of creek draining into Babine R.see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-1500-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 | Reach Length (km): 2.0 MW | Date: 29-Jul-96 | Time: 11:06 | Agency: TEC | Access: HL | Fish Card: N | Field ☒ Historical ☐

U.T.M. : 9 .6345 .61571 | Length surveyed (m): 400.0 HC | Survey Crew: JP\KG\ \ \ \ \ \ | Photos: J-2-18 | Air Photos:

Channel Characteristics

Av. Chan. Width (m):	1.6	MS
Av. Wet. Width (m):	1.2	MS
Av. Max Riffle Depth (cm):	10	MS
Av. Max Pool Depth (cm):	16	MS
Gradient (%):	4.0	CL

Pool: 10 Riffle: 65 Run: 20 Other: 5

% Side Channel:	0	GE
% Debris Area:	10	GE
%Stable:	70	GE

Specific Data

1.9	1.6	1.2	1.6	1.5
1.8	1.5	0.9	0.9	1.0
10	12	9		
18	14	16		

Cover

Cover Total % : 60 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	15	10	15	50	10

Crown Closure % : 30 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	50	20
	Large (16-64mm):		30
Larges	Sm. cobble (64-128mm):	40	30
	Lge cobble (128-256mm):		5
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 27 Compaction: Low

Discharge

Wetted Width (m) :	0.8	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.53	F
Discharge (m3/s) :	0.03	F

Banks

Height (m): 0.2

% Unstable: 5

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: M Flood Signs Ht(m): 0.2

Bars (%): 15 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 18 Cond. (µmhos):

Reach Symbol

(Fish)

(DV)

2 C 4.0 | 1540

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S3

C2: LS= 20, RS=20

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort using a Smithroot 12 B POW model, was 1400 seconds over 400 meters.

C5: N 55 32' 05" W 126 52' 06"

C6: No additional bank texture information.

C7: DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: An aerial reconnaissance of the entire stream was carried out. No obstructions were found and the stream has some great fish habitat. Some fairly steep side slopes were observed. Mosses were observed on the substrate.

Photo #: J-2-18, 1996/07/29
Site #: J33, Channel through grass and alder.

DFO/MoELP Stream Survey Form **Site Number:** JULIE 34 **Reach No.:** 1

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 34, Unit 2, small trib leading to J-33 stream, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 173-4000-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 1.3 MA **Date:** 29-Jul-96 **Time:** 10:15 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6343 .61571 **Length surveyed (m):** 150.0 HC **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** J-2-16,17 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.7	MS
Av. Wet. Width (m):	0.5	MS
Av. Max Riffle Depth (cm):	3	MS
Av. Max Pool Depth (cm):	14	MS
Gradient (%):	17.0	CL

Pool: 30 Riffle: 50 Run: 20 Other: 0

% Side Channel:	0	GE
% Debris Area:	20	GE
%Stable:	60	GE

Specific Data

0.6	0.8	0.8	0.6	0.7
0.4	0.8	0.5	0.4	0.5
3	4	3		
17	14	12		

Cover

Cover Total % : 40 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	25	0	0	25	50

Crown Closure % : 90 Aspect : E

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	50	10
	Large (16-64mm):		40
Larges	Sm. cobble (64-128mm):	40	30
	Lge cobble (128-256mm):		10
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 13 Compaction: Medium

Discharge

Wetted Width (m) :	0.5	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.12	F
Discharge (m3/s) :	0.00	F

Banks

Height (m): 0.3

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.2

Bars (%): 5 pH: Braided: N

Water Temp. (°C): 8.5 02 (ppm):

Turb. (cm): 17 Cond. (µmhos):

Reach Symbol

(Fish)

NF

1 D 17.0 | 1540

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S6

C2: LS=20%, RS=20%

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithroot 12 B POW model was 200s over 150 meters.

C5: N 55 32 26, W 126 53 33

C6: No additional bank texture information.

C7: DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: This tributary has been classified as non fish bearing because it contains no spawning, rearing or overwintering habitat. The average gradient of this reach, taken from the map, is 21%.

Photo #: J-2-16, 1996/07/29
Site #: Beaver pond above site J34.

Photo #: J-2-17, 1996/07/29
Site #: J34, Looking downstream, tributary to site J33.

DFO/MoELP Stream Survey Form **Site Number:** JULIE 35 **Reach No.:** 5

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 35, Unit 2, small trib leading to J33 stream, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-1500-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 Reach Length (km): 1.3 MA Date: 29-Jul-96 Time: 11:30 Agency: TEC Access: HL Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .6343 .61567 Length surveyed (m): 150.0 HC Survey Crew: JP\KG\ \ \ \ \ \ \ Photos: J-2-19 Air Photos:

Channel Characteristics

Av. Chan. Width (m):	2.2	MS
Av. Wet. Width (m):	2.2	MS
Av. Max Riffle Depth (cm):	0	MS
Av. Max Pool Depth (cm):	47	MS
Gradient (%):	1.0	CL
Pool: 100 Riffle: 0 Run: 0 Other: 0		
% Side Channel:	0	GE
% Debris Area:	5	GE
%Stable:	80	GE

Specific Data

2.0	2.2	2.1	2.5	2.3
2.0	2.2	2.1	2.5	2.3
0	0	0	0	0
41	39	51	56	

Cover

Cover Total % : 60 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
65	5	0	10	20	0

Crown Closure % : 10 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	40	10
	Large (16-64mm):		30
Larges	Sm. cobble (64-128mm):	50	30
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 26 Compaction: Low

Discharge

Wetted Width (m) :	2.2	MS
Mean Depth (m) :	0.4	MS
Mean Velocity (m/s) :	0.01	F
Discharge (m3/s) :	0.01	F

Banks

Height (m): 0.4

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(RB)

2 D 1.0 | 1450

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: H Flood Signs Ht(m): 0

Bars (%): 0 pH: 7.3 Braided: N

Water Temp. (°C): 8.0 02 (ppm):

Turb. (cm): 56 Cond. (µmhos): 100

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S3

C2: LS=10, RS=10

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithroot 12 B POW model, was 600 seconds over 200 meters.

C5: N 55 32 20, W 126 53 35

C6: No additional bank texture information.

C7: Seems like good habitat. A reach break was established above the main creek, near the beaver ponds. The mean air temperature on this day was 19.7°C

Photo #: J-2-19, 1996/07/29
Site #: J35, Looking cross-stream, channel through grass and willow.

DFO/MoELP Stream Survey Form

Site Number: JULIE 36 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 36, Unit 2, East branch of creek, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 017-2300-000-000-000-000-000-000-000-000-000-

Map #: 93 M 056 **Reach Length (km):** 2.5 MW **Date:** 29-Jul-96 **Time:** 13:17 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6351 .61572 **Length surveyed (m):** 360.0 HC **Survey Crew:** JP\KG\ \ \ \ \ \ \ **Photos:** J-2-20,21 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	3.0	MS
Av. Wet. Width (m):	2.5	MS
Av. Max Riffle Depth (cm):	9	MS
Av. Max Pool Depth (cm):	48	MS
Gradient (%):	1.0	CL
Pool: 50 Riffle: 45 Run: 0 Other:	5	
% Side Channel:		GE
% Debris Area:	5	GE
%Stable:	80	GE

Specific Data

2.9	2.2	3.3	3.4	3.0
2.2	2.0	2.2	3.3	2.8
10	7	9		
40	57			

Cover

Cover Total % : 40 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
25	10	40	0	25	0

Crown Closure % : 10 Aspect : N

Bed Material

Fines	Clay, silt, sand (<2mm):	50	50
Gravels	Small (2-16mm):	10	5
	Large (16-64mm):		5
Larges	Sm. cobble (64-128mm):	40	20
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		5
Bedrock		0	0

D90 (cm): 28 Compaction: Medium

Discharge

Wetted Width (m) :	2.1	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.09	F
Discharge (m3/s) :	0.01	F

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: H Flood Signs Ht(m): 0.2

Bars (%): 5 pH: Braided: N

Water Temp. (°C): 18.0 02 (ppm):

Turb. (cm): 57 Cond. (µmhos):

Reach Symbol

(Fish)

(RB)

3 C 1.0 | 5140

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: S3

C2: LS=40, RS=30

C3: No fisheries sensitive zones.

C4: The electroshocking effort, using a Smithroot 12 B POW model, was 1296 seconds over 300 meters.

C5: Lat N 55 32' 24.9", Long W 126 51' 20.9"

C6: No additional bank texture information.

C7: DO, pH, conductivity were not measured at this site. The water was clear to the bottom. The mean air temperature on this day was 19.7°C

C8: Several beaver dams were noted downstream. The habitat consists of a series of old beaver ponds connected by sections of riffle over cobble. Some suitable fish habitat was noted downstream of the beaver ponds.

Photo #: J-2-20, 1996/07/29
Site #: J36, Looking upstream.

Photo #: J-2-21, 1996/07/29
Site #: J36, Looking downstream toward beaver pond

5.4 Unnamed Tributary to the Babine River (480-2641-000) (93 M 066)

5.4.1 Sensitive Habitats and Barriers

This tributary is 6.4 km in length and is fed by 5 small tributaries. No sensitive habitats or barriers were identified by the field crew working on this stream, however moderately steep gradient and confinement occur at the mouth. Reach 1 has relatively steep gradient and varied, but typically moderate confinement. Reach 2 has moderate gradient and is unconfined. This stream was sampled once, in reach 3.

5.4.2 Fish Summary Tables and Stream Classification

No historical records exist for this stream and no fish were caught by electrofishing at sample site R33. This stream has been classified as an S3 based on an average channel width of 2.0 meters and the presence of deep run rearing cover in the sampling area.

DFO/MoELP Stream Survey Form

Site Number: RYAN 33 Reach No.: 2

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 33, Unit 2 , see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 018-3600-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 066 **Reach Length (km):** 3.7 MA **Date:** 29-Jul-96 **Time:** 13:45 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 . 6344 . 61668 **Length surveyed (m):** 100.0 GE **Survey Crew:** RH \DD\ \ \ \ \ \ \ **Photos:** R-3-5 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.0	GE
Av. Wet. Width (m):	2.0	GE
Av. Max Riffle Depth (cm):	0	GE
Av. Max Pool Depth (cm):	150	GE
Gradient (%):	1.0	GE
Pool: 0 Riffle: 0 Run: 100 Other: 0		
% Side Channel:	>40	GE
% Debris Area:	5-15	GE
%Stable:	100	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 25 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	10	0	20	50	10

Crown Closure % : 10 Aspect : SE

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(RB)

2 E 1.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: N/A

Valley : Channel Ratio N/A

Stage: L Flood Signs Ht(m): 0

Bars (%): 0 pH: 6.7 Braided: N

Water Temp. (°C): 5.0 02 (ppm):

Turb. (cm): 70 Cond. (µmhos): 80

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 S3

C2 LS=0, RS=0

C3 No fisheries sensitive zones noted.

C4 The electroshocking effort, using a 12 B POW model, was 150 seconds over 80 meters. The shocking conditions were dangerous at this site.

C5 N 55 37' 42" W 126 51' 54.9"

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site . The crew could not detect any flow so no discharge measurements were taken. The mean air temperature on this day was 19.7°C

C8 Multiple channels and beaver activity were noted around the swamp. Good access to this site, which could provide rearing habitat. An aerial reconnaisance showed that favourable substrate occurs downstream. Reach 1 has some good habitat, while reach 2 has marginal habitat.

Photo #: R-3-5, 1996/07/29
Site #: R33, Looking downstream, channel through grassy area.

5.5 Unnamed Tributary to Babine River (480-3222-000) (93 M 057)

5.5.1 Sensitive Habitats and Barriers

This unnamed tributary is 7.8 km in length and is fed by 6 smaller tributaries. It has somewhat steep gradient at the mouth but no barriers to fish migration were observed by field crews. Reach 1 typically has low to moderate gradient and is occasionally confined. The gradient gradually decreases in reach 2 and is consistently low thorough reach 5, which is a lake. A number of wetlands were noted in direct contact with the main creek. No other sensitive areas were observed. This system was sampled at 2 locations, including reach 4 of the mainstem.

5.5.2 Fish Summary Tables and Sensitive Habitats

No historical information was noted for this stream, however rainbow trout and cutthroat trout were caught by electrofishing at T31 in reach 4, roughly 1.4 km downstream from the lake in reach 5. Fish were not caught at the sample site Y46, located in a tributary to reach 1. The main creek was classified as an S3 based on the presence of the trout and the average channel width of 1.64 meters. The tributary was classified as an S4 based on an average channel width of 1.43 m and the presence of rearing habitat in the sampling area. The crew noted that LOD, pool and overstream vegetation cover is available at this site. The remaining tributaries to this stream are small S4 sized streams that have no gradient and/or confinement problems.

DFO/MoELP Stream Survey Form **Site Number:** TERRY 31 **Reach No.:** 4

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 31, Unit 2, Northwest of SBFEP A37548, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 3.2 MW **Date:** 29-Jul-96 **Time:** 14:45 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6444 .61612 **Length surveyed (m):** 100.0 GE **Survey Crew:** HS \TD\ \ \ \ \ \ \ **Photos:** T-2-11,12 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.6	MS
Av. Wet. Width (m):	1.5	MS
Av. Max Riffle Depth (cm):	3	MS
Av. Max Pool Depth (cm):	17	MS
Gradient (%):	3.0	CL
Pool: 40 Riffle: 30 Run: 30 Other: 0		
% Side Channel:	0-10	GE
% Debris Area:	5-15	GE
%Stable:	75	GE

Specific Data

1.6	1.4	1.5	2.4	1.3
1.5	1.4	1.4	2.0	1.3
2	4	2		
16	20	15		

Cover

Cover Total % : 60 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
10	10	10	10	55	5

Crown Closure % : 15 Aspect : SW

Bed Material

Fines	Clay, silt, sand (<2mm):	20	20
Gravels	Small (2-16mm):	60	20
	Large (16-64mm):		40
Larges	Sm. cobble (64-128mm):	20	5
	Lge cobble (128-256mm):		5
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 27 Compaction: Medium

Discharge

Wetted Width (m) :	0.5	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.44	F
Discharge (m3/s) :	0.02	F

Banks

Height (m): 0.2

% Unstable: 10

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

RB, ACT

2 C 3.0 | 2620

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: H Flood Signs Ht(m): 0.3

Bars (%): 5 pH: Braided: Y

Water Temp. (°C): 21.0 02 (ppm):

Turb. (cm): 20 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	RB	1	155	J				EL
	CT	3	70-100	J				EL

Comments

C1: S3

C2: The side slopes were not measured at this site.

C3: No fisheries sensitive zones were noted at this site.

C4: The electroshocking effort, using a Honda Mark 10 model, was 39 seconds over 30 meters.

C: N 55 34' 33" W 126 42' 32.3"

C6: No additional bank texture information.

C7: DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: Some good rearing habitat was observed at this site. Hay bails have been used in this area for bank stabilization.

Photo #: T-2-11, 1996/07/29
Site #: T31, Upstream view, stabilization.

Photo #: T-2-12, 1996/07/29
Site #: T31, Downstream view.

DFO/MoELP Stream Survey Form

Site Number: Y46 **Reach No.: 1**

Trib to Babine R.

TRITON Environmental Consultants Ltd.

Location: Y46, Unit 2 **Stream (Gaz.):** Unnamed **Watershed Code:** 016-5200-000-000-000-000-000-000-000-000-000-

Map #:	93 M 057	Reach Length (km):	3.1	MA	Date:	17-Jul-97	Time:	11:00	Agency:	TEC	Access:	V2	Fish Card:	N	Field	☒	Historical ☐
U.T.M.:	9 .6433 .61579	Length surveyed (m):	100.0	GE	Survey Crew:	DD\SJ\ \ \ \ \ \ \			Photos:	Y-6-24,25, Y-7-1			Air Photos:				

Channel Characteristics

			Specific Data					
Av. Chan. Width (m):	1.4	MS	1.2	1.5	1.6	1.6	1.4	1.3
Av. Wet. Width (m):	0.6	MS	0.5	0.6	1.0	0.4	0.7	0.4
Av. Max Riffle Depth (cm):	2	MS	3	2	2	2	2	
Av. Max Pool Depth (cm):	9	MS	8	10	9	8	9	
Gradient (%):	1.0	CL						

Pool: 10 Riffle: 5 Run: 85 Other: 0

% Side Channel:	0-10	GE
% Debris Area:	>15	GE
%Stable:	40	GE

Cover

Cover Total %: 40 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
20	20	10	0	40	10

Crown Closure %: 70 Aspect: SE

Bed Material

Fines	Clay, silt, sand (<2mm):	70	70
Gravels	Small (2-16mm):	10	0
	Large (16-64mm):		10
	Sm. cobble (64-128mm):		10
Larges	Lge cobble (128-256mm):	20	10
	Bldr cobble (>256mm):		0
Bedrock		0	0

N D90 (cm): 14 Compaction: Low

Discharge

Wetted Width (m):	0.3	MS
Mean Depth (m):	0.1	MS
Mean Velocity (m/s):	0.02	F
Discharge (m3/s):	0.00	F

Banks

Height (m): 0.2

% Unstable: 20

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0.7

Bars (%): 0 pH: 6.9 Braided: N

Water Temp. (°C): 10.0 02 (ppm):

Turb. (cm): Cond. (µmhos): 40

Reach Symbol

(Fish)

(DV)

1 D 1.0 | 7120

(Width, Valley: Channel, Slope) | (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				EL

Comments

C1: S4.

C2: I.S=5%, RS=8%

C3: No fisheries sensitive zones noted.

C4: The electroshocking effort, using a Smithroot 12 B POW model set at H, 7, 400V, was 195 seconds over 100 meters.

C5: No additional bank texture information.

C6: DO was not measured at this site, the water was clear to bottom. The air temperature at this site was 20.0 C.

C7: The flow in this stream has been effectively cut-off by current road construction. Two culverts will be installed. Once the road silt has blown out in the next freshet, this big S4 could provide rearing habitat. It is well shaded and has LOD and pool cover.

Photo #: Y-6-24, 17/07/97
Site #: Y46, Looking downstream at muudy water in the channel, below the road crossing.

Photo #: Y-6-25, 17/07/97
Site #: Y46, Looking across the channel at the corduroy road on site.

Photo #: Y-7-1, 17/07/97
Site #: Y46, Looking upstream at the channel.

5.6 Unnamed Tributary to Babine River (480-3240-000) (93 M 057)

5.6.1 Sensitive Habitats and Barriers.

This unnamed tributary is 7 km in length and has 13 smaller tributaries. No barriers to fish migration were noted at any of the sample sites. A lake (440 m by 200m) in the upper reaches of a larger tributary to the main creek is surrounded by fisheries sensitive wetlands. Reach 1 has fairly steep gradient and is somewhat confined. Reach 2 is quite confined but has lower gradient. Reach 3 has low gradient and is unconfined. This system was sampled at 3 locations, including reach 3 of the mainstem.

5.6.2 Fish Summary Tables and Stream Classification

No historical records were found for this stream, however Dolly Varden were caught by electrofishing and minnow trapping at two sites, T32 and R38. The mainstem was classified as an S3 in reach 3 based on an average channel width of 1.94 meters and the presence of Dolly Varden in the sampling area, and the larger tributary was classified as an S3 based and average channel width of 1.80 meters and the presence of Dolly Varden in the sampling area. One small tributary was classified as "NC" based on the lack of a defined channel and another was classified as S4 based on an average channel width of 0.71 meters and the lack of barriers to fish migration (see Table 4). The remaining tributaries are typically intermittent S4 sized streams.

DFO/MoELP Stream Survey Form

Site Number: RYAN 38 **Reach No.: 1**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 38, Unit 2, Northwest of 640-4, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 | Reach Length (km): 5.5 MW | Date: 30-Jul-96 | Time: 10:30 | Agency: TEC | Access: HL | Fish Card: N | Field ☒ | Historical ☐

U.T.M. : 9 .6450 .61539 | Length surveyed (m): 80.0 GE | Survey Crew: RH \EM\ \ \ \ \ \ \ | Photos: R-3-8 | Air Photos:

Channel Characteristics

	Av. Chan. Width (m):	1.8	GE
	Av. Wet. Width (m):	1.8	GE
N	Av. Max Riffle Depth (cm):	0	GE
	Av. Max Pool Depth (cm):	170	GE
	Gradient (%):	1.0	CL
	Pool: 0 Riffle: 0 Run: 100 Other: 0		
	% Side Channel:	>40	GE
	% Debris Area:	0-5	GE
	%Stable:	50	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 65 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
20	5	0	5	60	10

Crown Closure % : 15 Aspect : NE

Bed Material

	Fines	Clay, silt, sand (<2mm):	100	100
	Gravels	Small (2-16mm):	0	0
		Large (16-64mm):		0
	Larges	Sm. cobble (64-128mm):	0	0
		Lge cobble (128-256mm):		0
		Bldr cobble (>256mm):		0
	Bedrock		0	0

N D90 (cm): 0 Compaction: Low

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 16.0 02 (ppm):

Turb. (cm): 50 Cond. (µmhos):

Reach Symbol

(Fish)

DV

2 D 1.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	DV	1	95	J	R			MT

Comments

C1 S3

C2 LS=7%, RS=25%

C3 No fisheries sensitive zones were noted at this site.

C4 Two minnow traps were set at this site, with a soak time of 24 hours.

C5 Lat N 55 30'33" 126 42'06"

C6 No additional fish habitat information.

C7 DO, pH, conductivity were not measured at this site. No flow was detected in Reach 2. The mean air temperature on this day was 11.3°C

C8 Reach 1 has better habitat, with good substrate and numerous riffles.

Photo #: R-3-8, 1996/07/30
Site #: R38, Beaver pond.

DFO/MoELP Stream Survey Form

Site Number: TERRY 32 **Reach No.: 3**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 32, Unit 2, East of 636-1, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 6.0 MW **Date:** 29-Jul-96 **Time:** 16:20 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6459 .61572 **Length surveyed (m):** 75.0 GE **Survey Crew:** HS \TD\ \ \ \ \ \ \ **Photos:** T-2-13 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	1.9	MS
Av. Wet. Width (m):	1.2	MS
Av. Max Riffle Depth (cm):	8	MS
Av. Max Pool Depth (cm):	12	MS
Gradient (%):	3.5	CL
Pool: 40 Riffle: 40 Run: 20 Other: 0		
% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	60	GE

Specific Data

1.1	2.0	2.1	1.9	2.6
1.1	1.0	1.3	1.1	1.7
3	6	14		
18	11	8		

Cover

Cover Total % : 75 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	20	10	40	20	10

Crown Closure % : 90 Aspect : SE

Bed Material

Fines	Clay, silt, sand (<2mm):	40	40
Gravels	Small (2-16mm):	10	5
	Large (16-64mm):		5
Larges	Sm. cobble (64-128mm):	50	10
	Lge cobble (128-256mm):		30
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 26 Compaction: Medium

Discharge

Wetted Width (m) :	0.0	
Mean Depth (m) :	0.0	
Mean Velocity (m/s) :	0.00	
Discharge (m3/s) :	0.03	ge

Banks

Height (m): 0.1

% Unstable: 70

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0.25

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 15.0 02 (ppm):

Turb. (cm): 18 Cond. (µmhos):

Reach Symbol

(Fish)

DV

2 D 4.0 | 4150

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	DV	1	118	N				EL

Comments

C1: S3

C2: LS= 35 RS= 37

C3: No fisheries sensitive zones were noted at this site.

C4: The electroshocking effort, using a Honda Mark 10 model, was 183 seconds over 75 meters.

C5: N 55 32' 18" W 126 41' 11"

C6: No additional bank texture information.

C7: DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: A lot of instream vegetation cover was observed at this site.

Photo #: T-2-13, 1996/07/29
Site #: T32, Channel.

DFO/MoELP Stream Survey Form **Site Number:** TERRY 34 **Reach No.:** 1

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: TERRY 34, Unit 2, Southwest of 636-3, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 2.9 MW **Date:** 30-Jul-96 **Time:** 7:30 **Agency:** TEC **Access:** V2 **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6472 .61539 **Length surveyed (m):** 30.0 GE **Survey Crew:** HS \TD\ \ \ \ \ \ \ **Photos:** T-2-14,15 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	0.7	MS
Av. Wet. Width (m):	0.4	MS
Av. Max Riffle Depth (cm):	2	MS
Av. Max Pool Depth (cm):	10	MS
Gradient (%):	0.0	CL
Pool: 15 Riffle: 60 Run: 25 Other:	0	
% Side Channel:	0-10	GE
% Debris Area:	0-5	GE
%Stable:	5	GE

Specific Data

1.0	0.8	0.8	0.4	0.6	
0.2	0.5	0.5	0.2	0.4	
1	2	0	0	0	0
6	14	10	0	0	0

Cover

Cover Total % : 95 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	5	0	20	75	0

Crown Closure % : 95 Aspect : W

Bed Material

Fines	Clay, silt, sand (<2mm):	100	100
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m) :	0.4	MS
Mean Depth (m) :	0.1	MS
Mean Velocity (m/s) :	0.05	F
Discharge (m3/s) :	0.00	F

Banks

Height (m): 0.1

% Unstable: 85

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

NF

1 D 0.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: UC

Valley : Channel Ratio 10+

Stage: L Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 11.5 02 (ppm):

Turb. (cm): 14 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				VO

Comments

C1 S6

C2 LS=5%, RS=5%

C3 No fisheries sensitive zones were noted at this site.

C4 This flow was too low at the time of sampling to minnow trap or electrofish.

C5 Lat N 55 31'06" 126 39'56"

C6 No additional bank texture information.

C7 DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 11.3°C

C8 The channel is not well defined in the sampling area. This is a borderline NC.

Photo #: T-2-14, 1996/07/30
Site #: T34, Downstream view.

Photo #: T-2-15, 1996/07/30
Site #: T34, Downstream view.

DFO/MoELP Stream Survey Form **Site Number: TERRY 35** **Reach No.: 0**

Not a creek

TRITON Environmental Consultants Ltd.

Location: TERRY 35, Unit 2, East of 636-3,see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 0.0 GE **Date:** 30-Jul-96 **Time:** 8:15 **Agency:** TEC **Access:** V2 **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6476 .61549 **Length surveyed (m):** 0.0 **Survey Crew:** HS \TD \ \ \ \ \ \ **Photos:** T-2-16 **Air Photos:**

Channel Characteristics

N	Av. Chan. Width (m):	0.0	GE
N	Av. Wet. Width (m):	0.0	GE
N	Av. Max Riffle Depth (cm):	0	GE
N	Av. Max Pool Depth (cm):	0	GE
N	Gradient (%):	0.0	ma
N	Pool: 0 Riffle: 0 Run: 0 Other: 0		
N	% Side Channel:		
N	% Debris Area:	0	GE
	%Stable:	0	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 0

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

N Crown Closure % : 0 Aspect :

Bed Material

Fines	Clay, silt, sand (<2mm):	0	0
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction:

Discharge

N	Wetted Width (m) :	
N	Mean Depth (m) :	
N	Mean Velocity (m/s) :	
N	Discharge (m3/s) :	

Banks

Height (m): 0.0

% Unstable: 0

Fines ☐ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

NF

0 E 0.0 | 0000

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: N/A

Valley : Channel Ratio N/A

Stage: Dry Flood Signs Ht(m): 0

Bars (%): 0 pH: 0.0 Braided: N

Water Temp. (°C): 0.0 02 (ppm): 0.0

Turb. (cm): 0 Cond. (µmhos): 0

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 NC

C2 The side slopes were not measured at this site.

C3 No fisheries sensitive zones were noted at this site.

C4 This site was not electrofished.

C5 Lat N 55 31'20" 126 39'59"

C6 No additional bank texture information.

C7 Water quality was not evaluated at this site.

C8 No fish habitat was observed at this site.

Photo #: T-2-16, 1996/07/30
Site #: T35, Thick vegetation.

5.7 Unnamed Tributary to the Babine River (480-3352-000) (93 M 047, 93 M 056, 93 M 057)

5.7.1 Sensitive Habitats and Barriers

This tributary is 11.3 km long and is fed by 25 tributaries. Reach 1 is quite confined and has moderately steep gradient. Reach 2 flows through a low gradient area with a large fisheries sensitive wetland. Reach 3 is a lake occurring in a confined valley. Reach 4 has low gradient. The gradient and confinement gradually increase in reach 5 and in reach 6 the gradient is moderately steep and the channel is quite confined. In reach 7, the gradient and confinement decrease and multiple beaver dams were observed. An extensive network of wetlands occurs in this area. The headwaters of this system are characterized by steep gradient. This system was sampled at 5 locations, including reaches 2, 4, 5 and 7 of the mainstem.

5.7.2 Fish Summary Tables and Stream Classification

The historical records indicate the presence of steelhead in reach 2. Rainbow trout, cutthroat trout and Dolly Varden were caught by electrofishing and minnow trapping in reaches 2,4 and 5. The mainstem was classified as an S3 in reaches 2,4 and 5 based on the presence of fish and average channel widths of 3.0 meters, 3.87 meters and 2.85 meters respectively. It was also classified as an S3 in reach 7 based on the presence of Dolly Varden in the sampling area and an average channel width of 3.31 meters. This small system provides rearing and spawning habitat.

DFO/MoELP Stream Survey Form

Site Number: HASLETT 13 **Reach No.:** 1

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: HASLETT 13, Unit 2, W of Babine River on SW end of lake 272 on map, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-3352-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 1.2 MW **Date:** 29-Jul-96 **Time:** 9:25 **Agency:** TEC **Access:** HL **Fish Card:** N ☐ Field ☒ Historical ☐

U.T.M. : 9 .6396 . 61545 **Length surveyed (m):** 150.0 GE **Survey Crew:** JH \KA \ \ \ \ \ \ \ **Photos:** H-1-14 **Air Photos:**

Channel Characteristics

	Av. Chan. Width (m):	1.2	TA
	Av. Wet. Width (m):	1.2	TA
N	Av. Max Riffle Depth (cm):	0	TA
	Av. Max Pool Depth (cm):	132	TA
	Gradient (%):	1.0	CL
	Pool: 0 Riffle: 0 Run: 0 Other:	100	
	% Side Channel:	0	GE
	% Debris Area:	40	GE
	%Stable:	50	GE

Specific Data

1.0	1.2	1.3	1.0	1.2	1.4
1.0	1.2	1.3	1.0	1.2	1.4
110	150	140	130		

Cover

Cover Total % : 65 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
50	5	0	10	35	0

Crown Closure % : 30 Aspect : NE

Bed Material

Fines	Clay, silt, sand (<2mm):		100	100
Gravels	Small (2-16mm):		0	0
	Large (16-64mm):			0
Larges	Sm. cobble (64-128mm):		0	0
	Lge cobble (128-256mm):			0
	Bldr cobble (>256mm):			0
Bedrock			0	0

D90 (cm): 0 Compaction: Low

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Banks

Height (m): 0.1

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

(RB)

1 E 1.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: N/A

Valley : Channel Ratio N/A

Stage: M Flood Signs Ht(m): 0.1

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 50 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				MT

Comments

C1: S4

C2: LS=0, RS=0

C3: No fisheries sensitive zones.

C4: This site was not electrofished as the wading conditions were dangerous.

C5: N 55 31.1' W 126 47.11'

C6: No additional bank texture information.

C7: DO and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: Discharge was not measured at this site, standing water only was present in the channel at the time of sampling.

Photo #: H-1-14, 1996/07/29
Site #: H13, Looking downstream, channel through grass.

DFO/MoELP Stream Survey Form

Site Number: HASLETT 14 **Reach No.: 5**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: HASLETT 14, Unit 2, West of Babine River, SW from lake 268 on map, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-3352-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 2.2 MW **Date:** 29-Jul-96 **Time:** 13:30 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6405 .61539 **Length surveyed (m):** 150.0 GE **Survey Crew:** JH\KA\ \ \ \ \ \ \ **Photos:** H-1-15 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	2.9	TA
Av. Wet. Width (m):	2.5	TA
Av. Max Riffle Depth (cm):	11	TA
Av. Max Pool Depth (cm):	30	TA
Gradient (%):	5.0	CL
Pool: 25 Riffle: 35 Run: 40 Other:	0	
% Side Channel:	0	GE
% Debris Area:	>15	GE
%Stable:	70	GE

Specific Data

3.0	2.6	2.7	3.2	2.6	3.0
2.2	2.2	2.5	2.9	2.3	2.6
10	15	10		6	12
25	35	30	32		

Cover

Cover Total % : 60 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
15	30	5	5	30	15

Crown Closure % : 70 Aspect : E

Bed Material

Fines	Clay, silt, sand (<2mm):	20	20
Gravels	Small (2-16mm):	40	10
	Large (16-64mm):		30
Larges	Sm. cobble (64-128mm):	40	15
	Lge cobble (128-256mm):		15
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 31 Compaction: Medium

Discharge

Wetted Width (m) :	2.2	TA
Mean Depth (m) :	0.2	TA
Mean Velocity (m/s) :	0.29	F
Discharge (m3/s) :	0.10	F

Banks

Height (m): 0.1

% Unstable: 40

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: OC

Valley : Channel Ratio 5-10

Stage: M Flood Signs Ht(m): 0.1

Bars (%): 10 pH: Braided: N

Water Temp. (°C): 12.0 02 (ppm):

Turb. (cm): 35 Cond. (µmhos):

Reach Symbol

(Fish)

CT,RB

3 C 5.0 | 2440

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	ACT	1	78	J	R			EL
	RB	5	45-82	J	R			EL

Comments

C1: S3

C2: LS= 10, RS= 6

C3: No fisheries sensitive zones.

C4: The electroshocking effort, using a Honda Mark 10 model, was 215 seconds over 50 meters.

C5: N 55 30.678' W 126 46.599'

C6: No additional bank texture information.

C7: DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8: Some good rearing habitat was noted in the sampling area.

Photo #: H-1-15, 1996/07/29
Site #: H14, Looking upstream, channel shaded by alder.

DFO/MoELP Stream Survey Form

Site Number: HASLETT 15 **Reach No.: 4**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: HASLETT 15, Unit 2, W of Babine River, from lake 272 on map, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 1.1 MW **Date:** 29-Jul-96 **Time:** 14:47 **Agency:** TEC **Access:** HL **Fish Card:** N Field ☒ Historical ☐

U.T.M. : 9 .6408 .61539 **Length surveyed (m):** 150.0 GE **Survey Crew:** JH \KA \ \ \ \ \ \ **Photos:** H-1-16 **Air Photos:**

Channel Characteristics

Av. Chan. Width (m):	3.9	TA
Av. Wet. Width (m):	3.7	TA
Av. Max Riffle Depth (cm):	16	TA
Av. Max Pool Depth (cm):	42	TA
Gradient (%):	6.0	CL

Pool: 25 Riffle: 35 Run: 40 Other: 0

% Side Channel:	0	GE
% Debris Area:	35	GE
%Stable:	35	GE

Specific Data

3.5	4.2	3.6	4.0	4.0	3.9
3.3	3.9	3.6	3.9	3.7	3.6
13	15	21			
55	40	30			

Cover

Cover Total % : 70 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
25	25	5	0	15	30

Crown Closure % : 50 Aspect : E

Bed Material

Fines	Clay, silt, sand (<2mm):	10	10
Gravels	Small (2-16mm):	20	10
	Large (16-64mm):		10
Larges	Sm. cobble (64-128mm):	70	30
	Lge cobble (128-256mm):		30
	Bldr cobble (>256mm):		10
Bedrock		0	0

D90 (cm): 33 Compaction: Medium

Discharge

Wetted Width (m) :	3.7	TA
Mean Depth (m) :	0.1	TA
Mean Velocity (m/s) :	0.51	F
Discharge (m3/s) :	0.14	F

Banks

Height (m): 0.3

% Unstable: 10

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0.4

Bars (%): 40 pH: Braided: N

Water Temp. (°C): 15.0 02 (ppm):

Turb. (cm): 55 Cond. (µmhos):

Reach Symbol

(Fish)

DV

4 D 6.0 | 1270

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	DV	3	65-82	J	R			EL

Comments

C1 S3

C2 LS= 7, RS= 10

C3 No fisheries sensitive zones were noted at this site.

C4 The electroshocking effort using a Honda Mark 10 model, was 291seconds over 50 meters.

C5 N 55 30.638' W 126 46.508'

C6 No additional bank texture information.

C7 DO, pH, conductivity were not measured at this site. The mean air temperature on this day was 19.7°C

C8 Some good rearing habitat was noted at this site.

Photo #: H-1-16, 1996/07/29
Site #: H15, Looking downstream.

DFO/MoELP Stream Survey Form

Site Number: JULIE 39 Reach No.: 5

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: JULIE 39, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-3352-000-000-000-000-000-000-000-000-000-0

Map #:	93 M 056	Reach Length (km):	0.9	MW	Date:	30-Jul-96	Time:	8:56	Agency:	TEC	Access:	HL	Fish Card:	N	Field ☒ Historical ☐
U.T.M. :	9 .6369 .61534	Length surveyed (m):	400.0	GE	Survey Crew:	JP\KG\ \ \ \ \ \ \			Photos:	J-2-24	Air Photos:				

Channel Characteristics

	Av. Chan. Width (m):	3.3	MS
	Av. Wet. Width (m):	3.2	MS
N	Av. Max Riffle Depth (cm):	0	MS
	Av. Max Pool Depth (cm):	56	MS
	Gradient (%):	0.0	CL
	Pool: 100 Riffle: 0 Run: 0 Other: 0		
	% Side Channel:	0-10	GE
	% Debris Area:	5-15	GE
	%Stable:	100	GE

Specific Data

2.8	4.0	3.1	3.4	3.3
2.7	3.8	3.0	3.2	3.1
0	0	0	0	0
43	46	80		

Cover

Cover Total % : 35 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
65	5	0	25	5	0

Crown Closure % : 5 Aspect : E

Bed Material

	Fines	Clay, silt, sand (<2mm):	100	100
	Gravels	Small (2-16mm):	0	0
		Large (16-64mm):		0
	Larges	Sm. cobble (64-128mm):	0	0
		Lge cobble (128-256mm):		0
		Bldr cobble (>256mm):		0
	Bedrock		0	0

N D90 (cm): 0 Compaction: Low

Discharge

	Wetted Width (m) :	2.6 MS
	Mean Depth (m) :	0.6 MS
	Mean Velocity (m/s) :	0.03 F
	Discharge (m3/s) :	0.04 F

Banks

Height (m): 0.2

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: Flood Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 80 Cond. (µmhos):

Reach Symbol

(Fish)

DV

3 D 0.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	DV	3	78-140	J	R			MT

Comments

C1 S3

C2 LS=5%, RS=1%

C3 This site is in the middle of a swampy area that has been heavily impacted by beaver activity.

C4 The electroshocking effort, using a Smithroot 12 B POW model was 491 seconds over 200 meters. Six minnow traps were set at this site, with a 24 hr soak time.

C5 Lat N 55 30' 30", Long W 126 49' 57"

C6 No additional bank texture information.

C7 DO, pH, conducitivity were not measured at this site. The mean air temperature on this day was 11.3°C

C8 Deep pools with additional instream vegetation cover were noted at this site. Some flagging was found in the sampling area. The road is quite close to the site.

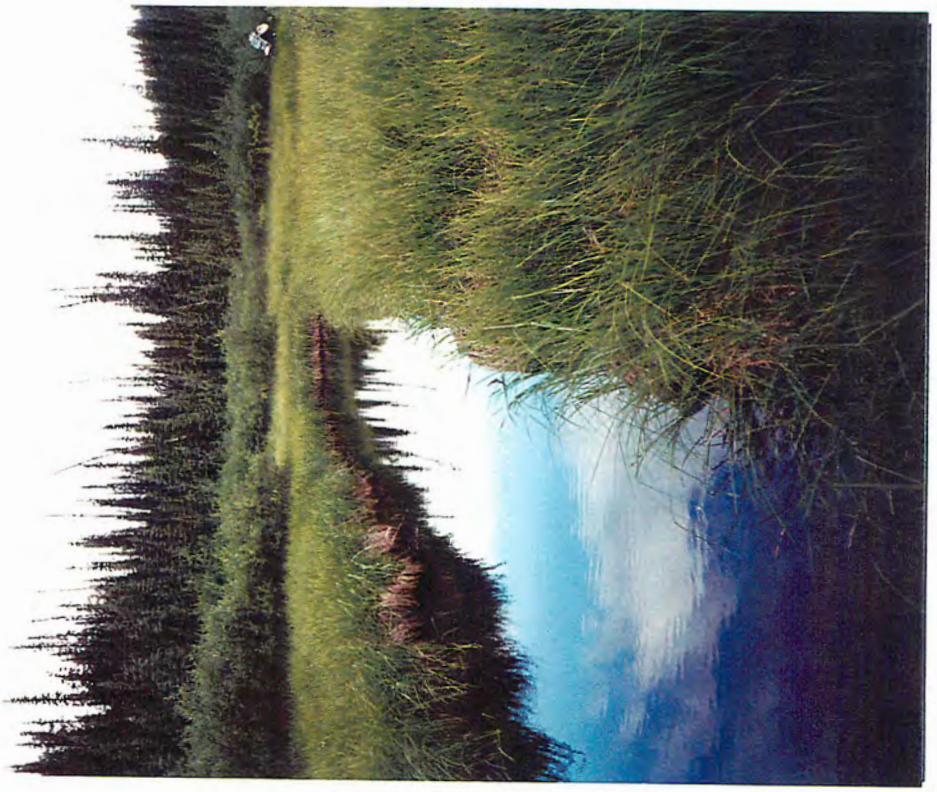

Photo #: J-2-24, 1996/07/29
Site #: J39, Looking downstream, channel through grassy area.

DFO/MoELP Stream Survey Form

Site Number: RYAN 36 **Reach No.: 2**

Trib. to Babine R.

TRITON Environmental Consultants Ltd.

Location: RYAN 36, Unit 2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-3352-000-000-000-000-000-000-000-000-000-0

Map #:	93 M 057	Reach Length (km):	2.2	MW	Date:	30-Jul-96	Time:	8:45	Agency:	TEC	Access:	HL	Fish Card:	N	Field ☒ Historical ☐
U.T.M. :	9. 6412 . 61543	Length surveyed (m):	300.0	GE	Survey Crew:	RH \EM\ \ \ \ \ \ \					Photos:	None	Air Photos:		

Channel Characteristics

	Av. Chan. Width (m):	3.0	GE
	Av. Wet. Width (m):	3.0	GE
N	Av. Max Riffle Depth (cm):	0	GE
	Av. Max Pool Depth (cm):	170	GE
	Gradient (%):	1.0	CL
	Pool: 0 Riffle: 0 Run: 100 Other: 0		
	% Side Channel:	10-40	GE
	% Debris Area:	0-5	GE
	%Stable:	100	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 50 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
40	5	0	10	40	5

Crown Closure % : 15 Aspect : SE

Bed Material

	Fines	Clay, silt, sand (<2mm):	100	100
	Gravels	Small (2-16mm):	0	0
		Large (16-64mm):		0
	Larges	Sm. cobble (64-128mm):	0	0
		Lge cobble (128-256mm):		0
		Bldr cobble (>256mm):		0
	Bedrock		0	0

N D90 (cm): 0 Compaction: Low

Discharge

Wetted Width (m) :	3.0	GE
Mean Depth (m) :	1.0	GE
Mean Velocity (m/s) :	0.02	F
Discharge (m3/s) :	0.05	F

Banks

Height (m): 0.3

% Unstable: 0

Fines ☒ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: UC

Valley : Channel Ratio 10+

Stage: M Flood Signs Ht(m): 0

Bars (%): 0 pH: Braided: N

Water Temp. (°C): 14.0 02 (ppm):

Turb. (cm): 170 Cond. (µmhos):

Reach Symbol

(Fish)

RB

3 D 1.0 | F

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	RB	1	130	J	R			MT

Comments

C1: S3

C2: LS=5%, RS=6%

C3: A large number of swamps are associated with this stream.

C4: One minnow trap was set for 24 hours at this site.

C5: Lat N 55 30'35" 126 45'23"

C6: No additional bank texture information.

C7: DO, pH and conductivity were not measured at this site. The mean air temperature on this day was 11.3°C

C8: Deep pools and overstream vegetation make up the bulk of the cover for fish at this site. The water was too deep to wade in the sampling area.

DFO/MoELP Stream Survey Form **Site Number: E290** **Reach No.: 0**

Not a creek

TRITON Environmental Consultants Ltd.

Location: E290, Unit 2, NE of the Babine and West of the Nilkitkwa. Stream (Gaz.): Unnamed Watershed Code: 016-9100-000-000-000-000-000-000-000-000-000-

Map #: 93 M 067 Reach Length (km): 0.0 GE Date: 11-Sep-97 Time: 13:10 Agency: TEC Access: V4 Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .6389 .61655 Length surveyed (m): 100.0 GE Survey Crew: SJ \JL \ \ \ \ \ \ \ Photos: E-28-3 Air Photos:

Channel Characteristics

N	Av. Chan. Width (m):	0.0	GE
N	Av. Wet. Width (m):	0.0	GE
N	Av. Max Riffle Depth (cm):	0	GE
N	Av. Max Pool Depth (cm):	0	GE
	Gradient (%):	5.0	CL

N Pool: 0 Riffle: 0 Run: 0 Other: 0

N % Side Channel: GE

N % Debris Area: 0 GE

%Stable: GE

Specific Data

Bed Material

N	Fines	Clay, silt, sand (<2mm):	0	0
N	Gravels	Small (2-16mm):	0	0
		Large (16-64mm):		0
N	Larges	Sm. cobble (64-128mm):	0	0
		Lge cobble (128-256mm):		0
		Bldr cobble (>256mm):		0
N	Bedrock		0	0

N D90 (cm): 0 N Compaction:

Cover

N Cover Total % : 0 GE

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

N Crown Closure % : 0 N Aspect : S

Discharge

N Wetted Width (m) :

N Mean Depth (m) :

N Mean Velocity (m/s) :

N Discharge (m3/s) :

Banks

N Height (m): 0.0

% Unstable: 0

N Fines ☐ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: N/A

Valley : Channel Ratio N/A

Stage: Dry N Flood Signs Ht(m):

N Bars (%): 0 pH: Braided: N

N Water Temp. (°C): 02 (ppm):

Turb. (cm): Cond. (µmhos):

Reach Symbol

(Fish)

NF

0 E 5.0 | 0000

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 NC

C2 Side slopes not applicable.

C3 Fisheries sensitive zones not applicable.

C4 This site was not electrofished.

C5 Bank texture not applicable.

C6 Water quality not applicable.

C7 Neither water nor a defined channel was observed at this site. The crew hiked a 100 m radius and found no creek in this location.

Photo #: E-28-3, 11-Sep-97
Site #: E290, Looking at an "NC"

DFO/MoELP Stream Survey Form

Site Number: TERRY 29 **Reach No.: 0**

Not a creek

TRITON Environmental Consultants Ltd.

Location: TERRY 29, Unit 2, Northeast of 515-2, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 Reach Length (km): 0.0 GE Date: 29-Jul-96 Time: 13:45 Agency: TEC Access: V2 Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .6411 .61616 Length surveyed (m): 25.0 GE Survey Crew: HS \TD\ \ \ \ \ \ \ Photos: T-2-8,9 Air Photos:

Channel Characteristics

N	Av. Chan. Width (m):	0.0	GE
N	Av. Wet. Width (m):	0.0	GE
N	Av. Max Riffle Depth (cm):	0	GE
N	Av. Max Pool Depth (cm):	0	GE
	Gradient (%):	0.0	ma
N	Pool: 0 Riffle: 0 Run: 0 Other: 0		
N	% Side Channel:		
N	% Debris Area: 0		GE
	%Stable:	0	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 0

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

N Crown Closure % : 0 Aspect :

Bed Material

Fines	Clay, silt, sand (<2mm):	0	0
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction:

Discharge

N	Wetted Width (m) :		
N	Mean Depth (m) :		
N	Mean Velocity (m/s) :		
N	Discharge (m3/s) :		

Reach Symbol

(Fish)

NF

0 E 0.0 | 0000

(Width, Valley: Channel, Slope) (Bed Material)

Banks

N Height (m): 0.0

% Unstable: 0

N Fines ☐ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: N/A

Valley : Channel Ratio N/A

Stage: Dry N Flood Signs Ht(m):

N Bars (%): 0 pH: Braided: N

N Water Temp. (°C): 02 (ppm):

Turb. (cm): 0 Cond. (µmhos):

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 NC

C2 The side slopes were not measured at this site.

C3 No fisheries sensitive zones were noted.

C4 This site was not electrofished.

C5 N 55 34' 46.8" W 126 45' 39.8"

C6 No additional bank texture information.

C7 Water quality was not evaluated at this site.

C8 No fish habitat was observed at this site.

Photo #: T-2-8, 1996/07/29
Site #: T29, Swamp.

Photo #: T-2-9, 1996/07/29
Site #: T29, Not a creek.

DFO/MoELP Stream Survey Form

Site Number: TERRY 30 **Reach No.: 0**

Not a creek

TRITON Environmental Consultants Ltd.

Location: TERRY 30, Unit 2, North of SBFEP A37548, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 480-0000-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 Reach Length (km): 0.0 GE Date: 29-Jul-96 Time: 14:30 Agency: TEC Access: V2 Fish Card: N Field ☒ Historical ☐

U.T.M. : 9 .6437 .61626 Length surveyed (m): 0.0 GE Survey Crew: HS \TD \ \ \ \ \ \ Photos: T-2-10 Air Photos:

Channel Characteristics

N	Av. Chan. Width (m):	0.0	GE
N	Av. Wet. Width (m):	0.0	GE
N	Av. Max Riffle Depth (cm):	0	GE
N	Av. Max Pool Depth (cm):	0	GE
	Gradient (%):	0.0	ma
N	Pool: 0 Riffle: 0 Run: 0 Other: 0		
N	% Side Channel:		
N	% Debris Area:	0	GE
	%Stable:	0	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0	0	0	0	0	0
0	0	0	0	0	0

Cover

Cover Total % : 0

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

N Crown Closure % : 0 Aspect :

Bed Material

Fines	Clay, silt, sand (<2mm):	0	0
Gravels	Small (2-16mm):	0	0
	Large (16-64mm):		0
Larges	Sm. cobble (64-128mm):	0	0
	Lge cobble (128-256mm):		0
	Bldr cobble (>256mm):		0
Bedrock		0	0

D90 (cm): 0 Compaction:

Discharge

N	Wetted Width (m) :	0.0	
N	Mean Depth (m) :	0.0	
N	Mean Velocity (m/s) :	0.00	
N	Discharge (m3/s) :		

Banks

Height (m): 0.0

% Unstable: 0

Fines ☐ Gravels ☐ Larges ☐ Bedrock ☐

Reach Symbol

(Fish)

NF

0 E 0.0 | 0000

(Width, Valley: Channel, Slope) (Bed Material)

Confinement: N/A

Valley : Channel Ratio N/A

Stage: Dry Flood Signs Ht(m): 0

Bars (%): 0 pH: 0.0 Braided: N

Water Temp. (°C): 0.0 02 (ppm): 0.0

Turb. (cm): 0 Cond. (µmhos): 0

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1: NC

C2: The side slopes were not measured at this site.

C3: No fisheries sensitive zones were noted at this site.

C4: This site was not electrofished.

C5: N 55 35' 17.8" W 126 43' 14"

C6: No additional bank texture information.

C7: Water quality was not evaluated at this site.

C8: Standing water over an organic bottom was observed at this site.

Photo #: T-2-10, 1996/07/29
Site #: T30, Not a creek.

DFO/MoELP Stream Survey Form **Site Number:** TERRY 33 **Reach No.:** 0

Not a creek

TRITON Environmental Consultants Ltd.

Location: TERRY 33, Unit 2, 200 m east of Rd. 486, see C5. **Stream (Gaz.):** Unnamed **Watershed Code:** 016-7600-000-000-000-000-000-000-000-000-000-0

Map #: 93 M 057 **Reach Length (km):** 0.0 GE **Date:** 30-Jul-96 **Time:** 14:00 **Agency:** TEC **Access:** V2 **Fish Card:** N Field ☒ Historical ☐

U.T.M.: 9 .6432 .61625 **Length surveyed (m):** 500.0 GE **Survey Crew:** HS \TD\ \ \ \ \ \ \ **Photos:** T-2-17 **Air Photos:**

Channel Characteristics

N	Av. Chan. Width (m):	0.0	GE
N	Av. Wet. Width (m):	0.0	GE
N	Av. Max Riffle Depth (cm):	0	GE
N	Av. Max Pool Depth (cm):	0	GE
N	Gradient (%):	0.0	ma
N	Pool: 0 Riffle: 0 Run: 0 Other: 0		
N	% Side Channel:		
N	% Debris Area:	0	GE
	%Stable:	0	GE

Specific Data

0.0	0.0	0.0	0.0	0.0	0.0	
0.0	0.0	0.0	0.0	0.0	0.0	
0	0	0	0	0	0	
0	0	0	0	0	0	

Cover

Cover Total % : 0

Pool	LOD	Bldr	In Veg	O Veg	Ctbnk
0	0	0	0	0	0

N Crown Closure % : 0 Aspect :

Bed Material

Fines	Clay, silt, sand (<2mm):	0	0	
Gravels	Small (2-16mm):	0	0	
	Large (16-64mm):		0	
Larges	Sm. cobble (64-128mm):	0	0	
	Lge cobble (128-256mm):		0	
	Bldr cobble (>256mm):		0	
Bedrock		0	0	

D90 (cm): 0 Compaction:

Discharge

N	Wetted Width (m) :	0.0
N	Mean Depth (m) :	0.0
N	Mean Velocity (m/s) :	0.00
N	Discharge (m3/s) :	

Banks

Height (m): 0.0

% Unstable: 0

Fines ☐ Gravels ☐ Larges ☐ Bedrock ☐

Confinement: N/A

Valley : Channel Ratio N/A

Stage: Dry Flood Signs Ht(m): 0

Bars (%): 0 pH: 0.0 Braided: N

Water Temp. (°C): 0.0 02 (ppm): 0.0

Turb. (cm): 0 Cond. (µmhos): 0

Reach Symbol

(Fish)

NF

0 E 0.0 | 0000

(Width, Valley: Channel, Slope) (Bed Material)

Obstructions

C	Height (m)	Type	Location

Fish Summary

C	Species	Number	Size Range (mm)	Life Phase	Use 1	Use 2	Use 3	Method
	NF			NA				NA

Comments

C1 NC

C2 The side slopes were not measured at this site.

C3 No fisheries sensitive zones were noted at this site.

C4 This site was not electrofished.

C5 Lat N 55 35'18" 126 43'34"

C6 No additional bank texture information.

C7 Water quality was not evaluated at this site.

C8 No fish habitat was observed at this site.

Photo #: T-2-17, 1996/07/30
Site #: T33, Alders.

5.8 Fish Age, Growth and Other Observations

Fish catch data were compiled for all records that contained a discrete size measurement. These data were summarised and plotted in histograms by species, the results are presented in Figures 2a through 2d. Species caught in Working Unit 2 included rainbow trout, Dolly Varden, cutthroat trout, and sockeye. The following table summarises the numbers of fish caught in each size class.

Table 8. Catch Data by Species and by Size Class (mm) in Working Unit 2

	RB	DV	CT	SK
0-25	1			
25-50	6	1		
50-75	2	3	1	
75-100	3	4	3	
100-125		2	1	
125-150	1	2		
150-175	1			
175-200				
200-225				
225-250				
250-275				
275-300				
300-325				
325-350				
350-375				
375-400				
400-425				
425-450				10
450-475				
475-500				
>500				

5.9 Rare and Endangered Species Summary

No rare or endangered species were noted by crews working in this area.

5.10 Wildlife Observations

Moose, bear and beaver sign, as well some loons were noted in this unit. Table 7 summarizes the wildlife and wildlife signs observed by Triton crews in working unit 2. Beaver dams and ponds were the most commonly seen wildlife signs in this working unit.

5.11 Recommendations for Follow Up Sampling

A number of the sites in this working unit were classified as fish bearing despite the fact that no fish were caught in the sampling areas. Typically, these sites had suitable fish habitat and/or no observed barriers to fish migration. Future sampling is strongly recommended for the large tributaries sampled at J46, J37, J38, J35. These sample sites are located on sizable tributaries with potential gradient and confinement problems near the mouths. A list of all sites in working unit 2 for which future sampling is recommended is provided in Table 6.

6.0 CONCLUSION AND RECOMMENDATIONS

The limitations to fish distribution in this working unit are associated with the steep side slopes of the Babine River. Some of the tributaries sampled in this unit have steep gradient and are sometimes quite confined near the mouth, making fish use unlikely or impossible. Compounding this problem is a lack of medium to large sized lakes in some of these systems that could support resident populations.

Since many of the higher reaches of the tributaries have reasonable gradient, it is recommended that a select number of unsampled tributaries remaining in this unit be surveyed from the mouth to identify barriers and suitable habitat outside of the mainstem.

7.0 REFERENCES

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Province of British Columbia. 1996. Resource Inventory Committee (RIC): Fish Sampling Manual (Originally called Fish Collection, Preservation, Measurement and Enumeration Manual, RIC Draft 1994).

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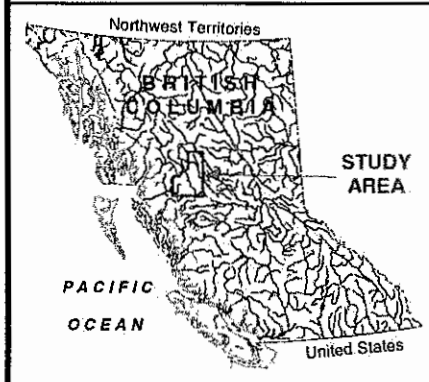
Saimoto, R.S. 1996. Literature Review for Stream Inventory in the Bulkley Forest District.

LEGEND

- River / Stream
- Lakes
- Highway
- Railway
- 093M.000 UTM Mapsheet
- Watershed Boundary
- Unit Boundaries (by mapsheet)
- Study Area (by mapsheet)



INSET MAP

BABINE RIVER WATERSHED

KISPIOX RIVER WATERSHED

BULKLEY RIVER WATERSHED

BABINE LAKE WATERSHED

BABINE RIVER WATERSHED

UNIT 2

093M.095 093M.096 093M.085 093M.086 093M.087 093M.075 093M.076 093M.077 093M.067 093M.068 093M.066 093M.055 093M.056 093M.057 093M.058 093M.045 093M.046 093M.047 093M.048 093M.035 093M.036 093M.037 093M.038 093M.024 093M.026 093M.027 093M.028 093M.025 093M.013 093M.014 093M.015 093M.016 093M.017 093M.018 093M.002 093M.003 093M.004 093M.005 093M.006 093M.007 093M.008 103I.100 093L.091 093L.092 093L.093 093L.095 093L.096 093L.097 093L.098 093L.094 103I.090 093L.081 093L.082 093L.083 093L.084 093L.085 093L.086 093L.087 093L.088 103I.080 093L.071 093L.072 093L.073 093L.074 093L.075 093L.076 093L.077 093L.061 093L.062 093L.063 093L.064 093L.065 093L.066 093L.067 093L.052 093L.053 093L.054 093L.055 093L.056 093L.057 093L.042 093L.043 093L.044 093L.045

Skeena River; Kispiox River; Kispiox River; Nilkitkwa River; Babine River; Nichyeskwa Cr.; Shegunia River; Driftwood River; Suskwa River; Harold Price Cr.; Kitwanbool River; Skeena River; Bulkley River; Blunt Cr.; Babine Lake; Kitseguecla River; Kitsuns Cr.; Red Canyon Cr.; Sem Cr.; Telkwa River; Telkwa River; Zymoetz River; Clore River; Kitnayakwa River; Fulton River

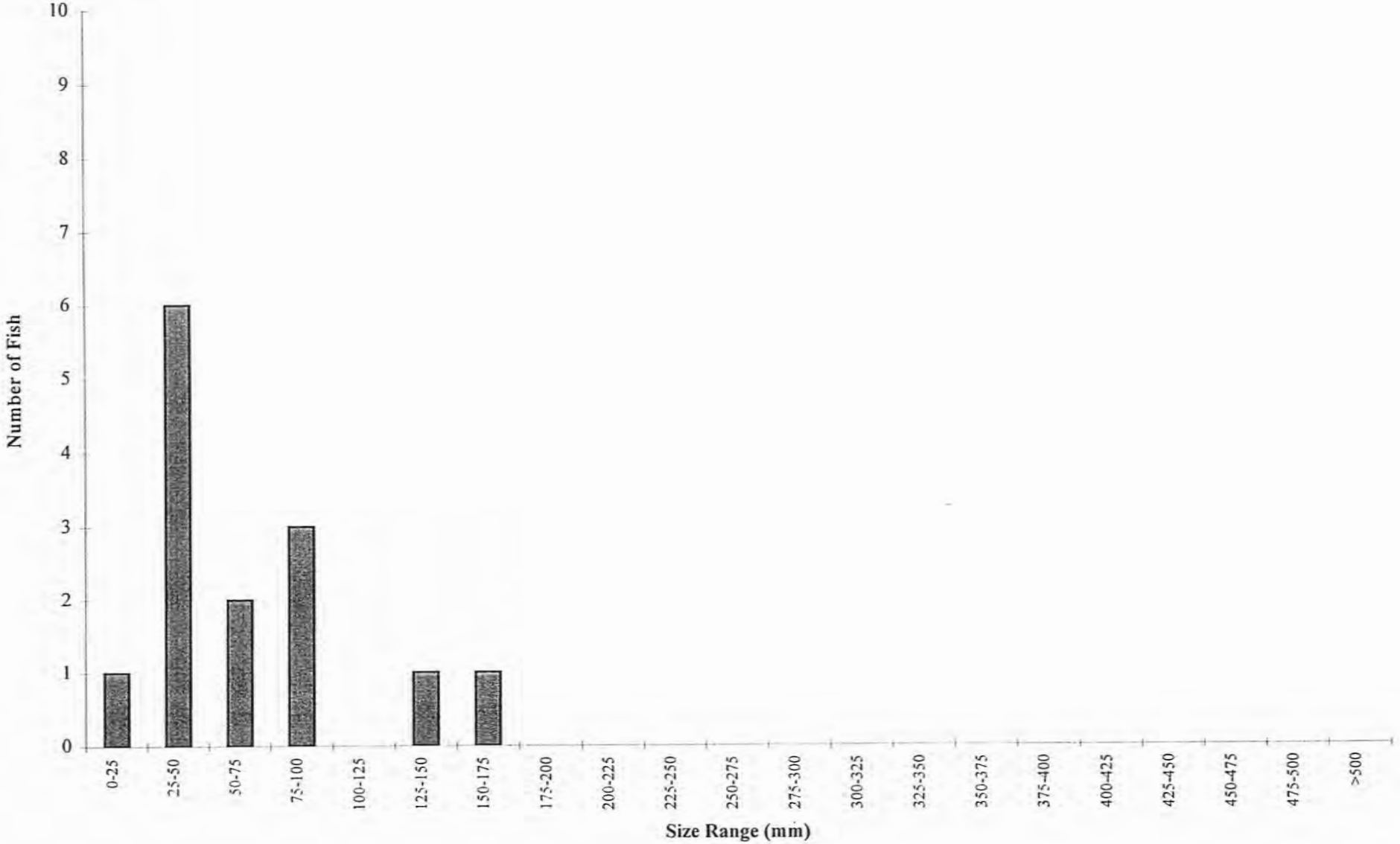
HAZELTON; SOUTH HAZELTON; SMITHERS; TELKWA; HOUSTON

FISH AND FISH HABITAT INVENTORY IN THE BULKLEY FOREST DISTRICT	Sources : 1 : 20,000 TRIM B.C. Watershed Atlas 1 : 50,000 M.O.E.L.P	5 0 5 10 15 20 Kilometers 1 : 500,000
UNIT 2 OVERVIEW MAP Project ID : 2565	Projection : UTM Zone 9 Datum : NAD83 Created : February, 1998	TRITON Environmental Consultants Ltd.

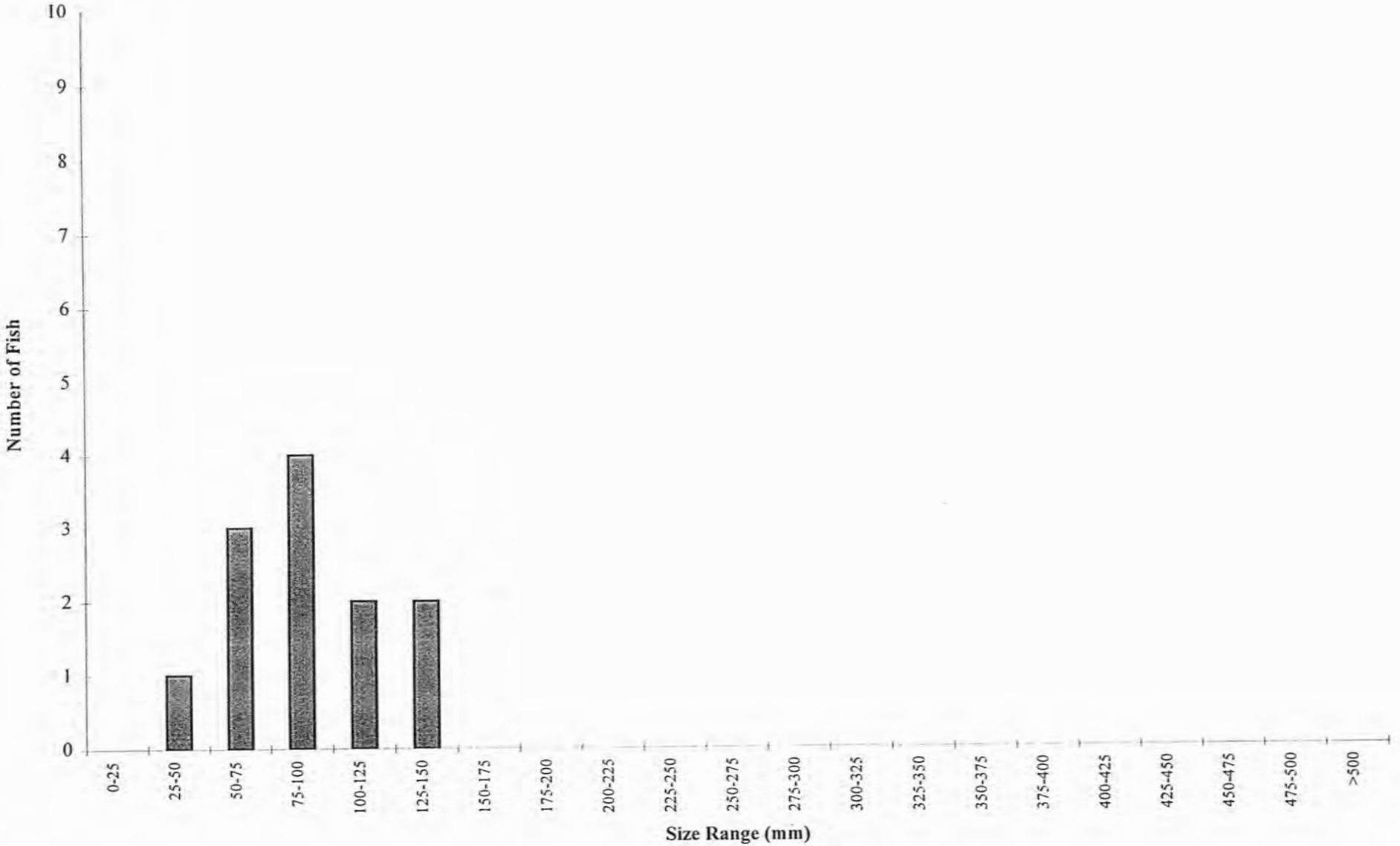
FIGURE 1

MAp 256506223

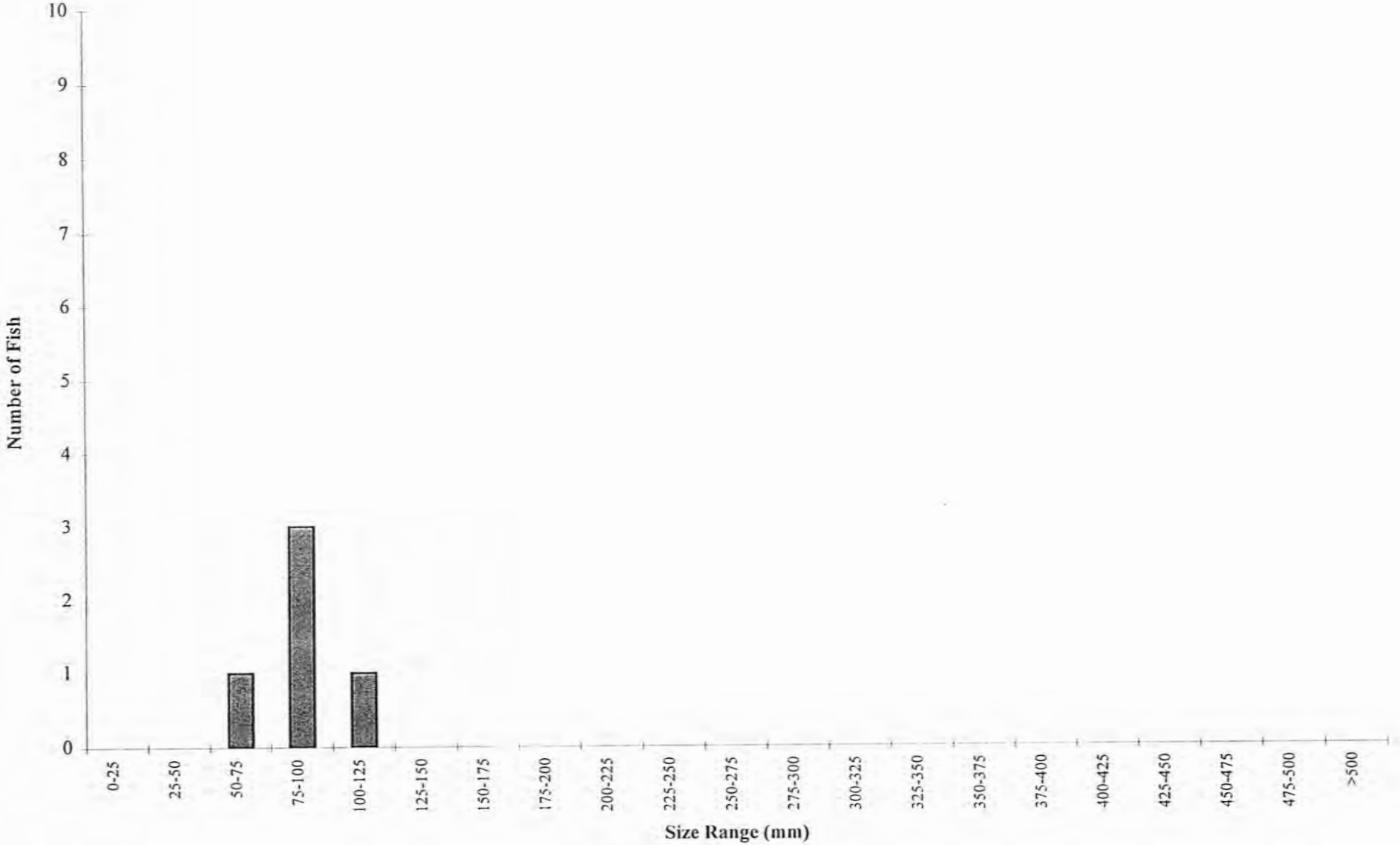
Working Unit 2 - Rainbow Trout



Working Unit 2 - Dolly Varden



Working Unit 2 - Cutthroat Trout



Working Unit 2 - Sockeye

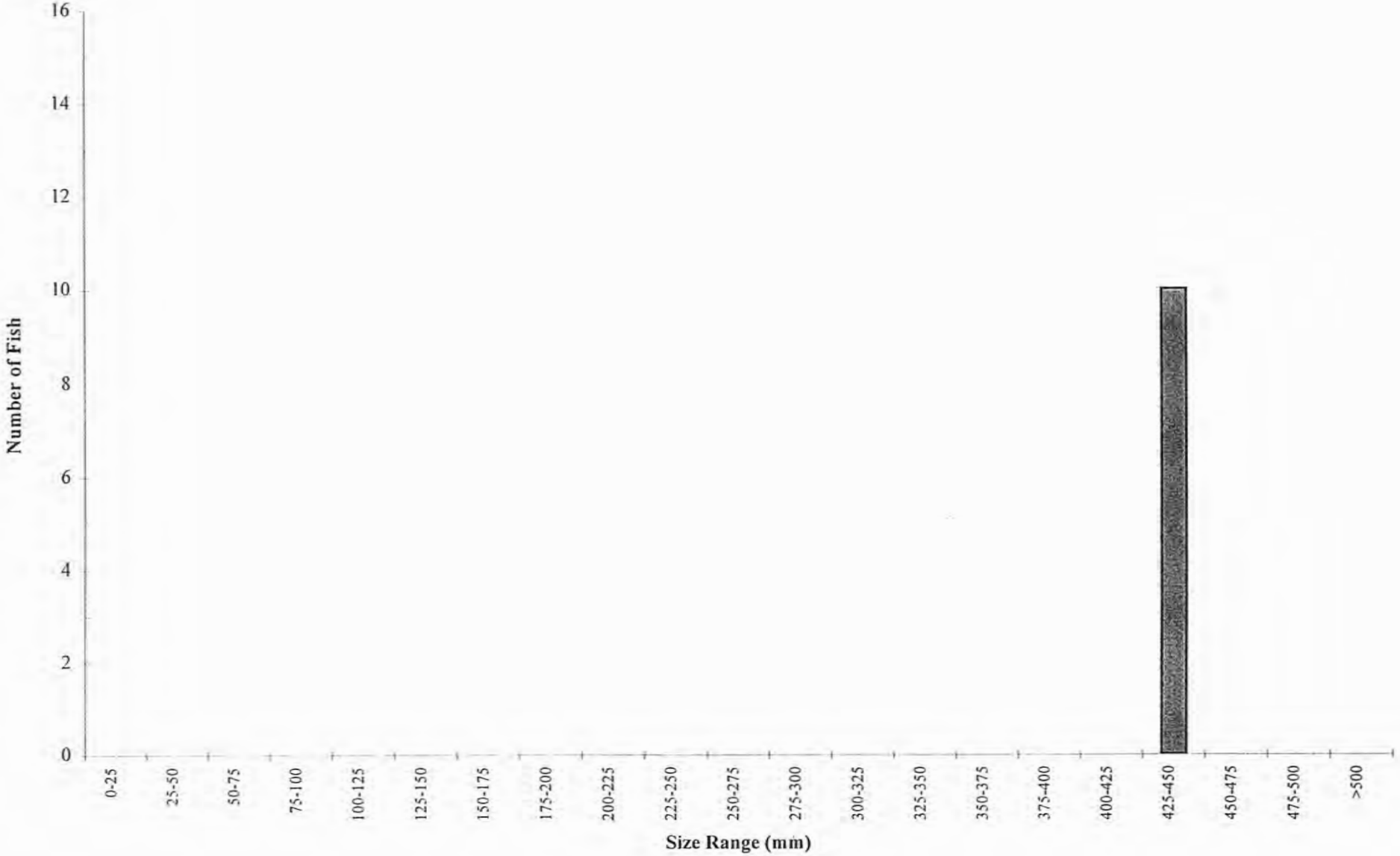


Table 1. Riparian Management Areas and Stream Classification

	Channel Width(m)	Reserve Zone	Management Zone Width	Total RMA Width
Fish Bearing				
S1	>20.0	50	20	70
S2	>5.0-20.0	30	20	50
S3	1.5-5.0	20	20	40
S4	<1.5	0	30	30
Non Fish Bearing				
S5	>=3.0	0	30	30
S6	<3.0	0	20	20

Table 2. Summary of Water Quality Data Collected in Working Unit 2 in 1996 and 1997

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	pH	Temp. (C)	Conductivity (umhos/cm)
019-9500-000-000-000-000-000-000-	Trib. to Babine R.	E289, Unit 2	93 M 067	9 .6397 .61654	1	09/11/97	TEC	6.81	8.00	30.00
016-9000-000-000-000-000-000-000-	Trib. to Babine R.	E291, Unit 2	93 M 057	9 .6401 .61631	2	09/11/97	TEC	6.02	9.00	20.00
016-6600-000-000-000-000-000-000-	Trib. to Babine R.	E94, Unit 2	93 M 057	9 .6396 .61570	2	07/20/97	TEC	7.50	6.00	30.00
480-3352-000-000-000-000-000-000-	Trib. to Babine R.	HASLETT 13, Unit 2	93 M 057	9 .6396 . 61545	1	07/29/96	TEC		14.00	
480-3352-000-000-000-000-000-000-	Trib. to Babine R.	HASLETT 14, Unit 2	93 M 057	9 .6405 . 61539	5	07/29/96	TEC		12.00	
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	HASLETT 15, Unit 2	93 M 057	9 .6408 .61539	4	07/29/96	TEC		15.00	
017-1500-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 33 , Unit 2	93 M 056	9 .6345 .61571	4	07/29/96	TEC		14.00	
173-4000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 34, Unit 2	93 M 056	9 .6343 .61571	1	07/29/96	TEC		8.50	
017-1500-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 35, Unit 2	93 M 056	9 .6343 .61567	5	07/29/96	TEC	7.29	8.00	100.00
017-2300-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 36, Unit 2	93 M 056	9 .6351 .61572	1	07/29/96	TEC		18.00	
182-7000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 37, Unit 2	93 M 056	9 .6310 . 61600	2	07/29/96	TEC	6.95	8.00	50.00
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 38, Unit 2	93 M 056	9 .6311 .61566	1	07/29/96	TEC		14.00	
480-3352-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 39, Unit 2	93 M 056	9 .6369 .61534	5	07/30/96	TEC		14.00	
016-9100-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 40, Unit 2	93 M 056	9 .6382 .61618	2	07/30/96	TEC		14.00	
017-1000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 41, Unit 2	93 M 056	9 .6373 .61576	1	07/30/96	TEC		16.00	
018-2800-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 46, Unit 2	93 M 056	9 . 6293 . 61580	4	07/29/96	TEC		12.00	
016-9400-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 55, Unit 2	93 M 056	9 .6360 .61602	1	08/07/96	TEC	7.00	10.00	
016-9500-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 56, Unit 2	93 M 056	9 .6361 . 61596	1	08/07/96	TEC	7.69	12.00	100.00
016-9300-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 57, Unit 2	93 M 056	9 .6370 .61592	2	08/07/96	TEC			
017-0400-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 58, Unit 2	93 M 056	9 . 6372 .61593	1	08/07/96	TEC		14.00	
017-4700-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 60, Unit 2	93 M 056	9 .6347 .61621	2	08/07/96	TEC			
017-4900-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 61, Unit 2	93 M 056	9 .6335 .61612	2	08/07/96	TEC			
081-9300-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 29, Unit 2	93 M 047	9 .6416 .61509	1	07/29/96	TEC		10.00	
081-7200-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 30, Unit 2	93 M 047	9 .6419 .61501	1	07/29/96	TEC		13.00	
081-7300-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 31, Unit 2	93 M O47	9 .6420 .61491	1	07/29/96	TEC		14.00	
081-6300-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 32, Unit 2	93 M 047	9 .6434 .61478	1	07/29/96	TEC		14.00	
018-3600-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 33, Unit 2	93 M 066	9 . 6344 . 61668	2	07/29/96	TEC	6.69	5.00	80.00
017-4100-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 34, Unit 2	93 M 066	9 . 6362 . 61627	3	07/29/96	TEC	5.80	5.00	30.00
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 35, Unit 2	93 M 066	9 .6362 .61680	1	07/29/96	TEC	6.96	5.00	50.00
480-3352-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 36, Unit 2	93 M 057	9. 6412 . 61543	2	07/30/96	TEC		14.00	
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 37, Unit 2	93 M 057	9 . 6413 . 61552	1	07/30/96	TEC		12.50	
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	RYAN 38, Unit 2	93 M 057	9 .6450 .61539	1	07/30/96	TEC		16.00	
016-9100-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 25, Unit 2	93 M 056	9 .6385 .61630	2	07/29/96	TEC		12.00	
016-9000-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 26, Unit 2	93 M 057	9. 6383 . 61612	2	07/29/96	TEC		14.00	
016-8900-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 27, Unit 2	93 M 057	9 . 6395 . 61605	1	07/29/96	TEC		16.00	

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	pH	Temp. (C)	Conductivity (umhos/cm)
016-7600-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 28, Unit 2	93 M 057	9 .6403 .61607	2	07/29/96	TEC		14.00	
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 31, Unit 2	93 M 057	9 .6444 .61612	4	07/29/96	TEC		21.00	
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 32, Unit 2	93 M 057	9 .6459 . 61572	3	07/29/96	TEC		15.00	
480-0000-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 34, Unit 2	93 M 057	9 .6472 . 61539	1	07/30/96	TEC		11.50	
016-8900-000-000-000-000-000-000-	Trib. to Babine R.	TERRY 36, Unit 2	93 M 067	9 .6415 .61658	1	07/30/96	TEC		12.50	
016-5200-000-000-000-000-000-000-	Trib to Babine R.	Y46, Unit 2	93 M 057	9 .6433 .61579	1	07/17/97	TEC	6.90	10.00	40.00
016-7000-000-000-000-000-000-000-	Trib to Babine R.	Y47, Unit 2	93 M 057	9 .6425 .61583	3	07/17/97	TEC	7.10	14.00	40.00
016-7200-000-000-000-000-000-000-	Trib to Babine R.	Y48, Unit 2	93 M 057	9 .6408 .61589	1	07/17/97	TEC	7.40	12.00	70.00
017-4100-000-000-000-000-000-000-	Trib to Babine R.	Y61, Unit 2	93 M 056	9 .6361 .61626	2	07/20/97	TEC	6.70	15.00	30.00
016-7300-000-000-000-000-000-000-	Trib. to Babine R.	Z1, Unit 2	93 M 057	9 .64161 . 61593	2	07/08/97	TEC	6.80	10.00	20.00
016-7200-000-000-000-000-000-000-	Trib. to Babine R.	Z2, Unit 2	93 M 057	9 .642143.6158687	1	07/08/97	TEC	6.70	10.50	30.00
081-5900-000-000-000-000-000-000-	Trib. to Babine R.	Z5, Unit 2	93 M 047	9 .64492 .6146673	2	07/08/97	TEC	6.30	12.50	30.00
081-8500-000-000-000-000-000-000-	Trib to Babine R.	Z53, Unit 2	93 M 047	9 .64514 .615088	1	07/19/97	TEC	7.50	8.00	130.00
081-8200-000-000-000-000-000-000-	Trib to Babine R.	Z54, Unit 2	93 M 047	9 .6446 .615024	2	07/19/97	TEC			
081-7700-000-000-000-000-000-000-	Trib to Babine R.	Z55, Unit 2	93 M 047	9 .641573.6151426	3	07/19/97	TEC	6.60		50.00
081-8900-000-000-000-000-000-000-	Trib to Babine R.	Z56, Unit 2	93 M 047	9 .6432 .615194	1	07/19/97	TEC		6.00	

Table 3. Summary of Barriers Observed in Working Unit 2 in 1996

Watershed Code	Stream "Local"	Location	TRIM Number	UTM	Reach Number	Survey Date	Agency	Height (m)	Type	Distance from the Mouth (km)
017-1000-000-000-000-	Trib to Babine R	JULIE 41, Unit 2	93 M 056	9 .6373 .61576	1	07/30/96	TEC	5.00	F	0.50
016-9400-000-000-000-	Trib to Babine R	JULIE 55, Unit 2	93 M 056	9 .6360 .61602	1	08/07/96	TEC	5.00	F	0.50
016-9500-000-000-000-	Trib to Babine R	JULIE 56, Unit 2	93 M 056	9 .6361 . 61596	1	08/07/96	TEC	5.00	F	0.50
016-9300-000-000-000-	Trib to Babine R	JULIE 57, Unit 2	93 M 056	9 .6370 .61592	2	08/07/96	TEC	5.00	F	0.50
017-0400-000-000-000-	Trib to Babine R.	JULIE 58, Unit 2	93 M 056	9 . 6372 .61593	1	08/07/96	TEC	5.00	F	0.50
017-4100-000-000-000-	Trib to Babine R	RYAN 34, Unit 2	93 M 066	9 . 6362 . 61627	3	07/29/96	TEC	4.00	F	4.10

Table 4. Summary of Site Data Collected in Working Unit 2 in 1996 and 1997

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	Average Channel Width (m)	Gradient (%)	Fish Species	Proposed Stream Class	Fishing Method
019-9500-000-000-	Trib. to Babine R.	E289, Unit 2	93 M 067	9 .6397 .61654	1	09/11/97	TEC	1.09	6.00	NF	S6	EL
016-9000-000-000-	Trib. to Babine R.	E291, Unit 2	93 M 057	9 .6401 .61631	2	09/11/97	TEC	1.52	3.00	(DV) (RB)	S3	EL
016-6600-000-000-	Trib. to Babine R.	E94, Unit 2	93 M 057	9 .6396 .61570	2	07/20/97	TEC	1.60	4.00	(DV)	S3	EL
480-3352-000-000-	Trib. to Babine R.	HASLETT 13, Unit 2	93 M 057	9 .6396 . 61545	1	07/29/96	TEC	1.18	1.00	(RB)	S4	MT
480-3352-000-000-	Trib. to Babine R.	HASLETT 14, Unit 2	93 M 057	9 .6405 . 61539	5	07/29/96	TEC	2.85	5.00	CT, RB	S3	EL
480-0000-000-000-	Trib. to Babine R.	HASLETT 15, Unit 2	93 M 057	9 .6408 .61539	4	07/29/96	TEC	3.87	6.00	DV	S3	EL
017-1500-000-000-	Trib. to Babine R.	JULIE 33 , Unit 2	93 M 056	9 .6345 .61571	4	07/29/96	TEC	1.56	4.00	(DV)	S3	EL
173-4000-000-000-	Trib. to Babine R.	JULIE 34, Unit 2	93 M 056	9 .6343 .61571	1	07/29/96	TEC	0.70	17.00	NF	S6	EL
017-1500-000-000-	Trib. to Babine R.	JULIE 35, Unit 2	93 M 056	9 .6343 .61567	5	07/29/96	TEC	2.22	1.00	(RB)	S3	EL
017-2300-000-000-	Trib. to Babine R.	JULIE 36, Unit 2	93 M 056	9 .6351 .61572	1	07/29/96	TEC	2.96	1.00	(RB)	S3	EL
182-7000-000-000-	Trib. to Babine R.	JULIE 37, Unit 2	93 M 056	9 .6310 . 61600	2	07/29/96	TEC	5.00	6.00	(DV)	S2	VO
480-0000-000-000-	Trib. to Babine R.	JULIE 38, Unit 2	93 M 056	9 .6311 .61566	1	07/29/96	TEC	2.64	1.00	(RB)	S3	VO
480-3352-000-000-	Trib. to Babine R.	JULIE 39, Unit 2	93 M 056	9 .6369 .61534	5	07/30/96	TEC	3.31	0.00	DV	S3	MT
016-9100-000-000-	Trib. to Babine R.	JULIE 40, Unit 2	93 M 056	9 .6382 .61618	2	07/30/96	TEC	3.07	3.00	RB	S3	EL
017-1000-000-000-	Trib. to Babine R.	JULIE 41, Unit 2	93 M 056	9 .6373 .61576	1	07/30/96	TEC	3.25	0.00	NF	S5	MT
018-2800-000-000-	Trib. to Babine R.	JULIE 46, Unit 2	93 M 056	9 . 6293 . 61580	4	07/29/96	TEC	1.36	0.50	(DV)	S4	EL
016-9400-000-000-	Trib. to Babine R.	JULIE 55, Unit 2	93 M 056	9 .6360 .61602	1	08/07/96	TEC	1.32	4.00	NF	S6	EL
016-9500-000-000-	Trib. to Babine R.	JULIE 56, Unit 2	93 M 056	9 .6361 . 61596	1	08/07/96	TEC	3.10	1.00	NF	S5	EL
016-9300-000-000-	Trib. to Babine R.	JULIE 57, Unit 2	93 M 056	9 .6370 .61592	2	08/07/96	TEC	4.00	0.00	NF	S5	NA
017-0400-000-000-	Trib. to Babine R.	JULIE 58, Unit 2	93 M 056	9 . 6372 .61593	1	08/07/96	TEC	1.14	0.00	NF	S6	VO
017-4700-000-000-	Trib. to Babine R.	JULIE 60, Unit 2	93 M 056	9 .6347 .61621	2	08/07/96	TEC	1.00	2.00	NF	S6	VO
017-4900-000-000-	Trib. to Babine R.	JULIE 61, Unit 2	93 M 056	9 .6335 .61612	2	08/07/96	TEC	1.50	5.00	(RB)	S3	VO
081-9300-000-000-	Trib. to Babine R.	RYAN 29, Unit 2	93 M 047	9 .6416 .61509	1	07/29/96	TEC	0.62	1.00	(RB)	S4	EL
081-7200-000-000-	Trib. to Babine R.	RYAN 30, Unit 2	93 M 047	9 .6419 .61501	1	07/29/96	TEC	2.10	4.00	RB	S3	EL
081-7300-000-000-	Trib. to Babine R.	RYAN 31, Unit 2	93 M 047	9 .6420 .61491	1	07/29/96	TEC	1.80	4.00	RB	S3	EL
081-6300-000-000-	Trib. to Babine R.	RYAN 32, Unit 2	93 M 047	9 .6434 .61478	1	07/29/96	TEC	0.80	0.50	(RB)	S4	EL
018-3600-000-000-	Trib. to Babine R.	RYAN 33, Unit 2	93 M 066	9 . 6344 . 61668	2	07/29/96	TEC	2.00	1.00	(RB)	S3	EL
017-4100-000-000-	Trib. to Babine R.	RYAN 34, Unit 2	93 M 066	9 . 6362 . 61627	3	07/29/96	TEC	2.80	5.00	NF	S6	EL
480-0000-000-000-	Trib. to Babine R.	RYAN 35, Unit 2	93 M 066	9 .6362 .61680	1	07/29/96	TEC	2.90	6.00	SK	S3	VO
480-3352-000-000-	Trib. to Babine R.	RYAN 36, Unit 2	93 M 057	9. 6412 . 61543	2	07/30/96	TEC	3.00	1.00	RB	S3	MT
480-0000-000-000-	Trib. to Babine R.	RYAN 37, Unit 2	93 M 057	9 . 6413 . 61552	1	07/30/96	TEC	0.68	2.00	(DV)	S4	VO
480-0000-000-000-	Trib. to Babine R.	RYAN 38, Unit 2	93 M 057	9 .6450 .61539	1	07/30/96	TEC	1.80	1.00	DV	S3	MT
016-9100-000-000-	Trib. to Babine R.	TERRY 25, Unit 2	93 M 056	9 .6385 .61630	2	07/29/96	TEC	2.87	3.00	CT	S3	EL
016-9000-000-000-	Trib. to Babine R.	TERRY 26, Unit 2	93 M 057	9. 6383 . 61612	2	07/29/96	TEC	2.82	3.00	(CT)	S3	EL
016-8900-000-000-	Trib. to Babine R.	TERRY 27, Unit 2	93 M 057	9 . 6395 . 61605	1	07/29/96	TEC	2.66	2.00	(CT)	S3	EL

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	Average Channel Width (m)	Gradient (%)	Fish Species	Proposed Stream Class	Fishing Method
016-7600-000-000-	Trib. to Babine R.	TERRY 28, Unit 2	93 M 057	9 .6403 .61607	2	07/29/96	TEC	1.90	1.50	(DV)	S3	EL
480-0000-000-000-	Trib. to Babine R.	TERRY 31, Unit 2	93 M 057	9 .6444 .61612	4	07/29/96	TEC	1.64	3.00	RB, CT	S3	EL
480-0000-000-000-	Trib. to Babine R.	TERRY 32, Unit 2	93 M 057	9 .6459 . 61572	3	07/29/96	TEC	1.94	3.50	DV	S3	EL
480-0000-000-000-	Trib. to Babine R.	TERRY 34, Unit 2	93 M 057	9 .6472 . 61539	1	07/30/96	TEC	0.71	0.00	NF	S6	VO
016-8900-000-000-	Trib. to Babine R.	TERRY 36, Unit 2	93 M 067	9 .6415 .61658	1	07/30/96	TEC	1.79	2.00	(DV)	S3	EL
016-5200-000-000-	Trib. to Babine R.	Y46, Unit 2	93 M 057	9 .6433 .61579	1	07/17/97	TEC	1.43	1.00	(DV)	S4.	EL
016-7000-000-000-	Trib. to Babine R.	Y47, Unit 2	93 M 057	9 .6425 .61583	3	07/17/97	TEC	1.12	3.00	(DV)	S4.	EL
016-7200-000-000-	Trib. to Babine R.	Y48, Unit 2	93 M 057	9 .6408 .61589	1	07/17/97	TEC	1.88	1.00	(DV)	S3.	EL
017-4100-000-000-	Trib. to Babine R.	Y61, Unit 2	93 M 056	9 .6361 .61626	2	07/20/97	TEC	4.25	2.00	(DV)	S3.	EL
016-7300-000-000-	Trib. to Babine R.	Z1, Unit 2	93 M 057	9 .64161 . 61593	2	07/08/97	TEC	1.40	4.00	NF	S6	EL
016-7200-000-000-	Trib. to Babine R.	Z2, Unit 2	93 M 057	9 .642143.6158687	1	07/08/97	TEC	0.80	14.00	NF	S6	EL
081-5900-000-000-	Trib. to Babine R.	Z5, Unit 2	93 M 047	9 .64492 .6146673	2	07/08/97	TEC	1.67	0.50	NF	S6	VO
081-8500-000-000-	Trib. to Babine R.	Z53, Unit 2	93 M 047	9 .64514 .615088	1	07/19/97	TEC	1.63	0.00	NF	S6.	EL
081-8200-000-000-	Trib. to Babine R.	Z54, Unit 2	93 M 047	9 .6446 .615024	2	07/19/97	TEC	2.82	2.00	NF	S6.	EL
081-7700-000-000-	Trib. to Babine R.	Z55, Unit 2	93 M 047	9 .641573.6151426	3	07/19/97	TEC	0.77	0.50	(RB)	S4.	EL
081-8900-000-000-	Trib. to Babine R.	Z56, Unit 2	93 M 047	9 .6432 .615194	1	07/19/97	TEC	4.80	0.00	RB	S3.	EL
016-9100-000-000-	Not a creek	E290, Unit 2	93 M 067	9 .6389 .61655	0	09/11/97	TEC	0.00	5.00	NF	NC	NA
480-0000-000-000-	Not a creek	TERRY 29, Unit 2	93 M 057	9 .6411 .61616	0	07/29/96	TEC	0.00	0.00	NF	NC	NA
480-0000-000-000-	Not a creek	TERRY 30, Unit 2	93 M 057	9 .6437 .61626	0	07/29/96	TEC	0.00	0.00	NF	NC	NA
016-7600-000-000-	Not a creek	TERRY 33, Unit 2	93 M 057	9 .6432 .61625	0	07/30/96	TEC	0.00	0.00	NF	NC	NA
480-0000-000-000-	Not a creek	TERRY 35, Unit 2	93 M 057	9 .6476 .61549	0	07/30/96	TEC	0.00	0.00	NF	NC	NA

Table 5. Summary of Non Fish Bearing Classifications Established in Working Unit 2 in 1996 and 1997

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	Proposed Stream Class	Fishing Effort	Rationale
173-4000-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 34, Unit 2	93 M 056	9 .6343 .61571	1	07/29/96	TEC	S6	The electroshocking effort, using a Smithroot 12 B POW model was 200s over 150 meters.	This tributary has been classified as non fish bearing because it lacks spawning, rearing and overwintering habitat.
017-1000-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 41, Unit 2	93 M 056	9 .6373 .61576	1	07/30/96	TEC	S5	The electroshocking effort, using a Smithroot 12 B POW model, was 400 seconds over 100 meters. One trap, with a 24 hr soak time, was set.	This reach has been classified as non fish bearing because it is located above a 5 meter falls, which would prevent fish passage upstream and it lacks overwintering habitat.
016-9400-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 55, Unit 2	93 M 056	9 .6360 .61602	1	08/07/96	TEC	S6	The electroshocking effort, using a Smithroot 12 B POW model, was 645 seconds over 142 meters.	This tributary has been classified as non fish bearing because it is located above a 5 meter falls on the main tributary and has no overwintering habitat. A resident population is unlikely in this stream.
016-9500-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 56, Unit 2	93 M 056	9 .6361 . 61596	1	08/07/96	TEC	S5	The electroshocking effort, using a Smithroot 12 B POW model, was 1224 seconds over 150 meters.	This reach has been classified as non fish bearing because it is located above a 5 meter falls and lacks overwintering, spawning and rearing habitat.
016-9300-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 57, Unit 2	93 M 056	9 .6370 .61592	2	08/07/96	TEC	S5	This dry site was not electrofished.	This reach has been classified as non fish bearing because it is located above an impassable 5 meter falls and lacks overwintering, spawning and rearing habitat.
017-0400-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 58, Unit 2	93 M 056	9 . 6372 .61593	1	08/07/96	TEC	S6	This site was not electrofished.	This reach has been classified as non fish bearing because it is located above an impassable 5 meter falls and lacks overwintering, spawning and rearing habitat.
017-4700-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	JULIE 60, Unit 2	93 M 056	9 .6347 .61621	2	08/07/96	TEC	S6	This site was not electrofished.	This reach has been classified as non fish bearing because of steep gradient at the mouth which would prevent fish passage upstream.
017-4100-000-000-000-000-000-000-000-000-000-000	Trib. to Babine R.	RYAN 34, Unit 2	93 M 066	9 . 6362 . 61627	3	07/29/96	TEC	S6	The electroshocking effort, using a Smithroot 12 B POW model was 150 seconds over 100 meters.	This reach has been classified as non fish bearing because it is located above a 5 meter falls which would prevent fish passage upstream. Numerous cascades also occur in the reach below. No evidence of a resident population above the falls was found.
480-0000-000-000-000-000-000-000-000-000-000-000	Trib. to Babine R.	TERRY 34, Unit 2	93 M 057	9 .6472 . 61539	1	07/30/96	TEC	S6	This flow was too low at the time of sampling to minnow trap or electrofish.	This reach was classified as non fish bearing because it lacks a defined channel.

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	Proposed Stream Class	Fishing Effort	Rationale
019-9500-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	E289, Unit 2	93 M 067	9 .6397 .61654	1	09/11/97	TEC	S6	The electroshocking effort, using a Smithroot 12 B POW model set at I-5-400V, was 196 seconds over 100 meters.	The substrate is unsuitable for spawning. This reach is narrow and moves through an alder swale, no suitable habitat was observed.
016-7300-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	Z1, Unit 2	93 M 057	9 .64161 . 61593	2	07/08/97	TEC	S6	The electroshocking effort, using a Smithroot Type VII model set at 60hz/6ms, was 200 seconds over 100 meters.	This site does not have suitable spawning or overwintering habitat. The rearing habitat is marginal at best. Evidence of sedimentation was noted.
016-7200-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	Z2, Unit 2	93 M 057	9 .642143.6158687	1	07/08/97	TEC	S6	This site was not electrofished as the stream is too small and shallow in this reach for effective electrofishing.	The channel is discontinuous in the sampling area and has no rearing or overwintering habitat. The lack of suitable habitat combined with somewhat steep gradient make the use of this reach by fish unlikely.
081-5900-000-000-000-000-000-000-000-000-000-	Trib. to Babine R.	Z5, Unit 2	93 M 047	9 .64492 .6146673	2	07/08/97	TEC	S6	This small stream was not electrofished as it was too small and shallow to effectively shock.	This site has no spawning habitat. The stream is too small in this reach to accommodate adult migration. It could be accessed by fry, but there is a low probability of fish use.
081-8500-000-000-000-000-000-000-000-000-000-	Trib to Babine R.	Z53, Unit 2	93 M 047	9 .64514 .615088	1	07/19/97	TEC	S6	The electroshocking effort, using a Smithroot 12B POW model set at I, 5, 200V, was 60 seconds over 50 meters.	This is a small channel in a large swamp with no real fish habitat. There were bubbles observed in the stream.
081-8200-000-000-000-000-000-000-000-000-000-	Trib to Babine R.	Z54, Unit 2	93 M 047	9 .6446 .615024	2	07/19/97	TEC	S6	The electroshocking effort, using a Smithroot 12 B POW set at I, 5, 200V, was 152 seconds over 100 meters.	This reach has been classified as non fish bearing because it is located above cascade barriers and no evidence of a resident population of fish was found.

Table 6. Summary of Sites for Which Future Sampling is Recommend in Working Unit 2

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	Average Channel Width (m)	Gradient (%)	Fish Species	Proposed Stream Class	Fishing Method
016-9000-000-000-000-	Trib. to Babine R.	E291, Unit 2	93 M 057	9 .6401	2	09/11/97	TEC	1.52	3.00	(DV) (RB)	S3	EL
016-6600-000-000-000-	Trib. to Babine R.	E94, Unit 2	93 M 057	9 .6396	2	07/20/97	TEC	1.60	4.00	(DV)	S3	EL
480-3352-000-000-000-	Trib. to Babine R.	HASLETT 13, Unit 2	93 M 057	9 .6396 .	1	07/29/96	TEC	1.18	1.00	(RB)	S4	MT
017-1500-000-000-000-	Trib. to Babine R.	JULIE 33 , Unit 2	93 M 056	9 .6345	4	07/29/96	TEC	1.56	4.00	(DV)	S3	EL
017-1500-000-000-000-	Trib. to Babine R.	JULIE 35, Unit 2	93 M 056	9 .6343	5	07/29/96	TEC	2.22	1.00	(RB)	S3	EL
017-2300-000-000-000-	Trib. to Babine R.	JULIE 36, Unit 2	93 M 056	9 .6351	1	07/29/96	TEC	2.96	1.00	(RB)	S3	EL
182-7000-000-000-000-	Trib. to Babine R.	JULIE 37, Unit 2	93 M 056	9 .6310 .	2	07/29/96	TEC	5.00	6.00	(DV)	S2	VO
480-0000-000-000-000-	Trib. to Babine R.	JULIE 38, Unit 2	93 M 056	9 .6311	1	07/29/96	TEC	2.64	1.00	(RB)	S3	VO
018-2800-000-000-000-	Trib. to Babine R.	JULIE 46, Unit 2	93 M 056	9 . 6293 .	4	07/29/96	TEC	1.36	0.50	(DV)	S4	EL
017-4900-000-000-000-	Trib. to Babine R.	JULIE 61, Unit 2	93 M 056	9 .6335	2	08/07/96	TEC	1.50	5.00	(RB)	S3	VO
081-9300-000-000-000-	Trib. to Babine R.	RYAN 29, Unit 2	93 M 047	9 .6416	1	07/29/96	TEC	0.62	1.00	(RB)	S4	EL
081-6300-000-000-000-	Trib. to Babine R.	RYAN 32, Unit 2	93 M 047	9 .6434	1	07/29/96	TEC	0.80	0.50	(RB)	S4	EL
018-3600-000-000-000-	Trib. to Babine R.	RYAN 33, Unit 2	93 M 066	9 . 6344 .	2	07/29/96	TEC	2.00	1.00	(RB)	S3	EL
480-0000-000-000-000-	Trib. to Babine R.	RYAN 37, Unit 2	93 M 057	9 . 6413 .	1	07/30/96	TEC	0.68	2.00	(DV)	S4	VO
016-9000-000-000-000-	Trib. to Babine R.	TERRY 26, Unit 2	93 M 057	9. 6383 .	2	07/29/96	TEC	2.82	3.00	(CT)	S3	EL
016-8900-000-000-000-	Trib. to Babine R.	TERRY 27, Unit 2	93 M 057	9 . 6395 .	1	07/29/96	TEC	2.66	2.00	(CT)	S3	EL
016-7600-000-000-000-	Trib. to Babine R.	TERRY 28, Unit 2	93 M 057	9 .6403	2	07/29/96	TEC	1.90	1.50	(DV)	S3	EL
016-8900-000-000-000-	Trib. to Babine R.	TERRY 36, Unit 2	93 M 067	9 .6415	1	07/30/96	TEC	1.79	2.00	(DV)	S3	EL
016-5200-000-000-000-	Trib. to Babine R.	Y46, Unit 2	93 M 057	9 .6433	1	07/17/97	TEC	1.43	1.00	(DV)	S4.	EL
016-7000-000-000-000-	Trib. to Babine R.	Y47, Unit 2	93 M 057	9 .6425	3	07/17/97	TEC	1.12	3.00	(DV)	S4.	EL
016-7200-000-000-000-	Trib. to Babine R.	Y48, Unit 2	93 M 057	9 .6408	1	07/17/97	TEC	1.88	1.00	(DV)	S3.	EL
017-4100-000-000-000-	Trib. to Babine R.	Y61, Unit 2	93 M 056	9 .6361	2	07/20/97	TEC	4.25	2.00	(DV)	S3.	EL
081-7700-000-000-000-	Trib. to Babine R.	Z55, Unit 2	93 M 047	9 .641573.61	3	07/19/97	TEC	0.77	0.50	(RB)	S4.	EL

Table 7. Summary of Wildlife and/or Wildlife Sign Observed in Working Unit 2 in 1996 and 1997

Watershed Code	TRIM Number	Location	UTM	Reach Number	Survey Date	Agency	Comments
017-1500-000-000-000-000-000-000-000-000-000-	93 M 056	JULIE 35, Unit 2	9 .6343 .61567	5	07/29/96	TEC	Seems like good habitat. A reach break was established above the main creek, near the beaver ponds.
017-2300-000-000-000-000-000-000-000-000-000-	93 M 056	JULIE 36, Unit 2	9 .6351 .61572	1	07/29/96	TEC	Several beaver dams were noted downstream. The habitat consists of a series of old beaver ponds connected by sections of riffle over cobble. Some suitable fish habitat was noted downstream of the beaver ponds.
480-3352-000-000-000-000-000-000-000-000-000	93 M 056	JULIE 39, Unit 2	9 .6369 .61534	5	07/30/96	TEC	This site is in the middle of a swampy area that has been heavily impacted by beaver activity.
017-1000-000-000-000-000-000-000-000-000-000-	93 M 056	JULIE 41, Unit 2	9 .6373 .61576	1	07/30/96	TEC	Sampled in marshy section with several beaver dams and ponds.
018-2800-000-000-000-000-000-000-000-000-000-	93 M 056	JULIE 46, Unit 2	9 . 6293 . 61580	4	07/29/96	TEC	The crew sampled below a small lake, in area that used to have an old beaver dam.
018-3600-000-000-000-000-000-000-000-000-000	93 M 066	RYAN 33, Unit 2	9 . 6344 . 61668	2	07/29/96	TEC	Multiple channels and beaver activity were noted around the swamp.
017-4100-000-000-000-000-000-000-000-000-000	93 M 066	RYAN 34, Unit 2	9 . 6362 . 61627	3	07/29/96	TEC	Beaver activity was noted.
017-4100-000-000-000-000-000-000-000-000-000-	93 M 056	Y61, Unit 2	9 .6361 .61626	2	07/20/97	TEC	A large amount of bear and moose sign was observed throughout the area.
081-7700-000-000-000-000-000-000-000-000-000-	93 M 047	Z55, Unit 2	9 .641573.6151426	3	07/19/97	TEC	Loons were noted on the associated lake.

APPENDIX 1

Fish Data

Appendix 1. Summary of Fish Data Collected in Working Unit 2 in 1996 and 1997

Watershed Code	Stream "Local"	Location	Map #	UTM	Reach Number	Survey Date	Agency	Species	Number	Size Range	Life Phase	Fishing Method
480-3352-000-000-000-000	Trib. to Babine R.	HASLETT 14, Unit 2	93 M 057	9 .6405 . 61539	5	07/29/96	TEC	CT	1.00	78	J	EL
480-3352-000-000-000-000	Trib. to Babine R.	HASLETT 14, Unit 2	93 M 057	9 .6405 . 61539	5	07/29/96	TEC	RB	5.00	45-82	J	EL
480-0000-000-000-000-000	Trib. to Babine R.	HASLETT 15, Unit 2	93 M 057	9 .6408 .61539	4	07/29/96	TEC	DV	3.00	65-82	J	EL
480-3352-000-000-000-000	Trib. to Babine R.	JULIE 39, Unit 2	93 M 056	9 .6369 .61534	5	07/30/96	TEC	DV	3.00	78-140	J	MT
016-9100-000-000-000-000	Trib. to Babine R.	JULIE 40, Unit 2	93 M 056	9 .6382 .61618	2	07/30/96	TEC	RB	1.00	28	F	EL
081-7200-000-000-000-000	Trib. to Babine R.	RYAN 30, Unit 2	93 M 047	9 .6419 .61501	1	07/29/96	TEC	RB	12.00	50	J	EL
081-7200-000-000-000-000	Trib. to Babine R.	RYAN 30, Unit 2	93 M 047	9 .6419 .61501	1	07/29/96	TEC	RB	8.00	25	F	EL
081-7300-000-000-000-000	Trib. to Babine R.	RYAN 31, Unit 2	93 M O47	9 .6420 .61491	1	07/29/96	TEC	RB	2.00	80	J	EL
480-0000-000-000-000-000	Trib. to Babine R.	RYAN 35, Unit 2	93 M 066	9 .6362 .61680	1	07/29/96	TEC	SK	10.00	450	A	VO
480-3352-000-000-000-000	Trib. to Babine R.	RYAN 36, Unit 2	93 M 057	9. 6412 . 61543	2	07/30/96	TEC	RB	1.00	130	J	MT
480-0000-000-000-000-000	Trib. to Babine R.	RYAN 38, Unit 2	93 M 057	9 .6450 .61539	1	07/30/96	TEC	DV	1.00	95	J	MT
016-9100-000-000-000-000	Trib. to Babine R.	TERRY 25, Unit 2	93 M 056	9 .6385 .61630	2	07/29/96	TEC	CT	3.00	90-120	J	EL
480-0000-000-000-000-000	Trib. to Babine R.	TERRY 31, Unit 2	93 M 057	9 .6444 .61612	4	07/29/96	TEC	RB	1.00	155	J	EL
480-0000-000-000-000-000	Trib. to Babine R.	TERRY 31, Unit 2	93 M 057	9 .6444 .61612	4	07/29/96	TEC	CT	3.00	70-100	J	EL
480-0000-000-000-000-000	Trib. to Babine R.	TERRY 32, Unit 2	93 M 057	9 .6459 . 61572	3	07/29/96	TEC	DV	1.00	118	N	EL
081-8900-000-000-000-000	Trib to Babine R.	Z56, Unit 2	93 M 047	9 .6432 .615194	1	07/19/97	TEC	RB	1.00	30	F	EL

APPENDIX 2

Photodocumentation

ry for Working Unit 2

					Site Number	Unit Number	Agency	Survey Date	Stream "Local"	Map #	UTM Zone	UTM Northing	UTM Easting	Method	Reach Number	Aspect	Photo Direction	Photo Type	Scale Item	Comments
					E94	Unit 2	TEC	20/07/97	Trib. to Babine R.	93 M 057	9	6396000	615700	GPS	2	E	Dn	Ch	photoboard	Looking downstream at the channel
					E94	Unit 2	TEC	20/07/97	Trib. to Babine R.	93 M 057	9	6396000	615700	GPS	2	W	Up	Ch	photoboard	Looking upstream at the channel
					E289	Unit 2	TEC	10/09/97	Trib. to Babine R.	93 M 067	9	6397000	616540	GPS	1	S	Dn	Ch	photoboard	Looking downstream at the channel
					E289	Unit 2	TEC	10/09/97	Trib. to Babine R.	93 M 067	9	6397000	616540	GPS	1	N	Up	Ch	photoboard	Looking upstream at the channel, note the dense riparian cover
E	28	3	0169100000000000000	SJ JL	E290	Unit 2	TEC	11/09/97	Not a creek	93 M 067	9	6389000	616550	GPS	0	S	NA	NA	photoboard	Looking at an "NC"
E	28	4	0169000000000000000	SJ JL	E291	Unit 2	TEC	11/09/97	Trib. to Babine R.	93 M 057	9	6401000	616310	GPS	2	NE	Up	Ch	photoboard	Looking upstream at the channel
E	28	5	0169000000000000000	SJ JL	E291	Unit 2	TEC	11/09/97	Trib. to Babine R.	93 M 057	9	6401000	616310	GPS	2	SW	Dn	Ch	photoboard	Looking downstream at the channel
H	1	14	4803352000000000000	JH KA	H13	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6396000	615450	GPS	1	NE	Dn	Ch		Looking downstream, channel through grass.
H	1	15	4803352000000000000	JH KA	H14	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6405000	615390	GPS	5	E	Up	Ch	Kirsten	Looking upstream, channel shaded by alder.
H	1	16	4800000000000000000	JH KA	H15	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6408000	615390	GPS	4	E	Dn	Ch		Looking downstream.
J	2	18	0171500000000000000	JP KG	J33	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6345000	615710	GPS	4	N		Ch		Channel through grass and alder.
J	2	17	1734000000000000000	JP KG	J34	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6343000	615710	GPS	1	E	Dn	Ch		Looking downstream, tributary to site J33.
J	2	19	0171500000000000000	JP KG	J35	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6343000	615670	GPS	5	N	Xs	Ch	Karla	Looking cross-stream, channel through grass and willow.
J	2	20	0172300000000000000	JP KG	J36	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6351000	615720	GPS	1	N	Up	Ch	Karla	Looking upstream.
J	2	21	0172300000000000000	JP KG	J36	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6351000	615720	GPS	1	N	Dn	Ch		Looking downstream toward beaver pond
J	3	24	1827000000000000000	JP KG	J37	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6310000	616000	GPS	2	N	Dn	Ch		Looking downstream, channel through grassy area.
J	2	22	1827000000000000000	JP KG	J37	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6310000	616000	GPS	2	N		Ch		Aerial photo, downstream of site J37.
J	2	23	1827000000000000000	JP KG	J37	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6310000	616000	GPS	2	N		Ch		Looking downstream, channel through grass and alder.
J	3	1	0169100000000000000	JP KG	J40	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 056	9	6382000	616180	GPS	2	S	Dn	Ch		Looking downstream.
J	3	4	0171000000000000000	JP KG	J41	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 056	9	6373000	615760	GPS	1	NW	Xs	Ch		Channel in meadow above beaver dam.
J	3	3	0171000000000000000	JP KG	J41	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 056	9	6373000	615760	GPS	1	NW		Ch		Waterfall downstream from site J41.
J	3	2	0171000000000000000	JP KG	J41	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 056	9	6373000	615760	GPS	1	NW		Ch		Waterfall downstream from site J41.
J	3	19	0169400000000000000	JP KG	J55	Unit 2	TEC	02/08/96	Trib. to Babine R.	93 M 056	9	6360000	616020	GPS	1	E	Bd	Ch		Large cobble and fine substrate.
J	3	20	0169500000000000000	JP KG	J56	Unit 2	TEC	02/08/96	Trib. to Babine R.	93 M 056	9	6361000	615960	GPS	1	N		Ch		Channel through willows.
J	3	21	0169300000000000000	JP KG	J57	Unit 2	TEC	02/08/96	Trib. to Babine R.	93 M 056	9	6370000	615920	GPS	2	N		Ch	Julie	Grass lined channel through willows
J	3	22	0170400000000000000	JP KG	J58	Unit 2	TEC	02/08/96	Trib. to Babine R.	93 M 056	9	6372000	615930	GPS	1	NW	Xs	Ch	Julie	Grass lined channel through willows
J	3	25	0174700000000000000	JP KG	J60	Unit 2	TEC	02/08/96	Trib. to Babine R.	93 M 056	9	6347000	616210	GPS	2	E	Up	Ch		Looking upstream through meadow.
R	3	1	0819300000000000000	RH DD	R29	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 047	9	6416000	615090	GPS	1	E	Up	Ch		Looking upstream from road.
R	3	2	0817200000000000000	RH DD	R30	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 047	9	6419000	615010	GPS	1	E	Up	Ch		Looking upstream from road.
R	3	3	0817300000000000000	RH DD	R31	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M O47	9	6420000	614910	GPS	1	SE	Up	Ch	Ryan	Looking upstream.
R	3	4	0816300000000000000	RH DD	R32	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 047	9	6434000	614780	GPS	1	E	Up	Ch		Looking upstream from road.

Group	Roll	Frame	Watershed Code	Survey Crew	Site Number	Unit Number	Agency	Survey Date	Stream "Local"	Map #	UTM Zone	UTM Northing	UTM Easting	Method	Reach Number	Aspect	Photo Direction	Photo Type	Scale Item	Comments
R	3	5	0183600000000000000	RH DD	R33	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 066	9	6344000	616680	GPS	2	SE	Dn	Ch		Looking downstream, channel through grassy area.
R	3	6	0174100000000000000	RH DD	R34	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 066	9	6362000	616270	GPS	3	SW	Dn	Ch		Looking downstream, channel through willows.
R	3	7	4800000000000000000	RH EM	R37	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 057	9	6413000	615520	GPS	1	NE	Dn	Ve		Looking downstream through alder.
R	3	8	4800000000000000000	RH EM	R38	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 057	9	6450000	615390	GPS	1	NE		O		Beaver pond.
T	2	3	0169100000000000000	HS TD	T25	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 056	9	6385000	616300	GPS	2	NE		Ch		Channel.
T	2	4	0169000000000000000	HS TD	T26	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6383000	616120	GPS	2	W	Up	Ch		Upstream view.
T	2	5	0168900000000000000	HS TD	T27	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6395000	616050	GPS	1	SW	Up	Ch		Upstream view, channel through alders.
T	2	7	0167600000000000000	HS TD	T28	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6403000	616070	GPS	2	S	Dn	Ch		Downstream view with LOD.
T	2	6	0167600000000000000	HS TD	T28	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6403000	616070	GPS	2	S	Up	Ch		Upstream view.
T	2	11	4800000000000000000	HS TD	T31	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6444000	616120	GPS	4	SW	Up	Ch		Upstream view, stabilization.
T	2	12	4800000000000000000	HS TD	T31	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6444000	616120	GPS	4	SW	Dn	Ch		Downstream view.
T	2	13	4800000000000000000	HS TD	T32	Unit 2	TEC	29/07/96	Trib. to Babine R.	93 M 057	9	6459000	615720	GPS	3	SE		Ch		Channel.
T	2	15	4800000000000000000	HS TD	T34	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 057	9	6472000	615390	GPS	1	W	Dn	Ch		Downstream view.
T	2	14	4800000000000000000	HS TD	T34	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 057	9	6472000	615390	GPS	1	W	Dn	Ch		Downstream view.
T	2	18	0168900000000000000	HS TD	T36	Unit 2	TEC	30/07/96	Trib. to Babine R.	93 M 067	9	6415000	616580	GPS	1	NW		Ch		Channel.
T	2	9	4800000000000000000	HS TD	T29	Unit 2	TEC	29/07/96	Not a creek	93 M 057	9	6411000	616160	GPS	0			O		Not a creek.
T	2	8	4800000000000000000	HS TD	T29	Unit 2	TEC	29/07/96	Not a creek	93 M 057	9	6411000	616160	GPS	0			O		Swamp.
T	2	10	4800000000000000000	HS TD	T30	Unit 2	TEC	29/07/96	Not a creek	93 M 057	9	6437000	616260	GPS	0			Ch		Channel.
T	2	17	0167600000000000000	HS TD	T33	Unit 2	TEC	30/07/96	Not a creek	93 M 057	9	6432000	616250	GPS	0			Ve		Alders.
T	2	16	4800000000000000000	HS TD	T35	Unit 2	TEC	30/07/96	Not a creek	93 M 057	9	6476000	615490	GPS	0			Ve		Thick vegetation.
Y	6	25	0165200000000000000	DD SJ	Y46	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6433000	615790	GPS	1	NW	X	O	NA	Looking across the channel at the corduroy road on site.
Y	7	1	0165200000000000000	DD SJ	Y46	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6433000	615790	GPS	1	N	Up	Ch	photoboard	Looking upstream at the channel.
Y	6	24	0165200000000000000	DD SJ	Y46	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6433000	615790	GPS	1	SE	Dn	Ch	photo board	Looking downstream at muddy water in the channel, below the road crossing.
Y	7	2	0167000000000000000	DD SJ	Y47	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6425000	615830	GPS	3	N	Up	Ch	photoboard	Looking upstream at the channel.
Y	7	3	0167000000000000000	DD SJ	Y47	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6425000	615830	GPS	3	S	Dn	Ch	photoboard	Looking downstream at the channel.
Y	7	5	0167200000000000000	DD SJ	Y48	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6408000	615890	GPS	1	SW	Dn	Ch	crew member	Looking downstream at the channel.
Y	7	4	0167200000000000000	DD SJ	Y48	Unit 2	TEC	17/07/97	Trib to Babine R.	93 M 057	9	6408000	615890	GPS	1	NE	Up	Ch	crew member	Looking upstream at the channel.
Y	8	15	0174100000000000000	DD SJ	Y61	Unit 2	TEC	20/07/97	Trib to Babine R.	93 M 056	9	6361000	616260	GPS	2	N	Up	Ch	crew member	Looking upstream at the channel.
Y	8	16	0174100000000000000	DD SJ	Y61	Unit 2	TEC	22/07/97	Trib to Babine R.	93 M 056	9	6361000	616260	GPS	2	S	Dn	Ch	crew member, glove	Looking downstream at the channel.
Z	1	1	0167300000000000000	AFL KG	Z1	Unit 2	TEC	08/07/97	Trib. to Babine R.	93 M 057	9	6416100	615930	GPS	2	E	Up	Ve	crew member	Looking upstream at the channel, heavily overgrown with vegetation
Z	1	2	0167300000000000000	AFL KG	Z1	Unit 2	TEC	08/07/97	Trib. to Babine R.	93 M 057	9	6416100	615930	GPS	2	W	Dn	Ve	NA	Looking downstream at the channel
Z	1	4	0167200000000000000	AFL KG	Z2	Unit 2	TEC	08/07/97	Trib. to Babine R.	93 M 057	9	6421430	615868	GPS	1	W	Dn	Ve	plastic bag with pH meter	Looking downstream at the channel

Group	Roll	Frame	Watershed Code	Survey Crew	Site Number	Unit Number	Agency	Survey Date	Stream "Local"	Map #	UTM Zone	UTM Northing	UTM Easting	Method	Reach Number	Aspect	Photo Direction	Photo Type	Scale Item	Comments
Z	1	3	0167200000000000000	AFL KG	Z2	Unit 2	TEC	08/07/97	Trib. to Babine R.	93 M 057	9	6421430	615868	GPS	1	E	Up	Ve	NA	Looking upstream at the channel, heavily overgrown with vegetation
Z	1	18	0815900000000000000	AFL KG	Z5	Unit 2	TEC	08/07/97	Trib. to Babine R.	93 M 047	9	6449200	614667	GPS	2	S	Dn	Ch	plastic bag with pH meter	Looking downstream at the channel
Z	1	17	0815900000000000000	AFL KG	Z5	Unit 2	TEC	08/07/97	Trib. to Babine R.	93 M 047	9	6449200	614667	GPS	2	N	Up	Ch	hat	Looking upstream at the channel
Z	7	10	0818500000000000000	JP KG	Z53	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6451400	615088	GPS	1	W	Dn	Ch	photoboard, crew member	Looking downstream at the channel
Z	7	9	0818500000000000000	JP KG	Z53	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6451400	615088	GPS	1	NW	Up	Ch	photoboard, crew member	Looking upstream at the channel
Z	7	11	0818200000000000000	KG JP	Z54	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6446000	615024	GPS	2	S	Dn	Ch	flagging tape	Looking downstream at the channel
Z	7	12	0818200000000000000	KG JP	Z54	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6446000	615024	GPS	2	N	Up	Ch	photoboard	Looking upstream at the channel
Z	7	13	0818200000000000000	KG JP	Z54	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6446000	615024	GPS	2	N	Up	Ch	NA	Looking upstream at the channel
Z	7	14	0817700000000000000	JP KG	Z55	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6415730	615142	GPS	3	NW	Up	Ch	photoboard	Looking upstream at the channel
Z	7	15	0817700000000000000	JP KG	Z55	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6415730	615142	GPS	3	SE	Dn	Ch	photoboard	Looking downstream at the channel
Z	7	16	0818900000000000000	JP KG	Z56	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6432000	615194	GPS	1	S	Up	Ch	photoboard	Looking upstream at the channel
Z	7	17	0818900000000000000	JP KG	Z56	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6432000	615194	GPS	1	N	Dn	Ch	photoboard	Looking downstream at the channel
Z	7	18	0818900000000000000	JP KG	Z56	Unit 2	TEC	19/07/97	Trib to Babine R.	93 M 047	9	6432000	615194	GPS	1	NA	NA	Fi	fieldbook	Looking at a rainbow trout fry