Fish and Fish Habitat Inventory
for
Operational Areas
Fulton River Watershed

in the Tanglechain IRM Unit:

CP 438-2 and CP 438-4

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June 1998

DISCLAIMER

The Province has not accepted the contents of this product for the purposes of the Forest Practices Code, and reserves the right to dispute the validity of summarized results. The province does not necessarily agree with the classification assigned to any individual stream reach, for use in logging plans, silviculture prescriptions or any other application.

PROJECT SUMMARY SHEET

Project Reference Information

MELP Contract Number	CSK 3070
FDIS Project Number	none
MELP Region	Skeena Region (06)
FW Management Unit	06-08
DFO Subdistrict	Prince Rupert (8)
Forest Region	Prince Rupert
Forest District	Morice
Forest Licensee	Houston Forest Products
First Nations Claim Area	Lake Babine Nation

Watershed Information

Watershed Group	Babine River
Watershed Name	Fulton River
Watershed Code	480-6972
UTM at Mouth	9.6079110.685874
Watershed Area	3900 km^2
Stream Order	5
NTS Maps (1:250,000)	93L
TRIM Maps	93L098
BEC Zone	SBS mc^2

Sampling Design

Number of Reaches Sampled	10
Total Sample Sites	11
Field Sampling Dates	July 10-15, 1997
Fish Species in Watershed	CH, CO, SK, KO, CT, PK, RB, MW, LW, DV, BB, CSU, NSC, LT, CC, PMC, LT

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ACKNOWLEDGMENTS

This inventory project was funded by Forest Renewal B.C., and the contract was administered by Deidre Quinlan. Field work was conducted by Ron Saimoto, Mark LeRuez, Matthew Jessop, Greg Tamblyn and Todd Johnston. Data entry was completed by Todd Johnston, Mark LeRuez, Regina Saimoto and Matthew Jessop. Mark LeRuez completed the draft mapping, and digital mapping was conducted by Western Geographics Information System Inc. Draft reports were completed by Regina Saimoto, and reviewed by Ron Saimoto. Quality control checks were conducted by Mark LeRuez and Regina Saimoto. Krista Morten, Cyril Thacker, Melissa Todd, and Paul Giroux provided helpful editorial comments on the drafts of the report.

1.0 INTRODUCTION

The study area is located in Fulton River watershed of the Babine drainage in north-central British Columbia (Figure 1). Selected streams in the area were inventoried for Forest Practice Code (FPC) stream classification and evaluation of requirements for appropriate management of stream/wetland riparian zones related to cutting permits CP 438-2 and CP 438-4.

The main objectives of this project were:

- to complete a detailed literature review of historical fisheries information for related areas,
- to conduct field visits and appropriate fish sampling at representative sites to determine fish species distribution and relative abundance in the related watershed(s),
- to recommend FPC stream classification for all stream reaches in contact with planned forest harvest,
- to describe management concerns for stream/wetland and lake riparian zones in the relevant areas planned for forest harvest,
- to provide recommendations for more conservative protection of stream riparian zones that are not adequately protected by the minimum standards of the FPC, and
- to provide recommendations for appropriate structures, designs, and installation of planned road/stream crossings with regard to concerns for fish, fish migration, and fish habitat.

2.0 STUDY AREA

2.1 Location

The Tanglechain Integrated Resource Management (IRM) Unit is located in the Morice Forest District (Prince Rupert Forest Region) in north-central British Columbia. The main drainage in the Tanglechain IRM Unit is the Fulton River, which drains into Babine Lake. The study area for this project focused around proposed harvest in CP 438-2 and CP 438-4. Streams potentially impacted by harvest in the area drain into Fulton Lake, and are in the moist-cold subzone of the sub-boreal spruce biogeoclimatic zone (SBS mc^2) (MoF 1988).

2.2 Access

All of the stream survey sites were accessed by road and on foot. The area can be accessed from the Granisle Highway (connecting the village of Granisle to Topley), or the Babine Lake Road to 42 km. A road runs along the northern shore of Fulton Lake and joins the

Babine Lake Road at 42 km. This road can also be accessed from the Granisle Highway between Topley Landing and the village of Granisle.

Figure 1. NTS Map (93L) of general area showing the general area of fish inventory and stream classification for CP 438-2 and CP 438-4.

2.3 Resource Use

The study area is utilized for Forestry purposes, with active logging being proposed for the next 2 years in the immediate study area. A Land Use Planning Document was not available at the time of writing. The study area has some recreational value, including snow mobiling, a BC Forest Service (BCFS) recreation trail and cross country skiing near the village of Granisle, a BCFS Recreation Site located at the Bear Island View Point Trail (about 6 km north of the village of Granisle), a BCFS Recreation Site located approximately 15 km north of the village of Granisle, and BCFS Recreation Sites at Tanglechain Lake, Doris Lake, and Pine Tree Lake (MOF Morice Forest District Recreation Maps 1994). No Protected Areas Strategy (PAS) sites have been identified in the Tanglechain IRM Unit. The Lake Babine Nation has "claimed" parts of the Tanglechain IRM Unit, but no settlements were in process at the time of writing. There are no mineral tenures, placer stakes or coal licences in the study area, however, a mineral tenure was noted to the southwest of the Tanglechain area inventoried. The Mineral Tenure is located on NTS map 93L/16W, Mineral Tenure "Cart 1" (240207 or old # 10006), and is located on the west side of CP 435-1 (Files at Ministry of Energy, Mines and Petroleum Resources, updated Feb. 6, 1996). CP 438-2 and CP 438-4 are located in the Fulton Lake Range permit. Guide and outfitter territory in the study area is 608G006. Trapline territory relevant to the study is 608T008.

The B.C. Environment Water Management Branch was contacted to document water licences and water rights for the study area. Two water licences exist for the Fulton River (both for Department of Fisheries and Oceans). No community watersheds are located in the study area (Meredith pers.com.).

3.0 METHODS

3.1 Literature Review

All pertinent literature on the streams inventoried in this project was collected and summarized. Existing data pertaining to stream classification in the Fisheries Information Summary System (FISS), and in the rivers and lakes files at the BC Environment Skeena Region office were summarized and mapped. Known fish distribution in the study area watersheds were mapped. In addition, existing watershed codes were assigned to streams. An interim locational point (ILP) was assigned to each stream for which no watershed code existed. UTM co-ordinates at the mouth of each stream were determined from the BC Environment watershed code dictionary or from 1:20,000 or 1:50,000 maps. Stream order was determined from 1:20,000 NTS map sheets.

3.2 Reach Break Identification

Reach breaks were tentatively identified and mapped by examining 1:20,000 TRIM map sheets and air photographs (approx. 1:15,000 scale). The identification of reach breaks followed RIC standards (RIC 1997). When feasible, reach breaks were confirmed in the field. Reaches were numbered from the mouth of the stream in ascending order. Where the number of reaches from the mouth was not determined, reaches were identified alphabetically in ascending order up the stream.

3.3 Stream Assessment

Stream sites were accessed using a combination of 4X4 truck and foot. Sections of streams in areas of development identified by HFP, with no previous indication of fish presence or requiring re-sampling, were walked. At representative sites, the following stream characteristics were measured: channel width, wetted width, pool depth, riffle depth (or bankful depth for dry streams), pool:riffle ratio, gradient (Suunto clinometer), temperature (ambient and water), pH (Oaktron pHTestr2), substrate composition (including D_{90}), aspect, valley:channel ratio, bank stability, bank material, and cover. Conductivity was recorded with a hand held Hanna HI9033 conductivity meter for all sites in which electroshocking was conducted. Reach breaks were verified in the field. All data were collected on DFO/MOE stream survey cards, and data were entered into an MsAccess database. Fish presence was ascertained by electroshocking with a Smith-Root Model 15C backpack electroshocker. At each site, when possible, an area of approximately 100 m^2 was sampled by electroshocking. Fish captured were identified to species, measured (fork length) and released. In addition to identifying fish, potential or known barriers to fish migration, sensitive sites, and critical fish habitat were identified and mapped, when possible. Photographs were taken of sample locations, barriers to fish migration, and other points of interest. Photographs were compiled into a photodocumentation document.

3.4 Map Production

All sample sites, fish distribution and reach breaks were hand drawn onto existing 1:20,000 maps for future digital mapping by Western Geographic Ltd. The following is indicated on all maps: watershed codes, reach breaks and reach numbers, sample sites, stream classifications, and fish distribution. Codes for fish species present follow those outlined in FISS, and are indicated on applicable maps.

4.0 RESULTS AND DISCUSSION

The results section describes the streams surveyed to the reach level. General information for relevant mainstems and tributaries are summarized, followed by a more detailed description for each reach inventoried. Reach descriptions include recommended stream, wetland and/or lake classifications (identified following the FPC standards), comments describing fish habitat types and fish captured at the sites sampled, and recommendations for proposed stream/road crossings and riparian management. Recommendations for riparian management generally fall into one of three types:

1. No additional recommendations are made in cases when FPC standards for riparian management are expected to provide adequate protection to fish and fish habitat.

2. Recommendations for riparian management are provided in cases where FPC standards appear to provide insufficient protection of fish habitat based on
    - reach characteristics, including stream gradient, stream substrate, bank material, and surrounding topography (e.g. wetland, sideslope, valley:channel ratio),
    - fisheries resources in immediate and downstream reaches and/or mainstems,
    - influences of riparian vegetation on fish habitat (e.g. nutrients, LOD, stream temperature, bank stability),
    - potential flood conditions, and
    - forest type and values within riparian reserve and management zones.

3. Recommendations with explanations for S6 classification of streams with S4 default classification under FPC standards. This is exemplified at reaches where:
    - a definite barrier to fish migration exists with no available habitat for resident fish populations upstream (e.g. no potential spawning habitat above barrier or channel width of less than 1.5 m in the Central Interior Region), or
    - a single season's sampling in good fish habitats, and good sampling conditions confirms fish absence above definite barriers to fish migration, or
    - a single season's sampling in available habitat confirms fish absence above a potential barrier in a reach that contains limited fish habitat, or
    - no potential fish habitat was identified in the reach, and no valuable fish habitat is present upstream (e.g. no well defined channel).

Note: various levels of forest retention in riparian management zones are commonly recommended for these S6 streams to protect downstream fisheries values,

Completed stream survey cards and sample site photographs are located in Appendix 1. A stream classification map with study site/NID numbers is included in Appendix 2.

Only fisheries values are taken into consideration when recommending special riparian reserve management zones. Other ecological contexts or wildlife values were not

considered in this study, and are thus not reflected on in the results, discussions, or recommendations.

4.1 Fulton River

Watershed code: 480-6972
Date surveyed: July 10 - 15 1997

Two tributaries to Fulton Lake were inventoried to establish potential impacts from harvest in CP 438-2 and CP 438-4. One of these tributaries (480-6972-115) drains into the northern shore of Fulton Lake, and was also inventoried for CP 439-5 (SKR 1998). The presence of cutthroat trout was documented in the system. These cutthroat trout are probably lacustrine-adfluvial or stream resident in life history. Cursory information for Fulton River and Fulton Lake are summarized below to place the Unnamed tributary surveyed into context.

The presence of chinook (*Oncorhynchus tsawytscha*), coho (*O. kisutch*), cutthroat trout (*O. clarki*), pink salmon (*O. gorbusha*), sockeye (*O. nerka*), rainbow trout (*O. mykiss*), mountain whitefish (*Prosopium williamsoni*), lake whitefish (*Coregonus clupeaformis*), largescale suckers (*Catastomus macrocheilus*), northern squawfish (*Ptychocheilus oregonensis*), lake trout (*Salvelinus namyacush*), and sculpin (*Cottus sp.*) in Fulton River have been documented (FISS). Escapement data for Fulton River, available from the Department of Fisheries and Oceans is summarized in SKR (1997a). An 18 m high water fall at the outlet of Fulton Lake has been identified as a barrier to fish migration for anadromous fish.

The watershed inventoried for this project drains into Fulton Lake, and is therefore not accessible to anadromous salmonids. However, fisheries data for Chapman Lake (drains into the Fulton River, upstream of Fulton Lake) indicates that burbot (*Lota lota*), cutthroat trout (*Oncorhynchus clarki*), lake trout (*Salvelinus namyacush*) and lake whitefish (*Coregonus clupeaformis*) are found upstream of the barrier. In addition to these species, the presence of rainbow trout (*Oncorhynchus mykiss*), and mountain whitefish (*Prosopium williamsoni*) have been documented in other tributaries to the Fulton River upstream of Fulton Lake (FISS).

4.1.1 Unnamed Creek (480-6972-115-438)

Watershed Code:	480-6972-115-438
Map # / ILP #:	93L089 / N.A.
UTM (at mouth):	9.6080321.672890
Length surveyed:	1100 m
Estimated number of reaches:	
Number of reaches examined:	1

This stream forms the eastern boundary of CP 438-4, and is referred to as Stream “C” on the Silviculture Prescription Map.

Reach 4

NID # / NID Map #:	02004 / 93L089	Site #:	4
NID # / NID Map #:	02005 / 93L089	Site #:	5
NID # / NID Map #:	02006 / 93L089	Site #:	7
NID # / NID Map #:	02008 / 93L089	Site #:	8
Length of Reach:	3100 m	Stream Order:	3
Length Surveyed:	1100 m	Channel Width:	2.1-2.5 m
		Gradient:	%
Date of Sampling:	July 10 and 15, 1997		
Fish Presence:	cutthroat trout; largescale sucker; lake chub		

Reach Classification:	S3
Recommended Reach Classification:	**S3**

Two sample sites were established in this reach, adjacent to the eastern boundary of CP 438-4 (Stream "C"). An additional 2 sample sites were established at the road crossing. Cutthroat trout (*Oncorhynchus clarki*) were captured at all four sites by electroshocking and/or minnow trapping, and largescale suckers (*Catostomus catostomus*) and lake chub (*Couesius plumbeus*) were caught at two of the four sites. The reach offered some excellent fish rearing habitat, and good potential spawning habitat throughout.

4.1.1.1 Unnamed Creek (ILP 02002)

Watershed Code:	480-6972-115-438-BB1
Map # / ILP #:	93L089 / 02002
UTM (at mouth):	9.672387.6080383
Length surveyed:	200 m
Estimated number of reaches:	2
Number of reaches examined:	1

This stream is located in the southern portion of CP 438-4, and is referred to as Stream "B" on the Silviculture Prescription Map. The stream is not shown on 1:20,000 scale TRIM map, but is indicated on 1:5,000.

Reach 1

NID # / NID Map #:	- / -	Site #:	-
Length of Reach:	60 m	Stream Order:	1
Length Surveyed:		Channel Width:	undefined
		Gradient:	
Date of Sampling:	July 15, 1997		
Fish Presence:	no defined channel		

Reach Classification:	S6 / W1
Recommended Reach Classification:	**S6 / W1**

No defined channel could be located in the wetland surrounding "James" Lake (480-6972-115-438-01). No sample site was established in this reach.

This reach presents a barrier to fish migration, since it lacks a defined channel. Wetland classification is required.

Reach 2

NID # / NID Map #:	02003 / 93L089	Site #:	3
Length of Reach:	200 m	Stream Order:	1
Length Surveyed:	200 m	Channel Width:	1.3 m
		Gradient:	2.0 %

Date of Sampling:	July 15, 1997
Fish Presence:	none captured

Reach Classification:	S4 default
Recommended Reach Classification:	**S6**

This reach was sampled approximately 200 m upstream of "James Lake" (480-6972-115-438-01). Only limited potential fish rearing habitat, and no potential spawning habitat was identified in this reach. No fish were captured in 150 s. (80 m^2) of electroshocking. Small sections of intermittent flow were noted in this reach.

This reach can be classified as S6 due to the presence of downstream barriers to fish migration (no defined channel in Reach 1). The potential for downstream impacts is limited due to low gradient, and the wetland located downstream of this reach.

4.1.1.2 Unnamed Creek (ILP 02003)

Watershed Code:	480-6972-115-438-BB2
Map # / ILP #:	93L089 / 02003
UTM (at mouth):	9.672119.6080965
Length surveyed:	100 m
Estimated number of reaches:	1
Number of reaches examined:	1

This stream is located in the northern portion of CP 438-4, and is referred to as Stream "A" on the Silviculture Prescription Map.

Reach 1

NID # / NID Map #:	02007 / 93L089	Site #:	6
Length of Reach:		Stream Order:	1
Length Surveyed:	100 m	Channel Width:	0.8
		Gradient:	1.5 %

Date of Sampling: July 15, 1997
Fish Presence: none captured

Reach Classification: S4 default
Recommended Reach Classification: **S6**

This intermittent reach consisted of frequent sections of underground seepage, and offered limited potential fish habitat. A 40 cm drop at the stream's confluence with the mainstem presents a barrier to fish migration, in conjunction with extensive sections of sub-surface flow. Electroshocking for 230 seconds (70 m^2) did not result in the capture or observation of any fish.

S6 stream classification is recommended due to the presence of barriers to fish migration, and the lack of fish captured in this reach. Partial retention in the Riparian Management Zone is recommended to ensure adequate shading of the stream. Culvert installation to ensure adequate drainage is recommended for future stream crossings in this reach.

4.1.1.3 Unnamed Creek (ILP 02005)

Watershed Code:	480-6972-115-438-BB3
Map # / ILP #:	93L089 / 02005
UTM (at mouth):	9.670985.6081835
Length surveyed:	170
Estimated number of reaches:	2
Number of reaches examined:	1

This stream is located within a harvested area (polygon number 361; sup 22267) and originates near the eastern boundary of CP 438-2.

Reach 2

NID # / NID Map #:	02010 / 93L089	Site #:	11
Length of Reach:		Stream Order:	1
Length Surveyed:	170 m	Channel Width:	not well defined
		Gradient:	2 %

Date of Sampling: July 11, 1997
Fish Presence: no well defined channel

Reach Classification: S6
Recommended Reach Classification: **S6**

No well defined channel could be located at the sample site, located approximately 55 m downstream of the road crossing to access CP 438-2. The reach exhibited wetland characteristics, and did not offer any suitable fish habitat. The reach consisted of very few pools separated by large areas of permanently rooted vegetation.

Culvert installation to ensure adequate drainage at the proposed road crossing is recommended. The potential for downstream impacts are limited.

4.1.1.4 Unnamed Creek (480-6972-115-438-869)

Watershed Code: 480-6972-115-438-869
Map # / ILP #: 93L089 / N.A.
UTM (at mouth): 9.6081899.670252
Length surveyed: 750
Estimated number of reaches: 2
Number of reaches examined: 1

This stream is located in along the western boundary of CP 438-2, and is referred to as Stream "B" on the Silviculture Prescription Map. The drainage pattern of this reach deviates somewhat from that indicated both on the 1:5,000 Silviculture Prescription Map and the 1:20,000 TRIM map. Ground truthing indicated that the stream formed the western boundary of CP 438-2.

Reach 1

NID # / NID Map #:	- / -	Site #:	-
Length of Reach:	110 m	Stream Order:	2
Length Surveyed:		Channel Width:	
		Gradient:	

Date of Sampling:
Fish Presence: cutthroat trout

Reach Classification: S3 / W1
Recommended Reach Classification: **S3 / W1**

This reach is located in the wetland surrounding "Del Lake" (480-6972-115-438-02), and was not sampled, since fish presence can be deduced from sampling results in reach 2 (see below).

Reach 2

NID # / NID Map #:	02035 / 93L089	Site #:	9
Length of Reach:		Stream Order:	2
Length Surveyed:	750 m	Channel Width:	2.0 m
		Gradient:	1.5 %

Date of Sampling:	July 11, 1997
Fish Presence:	cutthroat trout

Reach Classification:	S3
Recommended Reach Classification:	**S3**

This reach was sampled along the western boundary of CP 438-2. Excellent potential cutthroat trout rearing and spawning habitat was identified in this reach. Electroshocking for 432 s. in 150 m^2 of habitat resulted in the capture of three juvenile cutthroat trout (*Oncorhynchus clarki*).

Partial retention in the Riparian Management Zone of this S3 stream is recommended to ensure adequate shading.

4.1.1.3.1 Unnamed Creek (ILP 02004)

Watershed Code:	480-6972-115-438-869-BB1
Map # / ILP #:	93L089 / 02004
UTM (at mouth):	9.670460.6082620
Length surveyed:	200 m
Estimated number of reaches:	1
Number of reaches examined:	1

This stream is located within CP 438-2, and is referred to as Stream "C" on the Silviculture Prescription Map.

Reach 1

NID # / NID Map #:	02009 / 93L089	Site #:	10
Length of Reach:	200 m	Stream Order:	1
Length Surveyed:	200 m	Channel Width:	not well defined
		Gradient:	0.5 %

Date of Sampling: July 11, 1997
Fish Presence: no well defined channel

Reach Classification: S4 default
Recommended Reach Classification: **S6**

No well defined channel could be located at the sample site. The stream was found to drain west-south-west to Unnamed Creek 480-6972-115-438-869, contrary to indications on the 1:5,000 Silviculture Prescription Map and 1:20,000 TRIM map. No fish sampling was conducted in this reach since a well defined channel could not be located.

No fish habitat was identified in this reach, and the reach can be classified as S6 since a well defined channel was not present. The potential for downstream impacts is limited due to the low gradient nature of the reach. A culvert is recommended for the proposed road crossing to ensure adequate drainage.

4.1.2 Unnamed Creek (480-6972-154)

Watershed Code: 480-6972-154
Map # / ILP #: 93L089 / N.A.
UTM (at mouth): 9.6077771.669661
Length surveyed: 200 m
Estimated number of reaches:
Number of reaches examined: 2

This stream is a second order tributary to Fulton Lake and is crossed by the access road for CP 438-4.

Reach 1

NID # / NID Map #:	02068 / 93L089	Site #:	1
Length of Reach:	2200 m	Stream Order:	2
Length Surveyed:	300 m	Channel Width:	1.2 m
		Gradient:	8.0 %

Date of Sampling: July 10, 1997
Fish Presence: none captured

Reach Classification: S4
Recommended Reach Classification: **S4**

This reach was sampled approximately 280 m downstream of the road crossing of the CP 438-4 access road. No fish were captured or observed in 105 s. of electroshocking (60 m^2 of habitat). Some potential fish rearing habitat, and limited potential spawning habitat was

identified in this reach. A series of step pools with intermittent sections of stream likely limit fish access.

Re-sampling is recommended to establish potential seasonal fish use of this reach.

Reach 2

NID # / NID Map #:	02069 / 93L089	Site #:	2
Length of Reach:		Stream Order:	2
Length Surveyed:	200 m	Channel Width:	1.0 m
		Gradient:	1.5 %

Date of Sampling:	July 10, 1997
Fish Presence:	none captured

Reach Classification:	S4
Recommended Reach Classification:	**S4**

This reach was sampled upstream of the road crossing for the CP 438-4 access road. A collapsed culvert located at the road crossing presented a barrier to fish migration at the time of sampling. No electroshocking was conducted at the sample site due to the presence of the unnatural barrier to fish migration. The culvert was replaced subsequent to sampling, to allow fish passage (Cameron Simpson, HFP, pers. comm.). Some potential fish rearing habitat, and limited spawning habitat was identified in this reach.

Stream classification may be changed to S6 if re-sampling in reach 1 indicates fish absence in two seasons.

5.0 SUMMARY OF RECOMMENDATIONS FOR STREAM RESAMPLING

5.1 CP 438-4

5.1.1 Unnamed Creek (480-6972-154)

Refer to Report Section:	4.1.2	Reach / Site:	1 / 1
NID #:	02068	NID map #:	93L089

Some potential fish habitat was identified in this reach, but no fish were captured while electroshocking. Step pools with intermittent sections of stream may limit fish access. Re-sampling in a second season may result in a change in stream classification from S4 to S6 for this reach, and reaches located upstream. If the reach is classified S6, fish passage at the road crossing will not be a primary concern.

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APPENDIX 1 - SITE CARDS

Site cards for all streams inventoried in 1997 relevant to cutting permits CP 438-2 and CP 438-4.

Unnamed Creek (480-6972-115-438) - Reach 4

Plate 1. Reach 4 - sample site 4. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6792-115-438) - Reach 4

Plate 2. Reach 4 - sample site 5. Upstream view (above - left) and downstream view (above - right) and cutthroat fry captured at the site (right).

Unnamed Creek (480-6972-115-438) - Reach 4

Plate 3. Reach 4 - sample site 7. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6972-115-438) - Reach 4

Plate 4. Reach 4 - sample site 8. Upstream view (above - left), downstream view (above - right) and cutthroat trout captured at the site (right).

Unnamed Creek (ILP 02002; ILP map 93L089) - Reach 2

Plate 5. Reach 2 - sample site 3. Upstream view (above) and downstream view (below).

Unnamed Creek (ILP 02003; ILP map 93L089) - Reach 1

Plate 6. Reach 1 - sample site 6. Upstream view (above) and downstream view (below).

Unnamed Creek (ILP 02005; ILP map 93L089) - Reach 2

Plate 7. Reach 2 - sample site 11. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6972-115-438-869) - Reach 2

Plate 8. Reach 2 - sample site 9. Upstream view (above - left), downstream view (above - right) and cutthroat trout captured at the sample site (right).

Unnamed Creek (ILP 02004; ILP map 93L089) - Reach 1

Plate 9. Reach 1 - sample site 10. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6972-154) - Reach 1

Plate 10. Reach 1 - sample site 1. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6972-154) - Reach 2

Plate 11. Reach 2 - sample site 2. Upstream view (above) and downstream view (below).

Plate 12. Reach 2 - sample site 2. Dry stream channel at road crossing (above), and failing culvert at road crossing (below).

APPENDIX 2 - 1:20,000 TRIM MAPS

1 map (93L089) illustrating the reach breaks, sampling sites with NIDs, ILPs and stream classification for applicable watersheds