

**Fish and Fish Habitat Inventory
for
Operational Areas
Fulton River Watershed**

**Tanglechain IRM Unit:
CP 435-2 and CP 435-3**

Prepared by

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for

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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	13
Total Sample Sites	12
Field Sampling Dates	June 25, 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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1.0 INTRODUCTION

The study area is located in the Fulton 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 435-2 and CP 435-3.

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 harvest areas,
- 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 north-central British Columbia, and forms part of the Morice Forest District (Prince Rupert Forest Region). The main drainage in the Tanglechain IRM is the Fulton River, which drains into Babine Lake. The study area for this project focused around proposed harvest in CP 435-2 and CP 435-3 (previously CP 435-3 and CP 435-4, respectively). Streams potentially impacted by harvest in CP 435-2 and CP 435-3 drain via Broughton Creek or directly into the Fulton River, and are located in the moist-cold subzone of the sub-boreal spruce biogeoclimatic zone SBS mc² (MOF 1988).

Figure 1. 1:250,000 NTS map (93L) showing the general location of the study area.

2.2 Access

All of the stream survey sites were accessed by road and on foot. No helicopter access was required. 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.

2.3 Resource Use

The study area within the Tanglechain IRM unit is utilized for forestry purposes, with active logging being proposed for the next 3 years in the immediate study area. No range use plans or range permits were noted for the study area, and a Land Use Planning Document was not available at the time of writing. The Tanglechain IRM unit 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 adjacent to 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). The guide and outfitter territories in the study area is 608G006. Trapline territories relevant to the study are 608T008 and 608T012.

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 Tanglechain IRM unit (Meredith pers.com.).

3.0 METHODS

3.1 Literature Review

All pertinent literature on the streams inventoried in this project were collected and summarized. Existing data pertaining to stream classification in the Fisheries Information Summary System (FISS), and rivers and lakes files at the B.C. Environment Office (Skeena Region) were summarized and mapped. The information of concern pertained primarily to

fish distribution. Existing watershed codes were assigned to streams. For streams where no watershed codes exist, codes were generated following guidelines in “A guide to the hierarchical watershed coding system for British Columbia”. Interim Locational Points (ILP’s) were assigned, following RIC guidelines (RIC 1997). UTM’s at the mouth of each stream were determined from the watershed code dictionary or from 1:50,000 or 1:20,000 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 1:50,000 NTS map sheets, and air photographs (approx. 1:16,000). The identification of reach breaks followed RIC standards (RIC 1997). Reach breaks were confirmed in the field, when feasible. Reaches are 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

All sites were accessible by road and on foot; no helicopter access was required. Sections of streams in areas of development identified by HFP, with no previous indication of fish presence, were walked and reach breaks were verified. In addition, lower reaches of some systems were assessed to determine the extent of fish distribution in relevant areas. This information was required to allow interpretation of potential downstream impacts on fish and fish habitat. At representative sites, the following stream characteristics were measured: channel width, wetted width, pool depth, riffle depth, pool:riffle ratio, gradient (Suunto clinometer), temperature (ambient and water), pH (Oaktron pH.Tstr2, pHep 3), substrate composition (including D₉₀), aspect, valley:channel ratio, bank stability, bank material, and cover. Conductivity was recorded with a hand held Hanna HI 9033 conductivity meter for every reach in which electroshocking was conducted. All data were collected on MOE/DFO stream survey cards, following RIC standards, and data were entered into an MsAccess database. Fish presence was ascertained by electroshocking with a Smith-Root Model 15C backpack electroshocker. An area of approximately 100 m² was sampled by electroshocking, and fish captured were identified to species, measured (fork length) and released. Potential or known barriers to fish migration, sensitive sites, and critical fish habitat were identified and mapped, when possible. A photographic record was taken for sample locations, barrier, 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 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/maps with study site/NID numbers is included in Appendix 2.

Note: 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 Lake Tributary

Watershed code: 480-6972
Date surveyed: June 25, 1997

Broughton Creek and an unnamed tributary stream to Fulton Lake were inventoried. These two streams enter the northern shore of Fulton Lake in close proximity to one another. Based on the information gathered for operational inventory during this inventory project, the rainbow trout population(s) captured in these two systems are likely fluvial-adfluvial, migrating between the Fulton River and these tributaries. No fisheries information could be located for either system. cursory information for Fulton River and Fulton Lake are summarized below to place the two tributaries 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 (*Catostomus 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 Appendix 1. 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 watersheds inventoried for this project drain into Fulton Lake upstream of the water fall on the outlet of the lake, and are therefore not accessible to anadromous salmonids. However, fisheries data for Chapman Lake (located along 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 Broughton Creek (480-6972-216)

Watershed Code: 480-6972-216
Map # / ILP #: 93 L 088 / N.A.
UTM (at mouth): 9.6079764.663975
Length surveyed: 700 m
Estimated number of reaches:
Number of reaches examined: 1

Broughton Creek drains into the northern shore of Fulton Lake (Appendix 2). Most of the streams located adjacent to or near CP 435-2 and CP 435-3 are tributaries to this system. Broughton Creek was sampled at a site downstream of proposed harvest in CP 435-2 and CP 435-3 to document fisheries resources located downstream of the harvest area.

Reach 1

NID # / NID Map #:	02018 / 93L088	Site #:	1
Length of Reach:		Stream Order:	3
Length surveyed:	700 m	Channel Width:	4.7 m
		Gradient:	3%

Initial Sampling: June 25, 1997
Fish presence: rainbow trout

Reach Classification: S3
Recommended Reach Classification: S3

A sample site was established approximately 100 m downstream of a wetland reach near CP 435-3. Excellent fish rearing and some fish spawning habitat was present at the site. Four juvenile rainbow trout were captured in 335 s. of electroshocking, and four other fish (species unknown) were noted. Game trails were observed along the edge of the riparian zone. A gully with steep side slopes was noted on the western side of the reach.

4.1.1.1 Unnamed Creek (480-6972-216-318)

Watershed Code:	480-6972-216-318
Map # / ILP #:	93 L 088 / N.A.
UTM (at mouth):	9.6084750.663915
Length surveyed:	500 m
Estimated number of reaches:	
Number of reaches examined:	2

This stream drains along the western boundary of CP 435-3. One of its tributaries (480-6972-216-318-bb1) forms the northern border of CP 435-2. A second tributary (480-6972-216-318-bb2) drains through CP 435-3. Two reaches in the mainstem along CP 435-3 were sampled. This stream is referred to as Stream "D" and Stream "C" on the SP map.

Reach 1

NID # / NID Map #:	02026 / 93L.088	Site:	2
Length of Reach:	400 m	Stream Order:	1
Length surveyed:	400 m	Channel Width:	1.5 m
		Gradient:	5%

Initial Sampling: June 25, 1997
Fish presence: none captured

A sample site was located approximately 150 m upstream of the reach break, along the western boundary of CP 435-3. Some fish rearing and potential spawning habitat was identified at the site. However, no fish were captured or observed in 240 s. of electroshocking (100 m²). The second reach in the system consisted of series of beaver dams which may restrict fish access to this reach.

Re-sampling in a second season may allow for the reduction of stream classification to S6. However, there are potential fisheries resources in reach 1 and in Broughton Creek, downstream of this site.

4.1.1.1.1 Unnamed Creek (ILP 02011)

Watershed Code:	480-6972-216-318-bb1
Map # / ILP #:	93 L 088 / 02011
UTM (at mouth):	9.663252.6085446
Length surveyed:	100
Estimated number of reaches:	2
Number of reaches examined:	1

This stream drains along the eastern half of the northern boundary of CP 435-2, and is referred to as stream “B” on the SP map. The stream is not shown on 1:50,000 NTS map sheets, and a watershed code was generated for it.

Reach 1

NID # / NID Map #: - / -	Site #: -
Length of Reach:	Stream Order: 1
Length surveyed:	Channel Width:
	Gradient:

Initial Sampling:	not sampled
Fish presence:	unknown

Reach Classification:	S4
Recommended Reach Classification:	S4 default / W1

This reach was located in a wetland. A series of beaver dams present in this reach may restrict fish passage.

No sample site was established in this reach since the reach can be classified S4 by default, and the wetland can be classified W1.

Reach 2

NID # / NID Map #:	02028 / 93L.088	Site #:	5
Length of Reach:	1600	Stream Order:	1
Length surveyed:	880	Channel Width:	1.1 m
		Gradient:	2

Initial Sampling: June 25, 1997
Fish presence: none - barrier located 180 m upstream of reach break

Reach Classification: S4 default
Recommended Reach Classification: **S6 upstream of waterfall**

A 0.8 m high waterfall (NID 02101) was identified as a barrier to fish migration about 180 m upstream of the reach break. The stream is intermittent, and offers only limited fish habitat.

The potential for downstream impacts on fish habitat from harvest in CP 435-2 is limited due to the intermittent nature of the stream, and the wetland nature of reach 1.

4.1.1.1.2 Unnamed Creek (ILP 02012)

Watershed Code:	480-6972-216-318-bb2
Map # / ILP #	93 L 088 / 02012
UTM (at mouth):	9.663202.6085519
Length surveyed:	100
Estimated number of reaches:	
Number of reaches examined:	1

Reach 1

NID # / NID Map #:	02029 / 93L.088	Site #:	3
Length of Reach:	1300 m	Stream Order:	1
Length surveyed:	100 m	Channel Width:	0.6 m
		Gradient:	2 %

Initial Sampling: June 25, 1997
Fish presence: no fish habitat

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

This stream drains in a southerly direction through CP 435-3. A road crossing has been proposed for this reach. No fish habitat was observed in this reach, and no electroshocking was conducted. The stream is intermittent.

A road crossing has been proposed for this reach. S6 classification is recommended due to the lack of fish habitat, and the intermittent nature of this reach. The potential for downstream impacts are limited due to the wetland located downstream.

4.1.1.2 Unnamed Creek (ILP 02009)

Watershed Code:	480-6972-216-bb1
Map # / ILP #:	93 L 088 / 02009
UTM (at mouth):	9.663903.6085335
Length surveyed:	160 m
Estimated number of reaches:	
Number of reaches examined:	2

This stream flows adjacent to the eastern boundary of CP 435-3. One of its tributaries (480-6972-216-bb1-bb1) forms part of the north-eastern border of CP 435-3, and is referred to as Stream “A” on the SP map. Two reaches in the mainstem near CP 435-3 were sampled.

Reach 1

NID # / NID Map #:	02021 / 93L.088	Site:	6
Length of Reach:	100 m	Stream Order:	1
Length surveyed:	60 m	Channel Width:	0.8 m
		Gradient:	3%

Initial Sampling:	June 25, 1997
Fish presence:	none captured

Reach Classification:	S4
Recommended Reach Classification:	S4

This reach was sampled approximately 50 m upstream from the confluence with Broughton Creek. The reach consists of a series of steps, which may impede fish passage and the stream has short sections of underground flow. Electroshocking for 200 s. did not result in the capture of any fish.

S4 stream classification is recommended until re-sampling in the fall confirms fish absence from this reach. Care should be taken during the construction of the proposed road crossing to minimize potential downstream impacts on Broughton Creek.

Reach 2

NID # / NID Map #:	02022 / 93L.088	Site #:	8
Length of Reach:		Stream Order:	1
Length surveyed:	100 m	Channel Width:	no defined channel
		Gradient:	<0.5%

Initial Sampling: June 25, 1997
Fish presence: unlikely

Reach Classification: no defined channel
Recommended Reach Classification: no defined channel

This reach is located in a wetland, and no defined channel could be located. The nature of this reach presents a barrier to fish migration.

No stream classification is required, however, wetland classification is needed.

4.1.1.2.1 Unnamed Creek (ILP 02010)

Watershed Code:	480-6972-216-bb1-bb1
Map # / ILP #:	93 L 088 / 02010
UTM (at mouth):	9.663866.6085664
Length surveyed:	100
Estimated number of reaches:	
Number of reaches examined:	1

This reach forms part of the eastern boundary of CP 435-3, and is referred to as Stream "E" on the SP.

Reach 1

NID # / NID Map #:	02023/93L.088	Site #:	7
Length of Reach:		Stream Order:	1
Length surveyed:	100 m	Channel Width:	1.2 m
		Gradient:	2

Initial Sampling: June 25, 1997
Fish presence: unlikely

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

This reach presented limited potential fish habitat. The wetland located downstream of this reach has been identified as a barrier to fish migration, due to the lack of a defined channel.

The potential for downstream impacts on fish and fish habitat is limited due to the wetland located downstream.

4.1.1.3 Unnamed Creek (480-6972-216-379)

Watershed Code: 480-6972-216-379
Map # / ILP #: 93 L 088 / N.A.
UTM (at mouth): 9.6085256.664551
Length surveyed: 200 m
Estimated number of reaches: 1
Number of reaches examined: 1

This stream is a second order tributary to Broughton Creek which is crossed by a road accessing CP 435-3. The first reach in this stream was sampled near the road crossing.

Reach 1

NID # / NID Map #:	02024&02025 / 93L.088	Site #:	9&10
Length of Reach:	640 m	Stream Order:	2
Length surveyed:	100 m	Channel Width:	3.1-3.4 m
		Gradient:	2-3%

Initial Sampling: June 25, 1997
Fish presence: rainbow trout

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

A sample site was established approximately 50 m below the road crossing (Site 10, NID 02025), and a second site was established 50 m upstream of the crossing (Site 9, NID 02024). Five rainbow trout were captured below the crossing in three minnow traps set overnight (16 hours). Twelve juvenile rainbow trout were captured in 16 hours of minnow trapping (2 traps) upstream of the crossing. Fork lengths ranged from 68 mm to 107 mm. The water temperature in the system was unusually warm (17°C). Good fish rearing habitat and some potential fish spawning habitat was identified at both sites.

Elevated water temperatures noted in this reach indicate that the system may be sensitive to the removal of riparian vegetation. The existing culvert was impeding fish passage at the time of survey.

4.1.2 Unnamed Creek (480-6972-240)

Watershed Code: 480-6972-240
Map # / ILP #: 93 L 088 / N.A.
UTM (at mouth): 9.6081003.661981
Length surveyed: 300 m
Estimated number of reaches:
Number of reaches examined: 2

This Unnamed Creek drains into the northern shore of Fulton Lake, approximately 2250 m west of Broughton Creek (Appendix 1). The north-western corner of CP 435-2 is located adjacent to this stream.

Reach 3

NID # / NID Map #:	02020 / 93L.088	Site #:	11
Length of Reach:	200 m	Stream Order:	1
Length surveyed:	200 m	Channel Width:	no defined channel
		Gradient:	

Initial Sampling: June 25, 1997
Fish presence: unlikely

Reach Classification: no defined channel
Recommended Reach Classification: no defined channel

This reach is characterized by a low gradient section of bog, and lacks a defined channel. This reach is a barrier to fish migration.

Reach 4

NID # / NID Map #:	02019 / 93L.088	Site # :	12
Length of Reach:	1400 m	Stream Order:	1
Length surveyed:	100 m	Channel Width:	0.9 m
		Gradient:	3%

Initial Sampling: June 25, 1997
Fish presence: unlikely

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

This reach presented only limited fish habitat.

S6 classification is recommended due to the nature of the downstream reach impeding fish passage. The potential for downstream impacts on fish and fish habitat is limited due to the bog located immediately downstream of this reach.

5.0 SUMMARY OF RECOMMENDATIONS FOR STREAM RESAMPLING

5.1 CP 435-3

Unnamed Creek (480-6972-216-318)

Refer to Report Section:	4.1.1.1	Reach /	3 / 4
		Site:	
NID #:	02027	NID map #:	93 L 088

Some fish habitat was noted in this reach, but no fish were captured in 240 s. of electroshocking. Beaver dams located in reach 2 downstream may impede fish passage. Re-sampling in a second season may allow for a change in stream classification from S4 to S6.

Unnamed Creek (ILP 02009)

Refer to Report Section:	4.1.1.2	Reach /	1 / 6
		Site:	
NID #:	02021	NID map #:	93 L 088

The reach consisted of a series of steps which may impede fish passage. No fish were captured in 200 s. of electroshocking. Re-sampling may confirm fish absence and allow for a change in classification from S4 to S6. If re-sampling indicates a lack of seasonal fish use, fish passage at the proposed road crossing will not be a concern, and timing of road crossing installation should not be restricted. However, fisheries resources are located in the mainstem (Broughton Creek) immediately downstream of this reach.

6.0 REFERENCES

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APPENDIX 1 - SITE CARDS

Site cards for all streams inventoried 1997 relevant to cutting permits CP 435-2 and CP 435-3.

Broughton Creek (480-6972-216) - Reach A

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

Unnamed Creek (480-6792-216-318) - Reach 1

Plate 2. Reach 1 - sample site 2. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6972-216-318) - Reach 3

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

Unnamed Creek (ILP 02011; ILP map 93L088) - Reach 2

Plate 4. Reach 2 - sample site 5.
Upstream view (above - left),
downstream view (above - right)
and view of barrier to fish
migration, 180 m upstream of
reach break.

Unnamed Creek (ILP 02012; ILP map 93L088) - Reach 1

Plate 5. Reach 1 - sample site 3.
Upstream view (above - left),
downstream view (above - right)
and view of proposed road
crossing site (right).

Unnamed Creek (ILP 2009; ILP map 93L088) - Reach 1

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

Unnamed Creek (ILP 02009; ILP map 93L088) - Reach 2

Plate 7. Reach 2 - sample site 8. Upstream view (above) and downstream view (below).

Unnamed Creek (ILP 02010; ILP map 93L088) - Reach 1

Plate 8. Reach 1 - sample site 7. Upstream view (above) and downstream view (below).

Unnamed Creek (480-6972-216-379) - Reach 1

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

Unnamed Creek (480-6972-216-379) - Reach 1

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

Unnamed Creek (480-6972-240) - Reach B

Plate 11. Reach B - sample site 12.
Upstream view (above - left),
downstream view (above - right)
and view of road crossing
(right).

APPENDIX 2 - 1:20,000 TRIM MAPS

1 map (93L088) illustrating the reach breaks, sampling sites with NID's, ILP's and stream classification for applicable watersheds