Reconnaissance (1:20,000) Fish and Fish Habitat Inventory of Tributaries to West Shore of Babine Lake Between Newman Island and the Fulton River and an Unnamed Inlet stream to the North Shore of Fulton Lake East of Broughton Creek

Watershed Code: 480, 480-697200-08100

Prepared for

Houston Forest Products Co. Box 5000 Houston, B.C. V0J 1Z0

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March 31, 2002

#### **PROJECT SUMMARY SHEET**

#### PROJECT REFERENCE INFORMATION

MSR Project #: FRBC MYA # FRBC Activity #: FDIS Project #: MSR Region: FW Management Unit: DFO Subdistrict: Forest Region: Forest District: Forest Licensee: Tenure Number: First Nations Claim Area: HFP-SKR-001-2002 CON 0001398 721096 1282 Prince Rupert Region (06) 06-08 Prince Rupert (6) Prince Rupert Morice Forest District Houston Forest Products FLA – 16827 Lake Babine Nation

#### WATERSHED INFORMATION

Watershed Group Watershed Name Watershed Code UTM at Mouth Watershed Area Total of all Stream Lengths Stream Order NTS Maps (1:50,000) TRIM Maps

BEC Zone Air Photos for Study Area

#### SAMPLING DESIGN

Total # of Reaches Random Sampling Sites Discretionary Sample Sites Value Added Sites Total Sample Sites Field Sampling Dates

Fish Species in Watershed

BABL Babine Lake, Fulton River 480, 480-697200 09.650476.6132826, 09.685874.6079110 96 km<sup>2</sup> (study area only) 120.45 (study area only) 3 (study area only) 93L/16 (study area only) 093L.089, 093L.090, 093L.099 (study area only) SBSmc, ESSFmc (study area only) 30BCC96151 No. 92-96, 169-171

126 19 (19 planned) 13 (13 planned) 0 (0 discretionary) 32 (32 planned) July  $18^{th} - 20^{th}$ , 2001; August  $22^{nd}$  and  $23^{rd}$ , 2001 KO, CT, BB, RB, MW, LW, DV/BT, CSU, LSU, CSU, NSC, LT, PCC, CO, CH, PK, SK, CAS, LKC, RSC

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This product has been accepted as being in accordance with the approved standards within the limits of the Ministry quality assurance procedures. Users are cautioned that interpreted information on this product developed for the purposes of the Forest Practices Code Act and Regulations, for example stream classifications, is subject to review by a statutory decision maker for the purposes of determining whether or not to approve an operational plan.

#### ACKNOWLEDGEMENTS

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## LIST OF ATTACHMENTS AVAILABLE AT MELP OFFICE

Digital Project Overview Map Digital Fisheries Project Maps Digital Fisheries Interpretive Maps Photograph Kodak CD's (2 sets) Indexed negatives Digital reports Digital FDIS database

# **1.0 INTRODUCTION**

Portions of the Fulton River watershed, and a series of inlet streams to the west shore of Babine Lake between the Fulton River and Newman Island were surveyed in July 1997, June 1999, July – August 2000, and July – August 2001 to assess fish habitat characteristics and to investigate the diversity, population characteristics and distribution of fish. SKR Consultants Ltd. was retained by Houston Forest Products Co. (Houston, B.C.) to conduct these surveys. The project was jointly funded by Forest Renewal B.C. (FRBC) and Houston Forest Products Co. (HFP), and is a continuation of reconnaissance level fish and fish habitat inventories initiated in 1999 (SKR 2000). This report summarizes results obtained from the reconnaissance level stream inventory project conducted on streams within the Fulton River watershed, and selected Babine Lake inlet streams.

The Fulton watershed was split up into smaller sub-basins according to boundaries obtained from <u>ftp://ftp.env.gov.bc.ca/dist/arcwhse/watershed\_atlas/region6/babl/lwsdbabl</u> (B.C. Environment, 1999b). Preferred planning was done for five of six sub-basins that coincide with the Tanglechain Landscape Unit within HFP's operating area (SKR 1999, 2001d) This portion of the Fulton watershed includes all northern tributaries to Fulton Lake and the lower Fulton River downstream from and including Tanglechain Creek, as well as inlet streams to the west shore of Babine Lake between Fulton River and Newman Island. The sub-basins are:

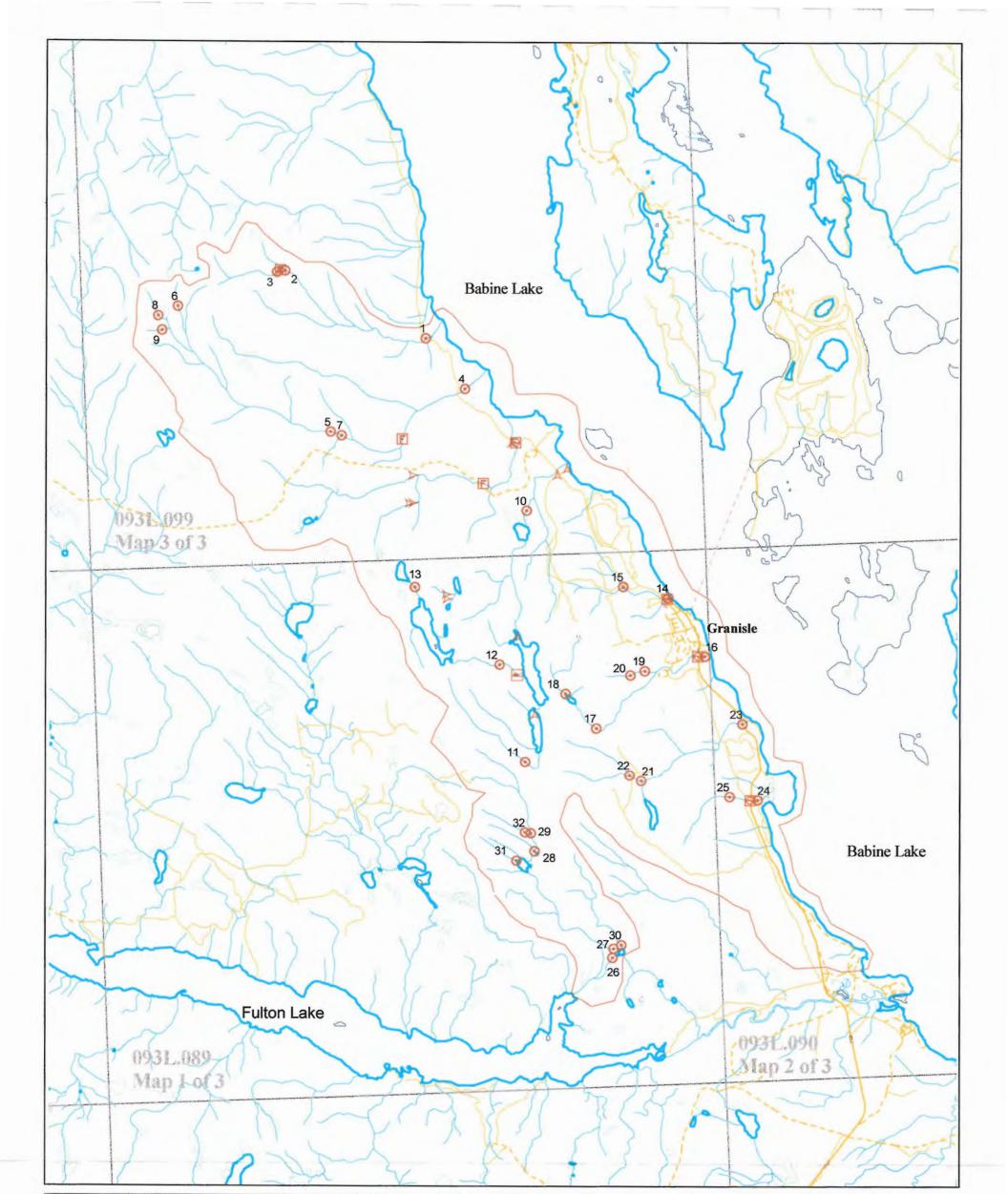
- Sub-basin I Fulton Face Units (480-697200),
- Sub-basin II Unnamed Creek (480-697200-08100),
- Sub-basin III Unnamed Creek (480-697200-11500),
- Sub-basin IV Broughton Creek (480-697200-21600),
- Sub-basin V Unnamed Creek (480-697200-26400),
- Sub-basin VI Tanglechain Creek (480-697200-33400), and
- Sub-basin VII Babine Face Units (480).

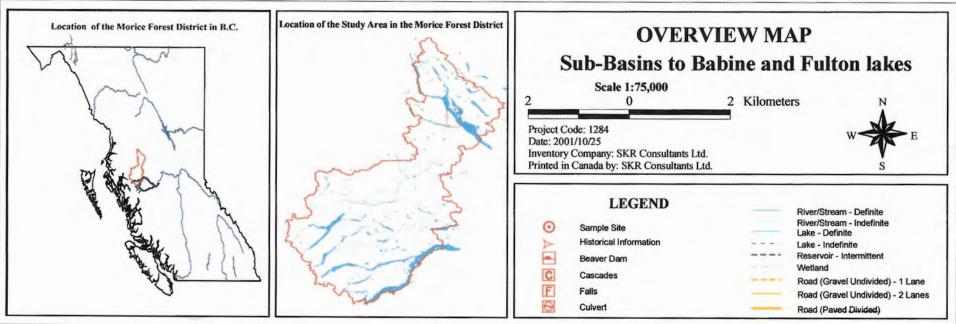
During previous years of sampling, three sub-basins (sub-basins III, IV and VI) were inventoried in 2000 (SKR 2001a, b, c), and two of sub-basins (Sub-basin I and Sub-basin V) were inventoried in 1999 (SKR 2000). The two sub-basins that were inventoried in 2001 were Sub-basin II and Sub-basin VII.

# **1.1 OBJECTIVES**

The main objectives of the reconnaissance (1:20,000) fish and fish habitat stream inventory project within the selected sub-basins of the Fulton River watershed were:

- to review and summarize historical fisheries information for the study area,
- to undertake a reconnaissance level stream inventory to describe fish distribution and diversity,
- to document barriers to fish passage,
- to document fish habitat characteristics,
- to identify further sampling requirements, and
- to classify reaches sampled according to the B.C. Forest Practices Code Fish Stream Identification guidebook (FPC 1998).





# **1.2 LOCATION**

Fulton River drains into the western shore of Babine Lake at Topley Landing, approximately 8.5 kilometers due south-southeast of the village of Granisle (Figure 1). The Fulton watershed, and Babine Lake inlet streams sampled in 2001 are located in the Prince Rupert Region (Ministry of Sustainable Resources), and in the Morice Forest District. The two sub-basins that were sampled in 2001 include an unnamed third order inlet stream to the north shore of Fulton Lake (sub-basin II, watershed code 480-697200-08100), and first, second and third order inlet streams to the west shore of Babine Lake from the Fulton River north to Newman Island.

## 1.2.1 Access

Access within the study area is possible using several modes of transportation including fourwheel drive vehicle, boat, or helicopter. Many reaches within the two sub-basins are accessible by road. For road access, turn off Highway 16 onto the Granisle Highway at Topley, B.C., and travel along the Granisle Highway to the mouth of the Fulton River (just past Topley Landing). Signs for the Fulton River spawning channels clearly landmark the location of the Fulton River along the road. The Granisle Highway proceeds north past Red Bluff Provincial Park, through the village of Granisle and continues to Smithers Landing, allowing access to the lower reaches of inlet streams to the west shore of Babine Lake within the study area. A network of logging roads can be used to access stream reaches in the Babine Face Units from the Granisle Highway. Some of the reaches in sub-basins II and VII could only be accessed by helicopter, which was chartered from Houston, B.C..

# **1.3 HISTORICAL INFORMATION**

The Fulton River drainage forms the largest inlet to Babine Lake. Only the lower six kilometers of Fulton River are accessible to anadromous fish species due to the presence of an 18 meter high waterfall/dam located at the outlet to Fulton Lake (FISS). Coho (*Oncorhynchus kistuch*), chinook (*O. tsawytscha*), sockeye (*O. nerka*), and pink (*O. gorbuscha*) salmon, as well as steelhead (*O. mykiss*), have been documented to spawn in the lower portion of Fulton River, downstream of the falls (FISS). A spawning channel for sockeye salmon, operated by the Department of Fisheries and Oceans, is located approximately 1.5 kilometers upstream of Babine Lake (Karenka, pers. comm.). A wide diversity of species have been documented upstream of the dam including rainbow trout (*O. mykiss*), cutthroat trout (*O. clarki*), Dolly Varden (*Salvelinus malma*; possibly bull trout (*S. confluentus*) (Atagi, pers. comm.)), lake trout (*S. namaycush*), kokanee (*O. nerka*), mountain whitefish (*Prosopium williamsoni*), lake whitefish (*Coregonus clupeaformis*), burbot (*Lota lota*), largescale sucker (*Catastomus macrocheilus*), longnose sucker (*C. catastomus*), white sucker (*C. commersoni*), northern pike minnow (*Ptychocheilus oregonensis*), peamouth chub (*Mylocheilus caurinus*), lake chub (*Couesius plumbeus*), redside shiner (*Richardsonius balteatus*), and prickly sculpin (*Cottus asper*) (FISS).

Fish and fish habitat inventory at the reconnaissance level (1:20,000) was completed for subbasins I and V in 1999 (SKR 2000), and sub-basins III, IV and VI in 2000 (SKR 2001c). Historical information that pertains specifically to the two sub-basins in the current year of the study is relatively sparse. No historical information exists for sub-basin II, but some operational inventory has resulted in sampling of six reaches in sub-basin I (SKR 1997), and previous lake inventories have documented the presence of Dolly Varden and rainbow trout in Bonehead (ILP 51154, WBID 0967BABL) and Skinhead (ILP 51149, WBID 0812BABL) lakes (FISS).

# 2.0 RESOURCE USE

The study area within the Fulton watershed is public land and as such is utilized by several resource sectors.

- 1. First Nations issues and interests in the study area:
  - The Lake Babine Nation has claimed portions of the Tanglechain Landscape unit as part of their traditional territories. The Lake Babine Nation is currently in stage three of the Treaty Negotiation Process (B.C. Treaty Commission 2000).
- 2. Development and land use: logging, mining, recreation
  - Houston Forest Products Ltd. is the main licensee for the unit.
  - Logging and/or road building is proposed to the year 2003 near the stream survey sites examined in this report (HFP 1998).
  - The study area has some recreational value, including snow mobiling, a B.C. 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 Trial (about 6 km north of the village of Granisle), a BCFS recreation site at Tanglechain Lake, Doris Lake, and Pine Tree Lake (MOF 1997), and a provincial park at Red Bluff.
  - The guide outfitter territory in the study area is 608G003, and the three trap line territories is 608T008. The study area within the Fulton watershed is located in the Fulton Lake Range permit (HFP 1999).
  - There are no mineral tenures, placed stakes, or coal licenses in the study area (Ministry of Employment and Investment 2000).
- 3. Other developments, concerns or points of interest:
  - No higher level plans are known to exist within the Tanglechain Landscape Unit (Land Use Coordination Office 2000).
  - Two water licenses exist for the Fulton River and are summarized in Table 1 (BC Environment 2000). No community watersheds are located in the study area (BC Environment 1999a pers. comm.)
- 4. Impacts and uses by wildlife:
  - A comprehensive inventory of wildlife species does not exist for the Morice Forest District. However, several rare and endangered wildlife species are known or suspected to utilize habitat in the Fulton River area, including Grizzly bear (*Ursus arctos*), wolverine (*Gulu gulu luscus*), fisher (*Martes pennanti*), trumpeter swan (*Cyngus buccinator*). Other wildlife species of interest include moose and mule deer.
- 5. Existing water quality data:
  - Water quality data exists for a deep station on Fulton Lake (EMS # E223349) (Giroux 1999 pers. comm.)
- 6. Previous presence of fish in systems of interest:
  - Fish presence previously documented in the study area is summarized in Table 2.
- Table 1.Water licenses information for selected areas in the Tanglechain Landscape Unit<br/>(B.C. Environment 1999a).

Date	File # <sup>1</sup>	Operator	Amount	Comments
1965/10/22	C031323	Fisheries and Oceans	200.00 CS	Fulton River
1965/10/22	C031324	Fisheries and Oceans	76,000.00 AF	Fulton River

<sup>1</sup> File number preceded by C indicate approved water licenses, file number preceded by Z indicate applications for water licenses)

Table 2.	A summary of fish previously documented to be present in streams and lakes in the
	Fulton River watershed, and Babine Lake inlet streams.

Species Code Area Located			Date	Reference
coho salmon	СО	below 18 m falls at outlet to Fulton Lake; Babine Lake and inlet streams	unknown	FISS
chinook salmon	СН	below 18 m falls at outlet to Fulton Lake; Babine Lake and inlet streams	unknown	FISS
pink salmon	РК	below 18 m falls at outlet to Fulton Lake; Babine Lake and inlet streams	unknown	FISS
sockeye salmon	SK	below 18 m falls at outlet to Fulton Lake; Babine Lake and inlet streams	unknown	FISS
kokanee	KO	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
lake trout	LT	Tanglechain Lake, Doris Lake, Fulton Lake; Babine Lake	unknown	FISS
burbot	BB	Doris Lake, Fulton Lake; Babine Lake	unknown	FISS
lake whitefish	LW	Tanglechain Lake, Doris Lake, Fulton Lake; Babine Lake	unknown	FISS
mountain whitefish	MW	Tanglechain Lake, Doris Lake, Fulton Lake; Babine Lake	unknown	FISS
rainbow trout	RB	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
cutthroat trout	CT	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
Dolly Varden	DV	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
largescale sucker	CSU	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
longnose sucker	LSU	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
white sucker	WSU	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
northern pike minnow	NSC	Tanglechain Lake, Doris Lake, Pine Lake, Fulton Lake; Babine Lake	unknown	FISS
peamouth chub	PCC			FISS
prickly sculpin	CAS	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
redside shiner	RSC	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
lake chub	LKC	throughout Fulton watershed; Babine Lake and inlet streams	unknown	FISS
bull trout	BT	potentially present	unknown	Atagi, pers. comm.

# **3.0 METHODS**

This project closely follows all applicable RIC Standards (1998a, 1999, 2000, 2001) and the Forest Practice Code fish - stream identification guidebook (FPC 1998). Details on methodologies and value-added attributes of sampling site selection, field assessments, and digital mapping are provided in the following sub-sections.

# 3.1 SAMPLE SITE SELECTION

Sample sites were selected by conducting reach break analysis and random sampling queries using the Fish Data Information System (FDIS 7.0) ACCESS 2.0 data tool for each of the subbasins in the study area. All streams on the 1:20,000 TRIM map scale were identified numerically by assigning an Interim Location Point (ILP) or watershed code, following 1:20,000 fish and fish habitat inventory standards (RIC 1998a, 1999). Streams were divided into reaches based on map and air photo interpretation. Necessary reach information was entered in the FDIS database, following Resource Inventory Committee standards (RIC 1998a, 1999). Version 7.0 of the FDIS ACCESS 2.0 data tool was used to randomly select sampling sites to determine the general distribution and total number of sites required in the study area for the Babine Face Units (sub-basin VII) (SKR 1999), and FDIS Version 7.2 was used to select random sample sites for sub-basin II (SKR 2001d). Some sites were deleted or moved based on previous fish sampling in the watershed and site accessibility. Random and biased sampling sites were mapped on 1:20,000 scale, along with existing fisheries information for presentation to the contract monitor and the ministry representative. The sampling plan was summarized in a project plan (SKR 1999, SKR 2001d) for ministry and contract monitor approval.

# 3.2 STREAM ASSESSMENT

All stream assessments were conducted in July and August 2001. Stream sites were accessed by four wheel drive vehicle, helicopter and foot. Stream sections of interest were assessed to determine fish presence and habitat values. Fish Data Information System (FDIS) site cards and fish collection cards were completed at sample sites, following Resource Inventory Committee Standards (RIC 2001), and data were entered into the FDIS database using the FDIS data entry tool (version 7.2).

All fish that were captured during this study were identified to species in the field or small subsamples were preserved for confirmation using a dissecting microscope (McPhail and Carveth, 1994). Fork lengths were recorded for all fish captured. Scale samples were collected for a subsample of salmonids captured in the watershed. Voucher specimens were retained for representative fish samples. Voucher specimens were preserved in 10% formalin for a minimum of 14 days after which they were rinsed in water and transferred to 50% isopropyl alcohol. Voucher samples were submitted to the Ministry of Sustainable Resources for species verification (Appendix 3).

A list of sampling equipment used during this 1:20,000 reconnaissance level fish and fish habitat inventory project is presented in Table 3.

**Table 3.** List of sampling equipment for stream reaches used during the 1:20,000 reconnaissance fish and fish habitat inventory project in Unnamed Creek (watershed code 480-697200-08100), and selected Babine Lake inlet streams that was conducted in July and August 2001.

Parameter	Sampling Intensity	Method
date and time	each site	wrist watch
water temperature	each site	alcohol thermometer
pН	each site	Oaktron pHTestr2
conductivity	each site	Hanna HI 9033, Oaktron TDSTestr 3
water clarity	each site	Visual
fish presence	as required to determine	Smith Root Model 15C, Smith Root Model
	fish presence	12B, minnow traps
photography	each site	Canon Sureshot A1
GPS	where available	Garmen GPS 45
Gradient	each site	Abney Level or Suunto clinometer

# 3.3 MAPPING

Reach break analysis was conducted during phase II of this reconnaissance (1:20000) fish and fish habitat inventory project (RIC 1998a) by SKR Consultants Ltd. (SKR) and Western Geographic Information Systems Inc. (WGIS)(SKR 1999). The majority of reach break information for the FDIS database was obtained from TRIM map and air photograph interpretations by SKR. WGIS provided lengths, gradients, and UTM coordinates for all reaches in the study area after linking new spatial data to TRIM map data that was obtained from the FTP//...TRIM library (MELP). All reach break mapping closely followed the RIC standards for reach analysis (1998a) and digital mapping (1998b).

Mapping during phase III of the project was completed by SKR Consultants Ltd. using the Fish Inventory Mapping System (Geosense Consulting Ltd. 2000). Data presented on the maps included sub-basin boundaries, sample site locations, significant features, and historical information within the study area. In addition, SKR identified reaches with known fish presence, suspected fish presence, and known fish absence for presentation of fish distribution on the interpretive maps. The criteria used by SKR for determining fish presence and absence are presented in Table 4.

**Table 4.**Criteria used to evaluate fish distribution for presentation on the Fisheries<br/>Project/Interpretive Hardcopy Maps (Appendix 5) of this study area.

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Fish Present	<ul> <li>Stream reaches where fish have been captured or can be classified as fish bearing based on fish captured upstream.</li> <li>NOTE: fish distribution may not always extend to the upper limit of all reaches symbolized as fish bearing</li> </ul>
Fish Suspected Present	• Stream reaches with gradients less than 21% and with any potential for fish presence, excluding first order streams less than 1 km in length on 1:20000 TRIM map
Fish Suspected Absent	<ul> <li>First order streams less than 1 km in total length on 1:20000 TRIM map</li> <li>Streams visited with limited potential for fish presence, but no definable barriers to fish passage following RIC standards, thus still requiring resampling</li> </ul>
Fish Absent	<ul> <li>Reaches with no fish captured in two seasons upstream of natural obstructions to fish migration</li> <li>Reaches upstream of identified natural barriers to fish migration following intensive sampling in one season</li> <li>First and small second order streams flowing into non fish bearing reaches</li> <li>Reaches with gradients exceeding 20% (Note: the location of lower reach break is not defined until field sampling is conducted)</li> </ul>

# 4.0 RESULTS AND DISCUSSION

Thirty-two of the 126 reaches in Sub-basins II and VII within the Fulton River and Babine Lake watershed were sampled in July and August 2001. This includes 19 reaches randomly selected by FDIS and 13 discretionary reaches added to augment fish distribution information obtained in this and previous studies (SKR 1997, FISS). The following sections discuss findings from this field inventory project in context with historical information available for the Fulton River watershed, as outlined in the "Buba Creek Example Report" (MSR 2001).

# 4.1 LOGISTICS

Access to many of reaches sampled was difficult. Ten of the reaches sampled (31.3%) were accessed by helicopter and eight reaches (25%) were accessed on foot, since road access was not available to these sites. Helicopter landing sites are relatively abundant due to the gently sloped terrain, and there is an abundance of wetlands throughout the study area.

# 4.2 SUMMARY OF SUB-BASIN BIOPHYSICAL INFORMATION

Tributaries to the Fulton watershed inventoried in this study are located in the Humid Continental Highlands Ecodivision of the Humid Temperate Ecodomain. Within the Sub-Boreal Interior Ecoprovince, these tributaries are found within the Fraser Basin Ecoregion of the Babine Upland Ecosection (Meidinger and Pojar 1991, Ministry of Forests 2001). The streams in the study area are characterized by the Moist Cold Subzone of the Sub-Boreal Spruce Biogeoclimatic Zone (Meidinger and Pojar 1991, Ministry of Forests 2001). Table 5 provides a summary of watershed information for the seven sub-basins in the study area. The two subbasins that were field inventoried in 2001 were Sub-basin II and Sub-basin VII.

# 4.2.1 Sub-basin II

Sub-basin II consists of a small, third order system that drains an area of approximately 1290 hectares. This sub-basin is characterized primarily by low to moderate stream gradients with no steep gradient reaches (reach gradient determined from TRIM ranged between 0.13 and 6.7%). Channel patterns are typically sinuous while confinement ranges from unconfined to frequently confined. No ice or steeplands are present in Sub-basin II, but five wetlands and one lake are present.

Conductivity, pH, water temperature, and turbidity were the water quality parameters that were recorded where possible. Conductivities ranged from 90  $\mu$ S/cm to 140  $\mu$ S/cm and water temperatures ranged between 10°C and 15°C. Water was clear at all sampling locations and pH readings ranged from 7.2 to 7.4. Water quality data related to specific sampling sites can be located in Appendix I.

#### Results and Discussion

Table 5.	Summary	y of watershed	information	for the sever	n sub-basir	ns identified	l within the	Tanglechain ]	Landscape Unit.

1

Sub-basin	Gazetted Name	Watershed Code	Watershed Area (ha)	Stream Length (km)	Stream Order	NTS Maps	BEC Zone	Lake Names	Wetlands
Sub-basin I	Fulton Face Unit UTM: 9.683402.6077850	480-697200	7470	102.74	1, 2, 3	93L/16	SBSmc	Saturday (15 ha)	21 areas (160 ha)
Sub-basin II	Unnamed Creek UTM: 9.676817.6077967	480-697200-08100	1290	10.83	3	93L/16	SBSmc	Unnamed	5 areas (22.4 ha)
Sub-basin III	Unnamed Creek UTM: 9.673320.6077132	480-697200-11500	3290	51.28	4	93L/16	SBSmc	none	7 areas (1.05 ha)
Sub-basin IV	Broughton Creek UTM: 9.663978.6080282	480-697200-21600	5378	101.27	4	93L/16	SBSmc/ ESSFmc	none	44 areas (303 ha)
Sub-basin V	Unnamed Creek UTM: 9.659835.6082277	480-697200-26400	598	5.46	3	93L/16	SBSmc	none	1 area (2.5 ha)
Sub-basin VI	Tanglechain Creek UTM: 9.656096.6084339	480-697200-33400	10605	179.28	5	93L/16	SBSmc	Tanglechain, Doris, Boomerang, Pine Tree	46 areas (226 ha)
Sub-basin VII	Babine Face Unit UTM: 9.650476.6132826	480	8323	109.3	3	93L/16	SBSmc	Skinhead Bonehead	19 areas (76 ha)

Note: Bold text refers to sub-basins that were sampled in 2001; italic text refers to sub-basins that were sampled in 2000 (SKR 2001c), and regular text refers to sub-basins inventoried in 1999 (SKR 2000).

## 4.2.2 Sub-basin VII

Sub-basin VII encompasses first, second and third order inlet streams to the west shore of Babine Lake from the Fulton River north to Newman Island. This area covers approximately 8323 ha. As for sub-basin II, this sub-basin is characterized by a predominance of low to moderate gradient reaches, although some steeper gradient reaches, with gradients exceeding 20% are found in this area. Channel patterns are typically sinuous while confinement ranges from unconfined to confined with the majority of reaches being occasionally or frequently confined. No ice or steeplands are present in Sub-basin VIII, but 19 wetlands and four lakes are present.

Conductivity, pH, water temperature, and turbidity were the water quality parameters that were recorded where possible. Conductivities ranged from 60  $\mu$ S/cm to 250  $\mu$ S/cm and water temperatures ranged between 7°C and 14°C. Water was clear at all sample sites, and pH readings ranged from 7.1 to 8.0. Water quality data related to specific sampling sites can be located in Appendix I.

# 4.3 HABITAT AND FISH DISTRIBUTION

Fish were confirmed to be present in approximately 20.07 kilometers of stream in the study area, which has approximately120.45 kilometers of first, second and third order streams shown on the 1:20,000 TRIM maps. Habitat quality in most of the first order reaches sampled was poor or absent, with three of the 14 first order reaches being dry, and four of being classified as NCD. Habitat quality tended to improve in higher order reaches, and third order reaches were fish bearing or suspected to be fish bearing, except third order reaches in ILP 40216, upstream of a 5 meter falls in reach 2 of the system, and in ILP 40229 upstream of a 3 meter falls at the upper extent of reach 1 (Table 6). Fish distribution in higher order reaches was generally limited by the few natural topographic barriers (i.e. falls, cascades, etc.) or anthropogenic causes that were identified in the study area, rather than limited habitat quality which tended to be the case in the majority of first order reaches (Table 6).

			· .		Barrier						
ILP	TRIM map #	Reach	Type	Height (m)	Verified in field	Description					
Sub-basin II (Unnamed Creek)											
ILP 40309	93L.089	1	NDC		Y	No defined channel					
ILP 40310	93L.089	1	NDC		Y	No defined channel					
			Sub	-Basin	VII (Ba	bine Face Units)					
ILP 40216	93L.099	2	F	5	Y						
ILP 40229	93L.099	1	F	3	Y	At upper extent of reach					
ILP 40334	93L.089	1	BD	2	Y	135 m upstream of lake					
ILP 40347	93L.089	1	CV	0.7	Y	Likely not a barrier, but obstructs passage at some flows					
ILP 40353	93L.089	1	CV	1.5	Y	Barrier to fish passage					
ILP 40363	93L.090	1	CV	0.8	Y	Barrier to fish passage					
ILP 40399	93L.099	1	C	8	Y	22% gradient, 40 m long cascade at confluence					

Table 6.Summary of historic and new barriers and to fish migration and features found in<br/>Sub-basin II and Sub-basin VII (sorted by sub-basin, ILP and reach number).

FSB = underground flow, NDC = no defined channel, NVC = no visible channel, CV = culvert, C = cascade, F = falls, D = dam

Within the Fulton watershed, anadromous fish species distribution is limited by an 18 meter falls at the outlet to Fulton Lake (SKR 2000 FISS). Anadromous fish therefore have access to inlet streams to Babine Lake within the Babine Face Units (Sub-basin VII), but are prevented from accessing the third order tributary to the north shore of Fulton Lake which constitutes sub-basin II. Fish distribution in three of the inlet streams to Babine Lake is limited by topographic barriers (falls, cascades), and anthropogenic barriers along the Granisle Highway limit fish access to the lower reach within several of the inlet streams to Babine Lake sampled in July and August 2001. The generally moderate to gentle sloped topography of the remainders of the systems sampled allows for fish access to all but the smallest reaches (generally first order), which are limited by sections of seepage flow, and poor habitat quality.

The amount and quality of suitable fish habitat in sub-basins II and VII sampled in July and August 2001 was relatively low, when compared to other sub-basins in the Fulton River watershed, particularly Tanglechain Creek (SKR 2000, 2001a). This is partly due to the relatively small size of the systems sampled, since the highest stream order in the two sub-basins was 3<sup>rd</sup> order. Generally, fish habitat quality and quantity appeared to be greater in sub-basin VII than in sub-basin II, which is partly attributable to the larger size of the sub-basin. Of the seven reaches sampled in sub-basin II, the best quality fish habitat was noted in the mainstem (ILP 40314, 3<sup>rd</sup> order system) reaches 8 and 9. Reach 8 (site 28) consisted of a beaver pond area which provided good overwintering and rearing habitat, and reach 9 (site 29) offered good rearing, spawning and overwintering habitat. Reach 9 of ILP 40314 was the only capture location for fish in sub-basin II. Fish habitat quality in second or first order tributaries to ILP 40314 that were sampled was generally very poor to non-existent. Good quality, accessible fish habitat was noted in several reaches in sub-basin VII, and was generally found in the lower reaches of 3<sup>rd</sup> and some 2<sup>nd</sup> order inlet streams to Babine Lake. Excellent rearing and spawning habitat, along with good overwintering habitat was present in reach 1 of ILP 40208 (site 1), a 2<sup>nd</sup> order inlet stream to Babine Lake with an average channel width of 3.60 meters. Reach 1 of ILP 40216 (site 4), a third order inlet stream to Babine Lake with an average channel width of 4.05 meters, also provided excellent rearing and spawning habitat, along with good overwintering habitat. Excellent spawning and rearing habitat was documented in reach 1 of ILP 40356 (site 23), a 2<sup>nd</sup> order inlet stream to Babine Lake. The greater number of third and second order reaches generally resulted in more abundant and higher quality fish habitat in sub-basin VII when compared to sub-basin II sampled in July to August 2001.

Overall, Sub-basin II and Sub-basin VII appear to contain a low amount of usable fish habitat based on Tables 7 to 9 and Figure 2. A total of 0.11 km of first order stream, 10.38 km of second order stream, and 9.58 kilometers of third order stream have been identified to be fish bearing. Another 8.48 kilometers of first order stream, 8.96 kilometers of second order stream and 2.02 kilometers of third order stream may potentially be fish bearing. The total kilometers of confirmed or suspected fish bearing reaches accounts for 32.8 kilometers of the streams in the study area. Fish are confirmed or suspected to be absent from 63.33 kilometers of first order stream. In fact, a significant proportion of the stream reaches, particularly first order stream reaches, that have been conservatively identified to have some fish bearing potential are expected to be predominantly identified as non-fish bearing when field assessments are conducted.

% Gradient Range	1 <sup>st</sup> order reaches (km)									
	Fish Confirmed Present	Fish Suspected Present	Fish Absent/ Suspected Absent	Totals						
0-2	0.11	0.22	1.08	1.41 (2.0%)						
2-10	0.00	7.74	50.59	58.33 (81.1%)						
10-20	0.00	0.52	7.66	8.18 (11.4%)						
>20	0.00	0.00	3.99	3.99 (5.5%)						
totals	0.11 (0.2%)	8.48 (11.8%)	63.33 (88.0%)	71.91						

# Table 7. Fish presence/absence in first order reaches in Sub-Basins II and VII.

 Table 8.
 Fish presence/absence in second order reaches in Sub-Basins II and VII.

% Gradient Range	2 <sup>nd</sup> order reaches (km)										
	Fish Confirmed Present	Fish Suspected Present	Fish Absent/ Suspected Absent	Totals							
0-2	1.02	0.00	1.57	2.58 (9.2%)							
2-10	9.37	7.30	7.27	23.94 (84.9%)							
10-20	0.00	1.67	0.00	1.67 (5.9%)							
>20	0.00	0.00	0.00	0.00 (0%)							
totals	10.38 (36.8%)	8.96 (31.8%)	8.84 (31.4%)	28.19							

Table 9. Fish presence/absence in third order reaches in Sub-Basins II and V
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0/ Candiant	3 <sup>rd</sup> order reaches (km)										
% Gradient Range	Fish Confirmed Present	Fish Suspected Present	Fish Absent/ Suspected Absent	Totals							
0-2	1.82	0.00	0.00	1.82 (8.9%)							
2-10	7.76	2.02	8.75	18.53 (91.1%)							
10-20	0.00	0.00	0.00	0.00							
>20	0.00	0.00	0.00	0.00							
totals	9.58 (47.1%)	2.02 (9.9%)	8.75 (43%)	20.35							

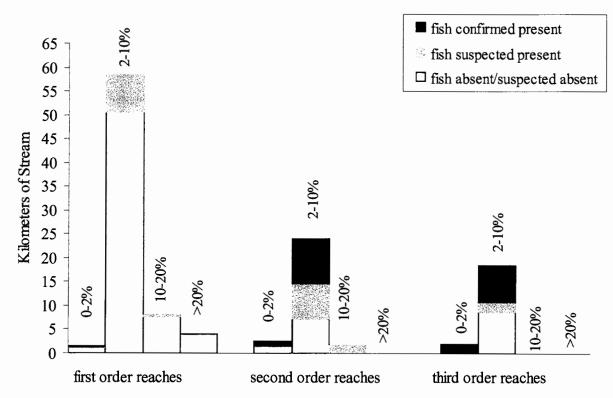


Figure 2. Distribution of fish presence in different order and gradient classes of stream reaches within Sub-basins II and VII. Data labels represent the gradient classes (%) within each stream order.

# 4.4 FISH AGE, SIZE AND LIFE HISTORY

Species captured in Sub-basins II and VII within the Fulton and Babine Lake watersheds include coho, cutthroat trout, rainbow trout, Dolly Varden and prickly sculpin. All of these species were captured in the Babine Lake inlet streams within sub-basin VII, but only cutthroat trout were captured in the third order inlet stream to the north shore of Fulton Lake sampled (sub-basin II). Of the species captured, coho was the most numerous, followed by cutthroat trout, Dolly Varden, prickly sculpin and rainbow trout. The following sub-sections summarize the acquired fish data and provide interpretations and discussions of fish size and age distributions, and species life histories.

# 4.4.1 Coho

Coho was the most common species captured during the reconnaissance inventory of Babine Lake inlet streams (sub-basin VII), but the species was not captured in the unnamed inlet stream to Fulton Lake, upstream of the 18 m falls at the outlet of Fulton Lake. While coho accounted for 63 of the 101 fish captured, coho were only captured in three of the 15 reaches sampled for fish. The vast majority of the coho captured (43 coho, 68.3% of coho captured) were captured at site 23 (ILP 40356 reach 1) in sub-basin VII. Coho was the most common species captured in the inlet streams to Babine Lake sampled in July and August 2001.

Eighteen scale samples (28.6%) were collected from the 63 coho captured. Of the 18 age sample collected, six could not be aged, but an age was determined for the remaining 13 samples. All

#### Results and Discussion

of the coho aged from scale samples were determined to be age 1+. Length frequency histograms for coho captured in inlet streams to the west shore of Babine Lake between the Fulton River and Newman Island are illustrated in Figure 3. Size ranges of the different age classes present in the sample of coho captured in the inlet streams sampled, as determined from un-aged coho trout and length frequency distribution are also shown in Figure 3. Based on length frequency analysis, and scale aging information, two age groups are speculated to be present in the sample obtained from inlet steams to Babine Lake, representing age 0+ and 1+ coho. Age 1+ coho represent a proportion of coho that delay smoltification for one or more additional winters in freshwater, when compared to most coho, which have been documented to smolt after one winter in freshwater.

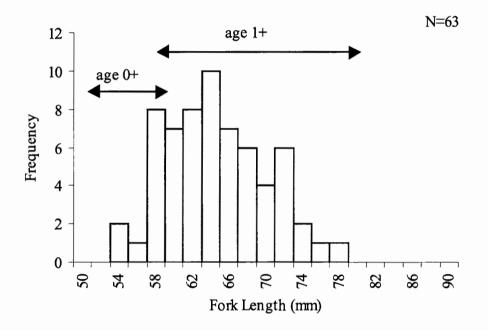


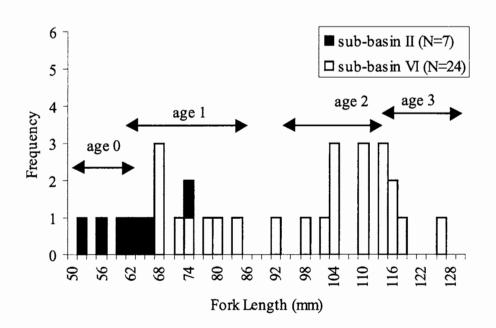
Figure 3. Length frequency histogram of coho captured in inlet streams to the west shore of Babine Lake between Fulton River and Newman Island.

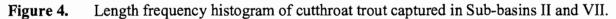
#### 4.4.2 Cutthroat trout

Cutthroat trout was the second most numerous and the most wide spread salmonid species captured within reaches sampled in Sub-basin II and VII in July and August 2001. This species was also found to be the most widespread species in other sub-basins within the Fulton River sampled during previous inventory projects (SKR 2000, 2001c). Of the 15 reaches sampled for fish in July and August 2001, cutthroat trout were captured in six reaches, including one reach in sub-basin II, where cutthroat trout was the only species captured. The vast majority of the cutthroat trout captured (24 of 31 cutthroat trout captured) were found in sub-basin VII. Cutthroat trout appears to be the most widespread and abundant species in the reaches sampled in the Fulton River watershed sampled in 1999 (SKR 2000), 2000 (SKR 2001c), and 2001, as well as in inlet streams to the west shore of Babine Lake between the Fulton River and Newman Island.

Twenty scale samples were collected from the 31 cutthroat trout captured (64.5%). Of the 20 age samples collected, five could not be aged, but an age was determined for the remaining 15 samples. Length at age data for the 15 cutthroat trout aged by scale sample analysis are summarized in Table 10. Length frequency histograms for cutthroat trout captured in the two sub-basins sampled are illustrated in Figure 4. Size ranges of the different age classes present in the sample of cutthroat trout captured in the three sub-basins, as determined from aged cutthroat trout and length frequency distribution are also shown in Figure 4. Cutthroat trout captured in the two sub-basins in the Fulton Landscape Unit represented four distinct age classes, ranging from young of the year (age 0) to one adult (age 4). Of the smaller cutthroat trout captured, a disproportionate number were captured in sub-basin II, at site 29, while few small bodied cutthroat trout were captured in the inlet streams to Babine Lake located between the Fulton River and Newman Island. This is speculated to be a result of different life history strategies or ecological factors (e.g. competition, food abundance, spawning locations), or the timing of sampling which may have been prior to emergence at some sites. Cutthroat trout in both, the inlet streams to Babine Lake (sub-basin VII), and the third order inlet stream to Fulton Lake (sub-basin II) are speculated to have a lacustrine - adfluvial life history reflected in the proximity of capture locations to Babine Lake, and the small lake found in sub-basin II, although stream resident forms may also be present.

		Fork Length (mm)								
Age	Ν	min.	max.	mean	SE					
1	6	60	72	64.8	1.851					
2	9	97	118	109.8	2.338					





## 4.4.3 Rainbow Trout

100

189

1

18

1000

100

14

One rainbow trout was captured in sub-basin VII, and no rainbow trout were captured in subbasin II sampled in July and August 2001. While rainbow trout were captured at low densities in sub-basins IV and VI in 2000 (SKR 2001c), no rainbow trout were captured in sub-basin I, subbasin III or sub-basin V in the previous two years of the study (SKR 2000, 2001c). This indicates that rainbow trout are generally much less common than cutthroat trout in the Fulton River watershed (sub-basins I to VI), and in the inlet streams to Babine Lake between the Fulton River and Newman Island. The one rainbow trout captured during this study was captured at site 1 in a second order inlet stream (ILP 40208, reach 1) to the west shore of Babine Lake, along with two cutthroat trout and four Dolly Varden. In addition to being the only site where rainbow trout were captured during the study, this site was also the only site where Dolly Varden were captured during the study. The rainbow trout captured in the system measured 128 mm, and was an immature three year old (determined from scales). The proximity of the capture location to Babine Lake (500 m upstream of Babine Lake) suggests a lacustrine-adfluvial life history, or a potential anadromous life history (i.e. steelhead).

## 4.4.4 Dolly Varden

Four Dolly Varden were captured in sub-basins VII, but no Dolly Varden were captured in subbasin II. Three Dolly Varden were captured in sub-basin I (Fulton Lake face unit) during an inventory conducted in 1999 (SKR 2000), but the species was not captured during sampling in sub-basins III to VI (SKR 2000, 2001c). The Dolly Varden captured in inlet streams to Babine Lake were all captured at site 1, located in reach 1 of ILP 40208, a moderate gradient second order inlet stream to the west shore of Babine Lake. Dolly Varden ranged in size from 68 mm to 111 mm. Scale samples were collected for three of the four Dolly Varden captured, and size at age data for Dolly Varden captured is summarized in Table 11. Length frequency analysis was not conducted due to the small sample size. Based on age data, two age classes of Dolly Varden are present, ranging in age from 1+ to 2+.

Table 11.	Length at age for four Dolly Varden captured in sub-basin VII (Babine Lake
	face units).

			Fork Length (mm)						
Age	Ν	min.	max.	mean	SE				
1+	1	68	68	68.0					
2+	3	108	111	109.3	0.882				

# 4.4.4 Other Species

Prickly sculpin was captured in addition to coho, cutthroat trout, rainbow trout and Dolly Varden. Both of the prickly sculpin were captured in sub-basin VII, and none were present in sub-basin II. Prickly sculpin were found at site 23, in a second order inlet stream to Babine Lake (ILP 40356, reach 1). The prickly sculpin captured ranged in length between 70 mm and 72 mm. Prickly sculpin generally prefer quiet waters and avoid strong currents (McPhail and Lindsey 1970, Scott and Crossman 1973). This species may be found along lake shores or in streams (McPhail and Lindsey 1970, Scott and Crossman 1973), which is consistent with the location of site 23, about 180 m upstream of Babine Lake.

# 4.5 SIGNIFICANT FEATURES AND FISHERIES OBSERVATIONS

Of the sub-basins sampled in 1999 (SKR 2000), in 2000 (SKR 2001c), and in 2001, Tanglechain Creek (sub-basin VI) and the Babine Lake Face Units (sub-basin VII) offer the most valuable and apparently most productive fish habitat in the system. The remaining five sub-basins sampled over the three years of the study within the Fulton River watershed do not appear to be notably productive for fish. The following sections describe interesting features related to fish, fish habitat, and habitat protection concerns in the study area within the Fulton watershed based on historical information and the findings from this study.

# 4.5.1 Fish and Fish Habitat

Species diversity and density appeared to be highest in reaches sampled near Babine Lake, Fulton Lake or smaller lakes within sub-basins III, IV, VI and VII. This is partly attributable to the number of species, which frequently exhibit a lacustrine-adfluvial life history that are found in the Fulton River watershed and Babine Lake inlet streams. Anadromous species, such as coho and sockeye can access the inlet streams to Babine Lake, and the lower two reaches of the Fulton River, but are prevented from accessing the majority of the Fulton watershed due to the 18 m falls located at the outlet of Fulton Lake. Of the systems sampled in the three years of the study, ILP 40128 (sub-basin I) is probably the most unique and sensitive drainage in the study area (SKR 2000). A population of resident cutthroat trout were identified in reach four above two cascade barriers (SKR 2000). This genetically isolated population appears to have a lacustrine life history utilizing Saturday Lake. Another noteworthy feature of this system is the wetland in reach two that appears prone to drastic temperature fluctuation making the lower two reaches of ILP 40128 a temperature sensitive zone (SKR 2000). The only notable finding in sub-basins II and VII sampled in 2001 was the capture of Dolly Varden, and the relatively wide distribution of cutthroat trout, both of which are blue listed species.

# 4.5.2 Habitat Protection Concerns

# 4.5.2.1 Fisheries Sensitive Zones

No fisheries sensitive zones were identified in the reaches sampled in sub-basins II and VII in July and August 2001. A fisheries sensitive zone was identified in Sub-basin I in the lower 80 meters of ILP 40316, downstream of a series of barriers (SKR 2000). This section of stream offers good potential rearing, spawning, and overwintering habitat for fish in the lower Fulton River and may act as a refuge during high flows.

# 4.5.2.2 Fish above 20% gradient

Gradient barriers or falls were uncommon within sub-basins II and VII. No fish were captured in reaches with gradients greater than 20%, or reaches upstream of known gradient barriers. However, one adult and several juvenile cutthroat were captured upstream of a 30 meter long, 19.5 % gradient section of stream near the upper end of the first reach of ILP 40240 in sub-basin I during a previous fish inventory study (SKR 2000). As previously mentioned, a resident population of cutthroat trout was also identified in ILP 40128 near Saturday Lake upstream of a cascade barrier (SKR 2000).

## 4.5.2.3 Rare and Endangered Species

Dolly Varden was captured in sub-basin VII (Babine face units) in this study, and the species was previously captured in sub-basin I (Fulton Face Units) during a previous inventory (SKR 2000). Although not documented, bull trout may be present in the lower Fulton watershed (Atagi, pers. comm.), and the Babine drainage is an area where the two species may hybridize. In addition, cutthroat trout were captured in reaches throughout the Fulton watershed, and in Babine Lake inlet streams between the Fulton River and Newman Island in this and previous studies (SKR 2000, 2001c). Cutthroat trout is a blue listed species by the Conservation Data Center (2001).

# 4.5.2.4 High Value Sport Fishing

Several species attractive for sport fishing have been documented in the Fulton River watershed and in inlet stream to Babine Lake, including rainbow trout, coho, sockeye, cutthroat trout, Dolly Varden and bull trout. Sport fishing opportunities exist in Babine Lake, Fulton River and Fulton Lake, as well as several of the smaller lakes and streams in the system. The section of the Fulton River downstream of Fulton Lake is renowned for its sport fishing opportunities. No additional high value sport fishing opportunities were identified during the reconnaissance fish and fish habitat inventory project conducted in July and August 2001.

# 4.5.2.5 Restoration and Rehabilitation Opportunities

Restoration and rehabilitation opportunities identified in sub-basins II and VII concentrated along the Granisle Highway, since road crossing on this section of the road commonly consisted of perched culverts which were found to restrict or prevent fish access. A 1.5 m perched culvert in reach 1 of ILP 40353 (site 16), and a 0.8 m perched culvert in reach 1 of ILP 40363 (site 24) were noted as barriers to fish passage. A 0.7 m perched culvert in reach 1 of ILP 40347 (site 14) is an obstruction of fish passage, but this culvert may be passable at some flows. Fish were captured downstream of these structures, but no fish were captured upstream.

# 4.6 FISH BEARING STATUS

Fish distribution in the three sub-basins studied in the Fulton watershed is limited by sections of underground flow and/or no visible channel in several smaller streams (typically first order). Waterfalls, cascades, or anthropogenic features also limit fish distribution in the study area (Table 6). The sampling that was conducted in 2001 gives some evidence as to the fish bearing status of a significant proportion of the sub-basins studied. Fish bearing reaches are summarized in Table 12, while proposed non-fish bearing reaches are summarized in Table 13. Given that stream resident populations are present in all seasons, reaches upstream of barriers to fish resident populations, which should be present through all seasons, is the primary concern in such reaches. Some areas sampled require further sampling to conclusively establish fish presence/absence (Table 14). Confirmed and/or suspected fish distribution for all reaches in the study area are summarized on the Fisheries Project/Interpretive Maps (Appendix 5).

# 4.6.1 Fish Bearing Reaches

Fish bearing status was assigned to all reaches in which species listed in the Forest Practices Code Fish Stream Identification guidebook were captured (FPC 1998). In addition, reaches in which no fish were captured, but where fish presence has been documented upstream, and where no barriers to fish migration have been identified were defaulted as fish bearing. Table 12 summarizes reaches that were documented to be fish bearing during fish and fish habitat sampling during this study. Overall, fish were relatively widespread in the two sub-basins sampled, with fish distribution extending into mid and upper reaches of the mainstems and some of the larger tributaries. Other potential fish bearing reaches are indicated on the Fisheries Project/Interpretive Maps (Appendix 5).

# 4.6.1 Non - Fish Bearing Reaches

Non-fish bearing status was assigned to reaches sampled upstream of barriers to fish migration in which no fish were captured in one season of sampling or did not offer perennial fish habitat (Table 13). This indicates a lack of resident fish upstream of these barriers.

# 4.6.2 Follow – Up Sampling Required

Fish presence/absence was not conclusively determined for ten reaches sampled in the study area during the reconnaissance fish and fish habitat inventory project conducted in 2000 (Table 14). These reaches require re-sampling to indicate if seasonal fish use is present and to confirm fish absence as determined under Forest Practices Code standards (FPC 1998).

[								
				na an an Anna an Anna an Anna an Anna Anna an Anna an Anna an Anna	Cha	annel		
Sample Site #	ILP Mariana Mariana Mariana	TRIM Map #	Reach	Species	Width (m)	Site gradient (%)	Proposed Riparian Class	Comments
1	40208	093L.099	1	CT, RB, DV	3.60	4.5	<b>S</b> 3	This reach provided excellent spawning and rearing habitat
4	40216	093L.099	1	CT	4.05	4	<b>S</b> 3	This reach provided excellent spawning and rearing habitat
14	40347	093L.089	1	CT, CO	1.58	2	<b>S</b> 3	A 0.7 m perched culvert in this reach may restrict fish access (Table 6)
16	40353	093L.089	1	CT, CO	2.25	3.5	<b>S</b> 3	A 1.5 m perched culvert in this reach is a barrier to fish passage in this reach; good rearing and spawning habitat were noted in the reach
21	40402	093L.089	1	СТ	1.15	4.5	S4	Good rearing and moderate spawning habitat were identified in this reach
23	40356	093L.090	1	CT, CO, CAS	1.57	5.75	<b>S</b> 3	Coho and cutthroat trout were captured at relatively high densities in a pool at the outfall of a culvert at the Granisle Highway crossing of the stream, but coho and cutthroat trout were also captured upstream of the culvert, although at apparently lower densities; excellent rearing and spawning habitat was identified in this reach
28	40314	93L.089	8	CT captured upstream	23.30	0	<b>W</b> 1	This reach consisted of a large beaver pond within a wetland; no fish sampling was conducted in the reach due to the capture of cutthroat trout upstream
29	40314	93L.089	9	СТ	1.58	2	<b>S</b> 3	Good rearing and spawning habitat along with moderate overwintering habitat were identified in this reach; the reach is in a harvested area, and while the riparian vegetation is re- establishing, fish habitat quality in this reach was noticeably poorer than in unharvested areas downstream

 Table 12.
 Summary of data from the eight fish bearing reaches (sorted by site number) sampled in Sub-basins II and Sub-basin VII within the Fulton River watershed that were surveyed during July and August 2001 (for details see Appendix 1).

#### Results and Discussion

					1							-		and August 2001 ( <i>for defails see</i> Appendix 1).
			an a				Electro	ofishir	ng Spe	cific	ation	S	and the	
Sample Site #	ILP	Reach	TRIM map	Gradient (%)	Channel Width (m)	Dist. (m)	Time (s)	Cond. (µS)	Temp. °C	Stage	Turbidity	Date (2001)	Proposed Riparian Class	Comments
3	40399	1	93L.099	5.5	0.62			120	7	L	С	08/23	S4/S6	A 22% gradient over the lower 40 m of the reach was identified as a barrier to fish passage (Table 6); no perennial fish habitat was found upstream due to the lack of overwintering habitat (no deep pools), no suitable spawning habitat (no gravels) and limited rearing habitat; the lower 10 m of the reach, downstream of the cascade, are accessible to fish, and should be managed as fish bearing unless reach 3 of the mainstem (ILP 40208) is found to be non-fish bearing during re-sampling (see site 2, Table 16)
5	40216	2	93L.099	1	2.47	100	1207	60	10	M	С	07/20	<b>S</b> 6	No fish were captured in this reach, which offered excellent rearing, spawning and overwintering habitat; the reach is located upstream of a 5 meter falls in reach 2 of ILP 40216; no fish were captured in one other site sampled (site 7, ILP 40219), and no perennial fish habitat was present in three other sites sampled upstream of the falls (sites 6, 8 and 9)
6	40216	4	93L.099	7.5	0.72			120	12	L	С	08/23	86	This reach is located upstream of a 5 meter falls in reach 2 of ILP 40216; no perennial fish habitat was present at this sample site, due to the lack of overwintering habitat (no deep pools) and the lack of spawning habitat (fines only in substrate); no perennial fish habitat was present at two other sites sampled upstream of the falls (sites 8 and 9), and no fish were captured at two sites sampled upstream of the falls (sites 5 and 7).
7	40219	1	93L.099	7.25	1.50	100	614	100	10	М	С	07/20	86	No fish were captured in this reach, which provided rearing and marginal overwintering habitat, but no spawning habitat (fines only in substrate); this reach is located upstream of a 5 meter falls in reach 2 of the mainstem (ILP 40216, Table 6); no fish were captured in one other site sampled upstream of the falls (site 5), and no perennial fish habitat was identified in three additional sites surveyed upstream of the falls (sites 6, 8 and 9)

Table 13.	Summary of data from the nine non-fish bearing reaches (sorted by site number) in Sub-basin II and Sub-basin VII within	ı
	the Fulton River and Babine Lake watershed that were surveyed in July and August 2001 (for details see Appendix 1).	

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Non-fish Bearing Reaches

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Table 13 (cont.)Summary of data from the nine non-fish bearing reaches (sorted by site number) in Sub-basin II and Sub-basin VII<br/>within the Fulton River and Babine Lake watershed that were surveyed in July and August 2001 (for details see<br/>Appendix 1).

		1	Appendix	<u>1).</u>										· · · · · · · · · · · · · · · · · · ·
							Electro	ofishir	ig Spe	cifica	ation	s		
Sample Site #	ILP	Reach	TRIM map	Gradient (%)	Channel Width (m)	Dist. (m)	Time (s)	Cond. (µS)	Temp. °C	Stage	Turbidity	Date (2001)	Proposed Riparian Class	Comments
8	40222	1	93L.099	18.5	0.93	·		100	7	L	С	08/22	<b>S</b> 6	No suitable fish habitat (steep gradient, lack of deep pools for overwintering, lack of suitable spawning substrate) was noted in this steep gradient reach, located upstream of a 5 meter falls in reach 2 of the mainstem (ILP 40216, Table 6); no perennial fish habitat was present at two other sites sampled upstream of the falls (sites 6 and 9), and no fish were captured at two sites sampled upstream of the falls (sites 5 and 7).
9	40223	1	93L.099	8.5								08/23	NCĐ	This reach consisted of some short sections of defined channel, separated by seepage sections (3-10 m long); the reach is located in a mature fir forest with little riparian vegetation; a 5 m falls in reach 2 of the mainstem (IP 40216, Table 6) blocks fish access to this reach; this reach does not provide perennial fish habitat due to the lack of a defined channel; no perennial fish habitat was present at two other sites sampled upstream of the falls (sites 6 and 9), and no fish were captured at two sites sampled upstream of the falls (sites 5 and 7).
11	40327	11	93L.089	2.75								07/19	NCD	This reach consisted of a riparian bank in a shallow gully, with no sign of alluvium, or fluvial deposits; the lower 600 m of the reach were surveyed, but no continuous channel was present
31	40309	1	93L.089	3								07/19	NCD	A riparian band was present for the initial 50 m of the reach, but no distinct riparian band was present upstream although the entire forested area surveyed has riparian undergrowth; no channel was found in the riparian band in the initial 50 m, which was 15-25 m wide, and consisted of mountain alder, willow, horsetail, sedges and grasses
32	40307	1	93L.089	1								07/19	NCD	This reach consists of a distinct riparian band within a gully, but no sign of alluvium or fluvial deposits were identified in a 300 m section surveyed; some muddy patches were commonly observed in the reach, but no scoured, continuous channel was present

#### **Results and Discussion**

Site #	ILP/Stream name	Reach	TRIM map	Channel Width (m)	Timing	Methods	Proposed Riparian Class	Comments
2	40208	3	093L.099	1.40	Spring	EF	<b>S4</b>	No fish captured in 521 seconds of electrofishing over 100 lineal meters; electrofishing efficiency was reduced by inaccessibility of some locations due to underground flow, root wads and LWD; a barrier may be present in reach 2 which is located in a deep rock canyon
10	40327	2	093L.099	1.10	Spring	EF	S4	No fish captured in 601 seconds of electrofishing over 100 lineal meters; electrofishing efficiency was reduced by dense overhanging vegetation but temperature and conductivity were conducive to sampling; two non-permanent barriers were noted downstream of the sampling location, both of which restricted fish passage at the time of sampling; sampling in the small lake in reach 3 may identify the presence of resident fish
12	40334	1	093L.089	1.62	Spring	EF	S3	No fish captured in 1192 seconds of electrofishing over 200 lineal meters; electrofishing efficiency was reduced by thick overhanging vegetation, but temperature and conductivity were conducive to sampling; a 2 meter high beaver dam located about 140 m upstream of the lake was noted as an obstruction to fish passage; re-sampling in the lake located upstream (reach 2) may identify the presence of resident fish
13	40334	3	093L.089	1.97	Spring	МТ	W?	No fish captured in 823 seconds of electrofishing over 100 lineal meters; electrofishing efficiency was poor due to large channel morphology and difficult access to the stream channel; a 2 meter high beaver dam in reach 1 was noted to restrict access at the time of sampling (see site 12); sampling in the lake in reach 2 is recommended
15	40351	1	093L.089	0.97	Spring high flows	EF	S4	This intermittent reach was primarily dry at the time of sampling, with few shallow pockets of standing water; no electrofishing was conducted due to the lack of sufficient water for sampling; overall habitat quality is poor, and fish use is unlikely even during peak discharge periods

# Table 14.Follow - up sampling requirements for classification of ten reaches (sorted by site number) sampled in Sub-basin II and<br/>Sub-basin VII within the Fulton River and Babine Lake watershed in July and August, 2001 (for details see Appendix 1).

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Reaches Requiring Resampling

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#### **Results and Discussion**

Table 14 cont.Follow - up sampling requirements for classification of ten reaches (sorted by site number) sampled in Sub-basin II<br/>and Sub-basin VII within the Fulton River and Babine Lake watersheds in July and August, 2001 (for details see<br/>Appendix 1).

Site #	ILP/Stream name	Reach	TRIM map	Channel Width (m)	Timing	Methods	Proposed Riparian Class	Comments
17	40353	3	093L.089	1.75	After culvert removal	EF	83	No fish were captured in this reach after 614 seconds of electrofishing over 100 lineal meters (18/07/01); a 1.5 m perched culvert in reach 1 of this stream is an anthropogenic barrier to fish passage (Table 6), and prevents fish access to marginal rearing habitat in this reach; this reach should be managed as fish bearing, and re-sampling is not recommended until fish access to the reach has been re- established
18	40353	5	093L.089	0.60	After culvert removal	EF	<b>S4</b>	No fish were captured in this reach after 399 seconds of electrofishing over 100 lineal meters (19/07/01); a 1.5 m perched culvert in reach 1 of this stream is an anthropogenic barrier to fish passage (Table 6), and prevents fish access to moderate rearing habitat in this reach; this reach should be managed as fish bearing, and re-sampling is not recommended until fish access to the reach has been re- established
19	40354	1	093L.089	0.80	After culvert removal	EF	<b>S4</b>	This reach was dry and no suitable fish habitat was present at the time of survey (18/07/01); a 1.5 m perched culvert in reach 1 of the mainstem (ILP 40353) is an anthropogenic barrier to fish passage (Table 6), and prevents fish access to very marginal and seasonal habitat in this reach; this reach should be managed as fish bearing, and re-sampling is not recommended until fish access to the reach has been re- established

Table 14 cont.Follow - up sampling requirements for classification of ten reaches (sorted by site number) sampled in Sub-basin II<br/>and Sub-basin VII within the Fulton River and Babine Lake watersheds in July and August, 2001 (for details see<br/>Appendix 1).

Site #	ILP/Stream name	Reach	TRIM map	Channel Width (m)	Timing	Methods	Proposed Riparian Class	Comments
20	40354	2	093L.089	1.48	After culvert removal	EF	S4	This steep gradient reach (12-14%) was primarily dry at the time of survey (18/07/01) and the ephemeral nature of the stream restricts the suitability of the marginal fish habitat in this reach; a 1.5 m perched culvert in reach 1 of the mainstem (ILP 40353) is an anthropogenic barrier to fish passage (Table 6), and prevents fish access to very marginal and seasonal habitat in this reach; this reach should be managed as fish bearing, and re-sampling is not recommended until fish access to the reach has been re-established
22	40359	1	093L.089	1.20	Spring	EF	S4	No fish captured in 419 seconds of electrofishing over 100 lineal meters despite good sampling conditions; fair rearing and some pockets of spawning habitat were noted in the reach, but no overwintering habitat was present due to a lack of deep pools; the reach is located in a 12-15 year old harvested area, and no leave strip was noted adjacent to the stream banks; the channel exhibited extensive riffles with few shallow pools; cover was poor due to the lack of mature riparian vegetation
24	40363	1	093L.090	0.90	Spring high flows below culvert	EF	S4	This intermittent reach was primarily dry with some small, isolated pockets of water at the time of sampling (18/07/01); no electrofishing was conducted due to the lack of sufficient water; a 0.8 meter hanging culvert upstream of the sample site was identified as a barrier to fish passage at the Granisle Highway crossing; the lower portion of the reach does not flow as indicated on the TRIM map; fish habitat in the lower 350 m of the reach (downstream of the perched culvert) was very poor

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Reaches Requiring Resampling



#### **Results and Discussion**

Table 14 cont.Follow - up sampling requirements for classification of ten reaches (sorted by site number) sampled in Sub-basin II<br/>and Sub-basin VII within the Fulton River and Babine Lake watersheds in July and August, 2001 (for details see<br/>Appendix 1).

		Appendiz		<u>C1</u> 1	<b>T</b> : ·	16 11	<b>D 1</b>	â
Site #	ILP/Stream	Reach	TRIM	Channel	Timing	Methods	Proposed	Comments
	name		map	Width (m)			Riparian	
							Class	
25	40363	2	093L.090	0.80	Spring	EF	S4	This intermittent reach was primarily dry at the time of
					In reach 1			sampling (18/07/01), although some stagnant pools were
								present; no spawning (no suitable substrate, lack of discharge),
								and no overwintering habitat (no deep pools) were noted in this
								reach, upstream of a 0.8 m perched culvert in reach 1 (Table 6);
								the culvert is an anthropogenic barrier to fish passage; this reach
								should be managed as fish bearing by default, and re-sampling
								is not recommended until fish access to the reach has been re-
								established; sampling in reach 1 may provide further indication
-	40214	1	0021 080	1.0	Queries a bist	EE	54	for the potential of fish presence if the culvert barrier is removed
26	40314	1	093L.089	1.0	Spring high	EF	<b>S4</b>	This reach was dry at the time of sampling (23/08/01); the location of the mainstem differs from that shown on the TRIM
					flows			
								map, and this reach does not carry the majority of the flow from ILP 40314 reach 3; a channel was present, but the channel was
								poorly defined, and no overwintering or spawning habitat were
								noted present (no deep pools, no gravels); some beaver activity
								was noted in this reach; re-sampling is recommended during
								spring high flows when sufficient water may be present for
								electrofishing
27	40314	3	093L.089	1.85	Spring high	EF	<b>S</b> 3	No fish were captured in 447 seconds of electrofishing over 100
	10011	-	0752.007	1.00	flows	21		lineal meters in the lower 200 m of this reach; the main flow of
								the upper portion of the reach diverts to the south, and does not
								drain east as indicated on the TRIM map, but increased flow
								during peak discharge may result in the diversion of some of the
								flow into this channel; fish habitat was noted to be poor, and no
								overwintering habitat or spawning habitat was present (no deep
								pools, no gravels)
30	40403	1	093L.089	1.27	Spring	EF/MT	S4	No fish were captured in 457 seconds of electrofishing over 100
								lineal meters; electrofishing efficiency was reduced by large
								channel morphology and difficult access to the stream channel;
								some rearing habitat but no overwintering habitat (too shallow)
								or spawning habitat (no gravels) were identified in the reach

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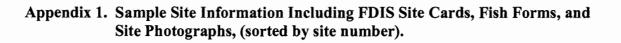
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### SITE CARD INDEX

Watershed Code/ILP	Reach #	Site #	TRIM Map #	Page #
40208	1.0	1	093L.099	S - 1
40208	3.0	2	093L.099	S - 2
40216	1.0	4	093L.099	S - 4
40216	3.0	5	093L.099	S - 5
40216	4.0	6	093L.099	S - 6
40219	1.0	7	093L.099	S - 7
40222	2.0	8	093L.099	S - 8
40223	1.0	9	093L.099	S - 9
40307	1.0	32	093L.089	S - 32
40310	1.0	31	093L.089	S - 31
40314	1.0	26	093L.089	S - 26
40314	3.0	27	093L.089	<b>S - 27</b>
40314	8.0	28	093L.089	S - 28
40314	9.0	29	093L.089	S - 29
40327	2.0	10	093L.099	S - 10
40327	11.0	11	093L.089	<b>S</b> - 11
40334	1.0	12	093L.089	S - 12
40334	3.0	13	093L.089	S - 13
40347	1.0	14	093L.089	S - 14
40351	1.0	15	093L.089	S - 15
40353	1.0	16	093L.089	S - 16
40353	3.0	17	093L.089	S - 17
40353	5.0	18	093L.089	S - 18
40354	1.0	19	093L.089	S - 19
40354	2.0	20	093L.089	S - 20
40356	1.0	23	093L.090	S - 23
40359	1.0	22	093L.089	S - 22
40363	1.0	24	093L.090	S - 24
40363	2.0	25	093L.090	S - 25
40399	1.0	3	093L.099	S - 3
40402	1.0	21	093L.089	S - 21
40403	1.0	30	093L.089	S - 30

Note: Digital versions of all forms are available on the Field Data Information System (FDIS) databases delivered to B.C. Environment, Skeena Region and Houston Forest Products, Houston, B.C..

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		Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-000000-00000-00	000-000-000-000-000-000-000-000	1.0	093L.099	40208	1
	PROJECT				
Project Name: Babine Lake	and Eulton Lake Tributaries				
Stream Name (gaz.): BABINE RIV		Pro	ject Code:	1282	
	00000-0000-0000-0000-00-000-00-000-000-000-000-000-000-000-000-000-000-000-00-000-000-00-000-000-000-00-00-000-000-000-000-000-000-000-000-000-0		-		
				ter and the second s	an a
Constant Names	WATERSHE		Unnormal Creak		
Gazetted Name: Watershed Code: 000-000000-00000-00	000-0000-0000-000-000-000-000-000	Local Name:	Unnamed Creek		
ILP Map#: 093L.099	LP #: 40208 NID Map #: 093L.099	NID #: 46109	Reach #:	1.0 Si	te #: 1
Field UTM (Z.E.N):	Method:	Site Lg: 100	Method: HC	Access	:: V2
GIS UTM (Z.E.N): 9.673689.6091615		Ref. Name:			
Date: 2001/07/18	Time: 18:00 Agency: C141	Crew: ML /NF	Fish Crd?	: 🗹 Inc	omplete: 🗌
	CHANNEI	•			
Mtd width width			Avg	Gadient %	Mtd Avg
Channel Width (m):         MS         3.50         3.60           Wetted Width (m):         MS         1.70         3.30	3.30         4.10         3.60         3.50           1.50         2.20         3.00         1.90		3.60 Method I: 2.27 Method II:	5.0 4.0	AL 4.50
Pool Depth (m): MS 0.30 0.20	0.25 0.40 0.20 0.25		0.27		
Wb Depth: .6 .7 .6			No Vis.Ch		ent:
	Avg: 0.63 Method: MS	Stage: L 🗌 M 🥃		<b>v</b> III	US
			SURE		
Type: SWD LWD Amount: T S			40%		
			EG: N 🖌 A 📋	MUVU	
LWD: F	DIST: E				
LB SHP: S		RB SHP: S	3		
Texture: F 🖌 G 🖌 C		Texture:	F 🗹 G 🗹 C 🗌	BCR	A 🗌
RIP: M		RIP: I			
STG: MF		STG: I	٨F		
	WATER				
EMS:		Req #:			
Temp: 9 pH: 8.0	Method: T3 Method: FD	Cond.: 140			od: S4
Flood Signs: none	Method: GE	Turb.: T	мпгпс	Metho	od: GE
	MORPHOLO	GY			
Bed Material: Dominant: G	Subdom: C		32 B3 D1 D	D2 D3	
D95: 22.0 D (cm): 17.00					
Pattem: SI	INDICATO		C3 C4 C5 S	S1 S2 S3	S4 S5
Islands: N					
Coupling: DC Confinement: OC					
FSZ:	Bars				
	HABITAT QUA	IITY			
Name	100011011807	Comments			
	undant suitable substrate.				
	ny deep scour poois.				
OverWinter Habitat Good - severa	al pools likely suitable. PHOTOS				
Photo Foc Lg	Dir	<u>.</u>	omments		
R:         TC1         F:         21         STD	U 520 metres upstream o				
R: TC1 F: 22 STD	D 520 metres upstream o				
	COMMENT	3			

#### 1:20K Reconnaissance Stream Inventory 2001

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Site

1

Reach # ILP Map # ILP #

1.0	093L.099	40208

Section	Comments
SITE LOCATION	500 m upstream of Babine Lake.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed 300 m starting 400 m upstream of Babine Lake.
	COMMENTS
Section	Comments
FISH PRESENCE	Fish also confirmed above 0.7 m hanging culvert at Granisle Highway.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	5-10 m band on both banks consisting of twinberry, alder, devil's club, cottonwood and spruce.

															Reach		I D Mon #	ILP #
w	atershe	d Coo	ie:	(	000-00000	0-000	00-0000	0-0000	-0000	0-000-0	00-000-0	000-000	-000	1	1.0		ILP Map # 093L.099	40208
							ALC: NO.		N A '	TER	BOD	Y						
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				00000-00	0000-0000	0-0000	-0000-0	00-000	-000	-000-00	00-	2008	ai. 017	aneu	OIGOR			
	•				0000-0000													
W	/aterbo	dy ID:						1	ILP N	lap #: (	093L.09	9		ILP	#: 40	208	Reach #:	1 -
	Proje	ct ID:	1282									Lake/Str	eam:	S		Lake Fr	rom Date:	
F	ish Per	mit #:	14	5013K	Dat	te: 20	01/07/18	в	To	2001	/07/18	Age	ancy: C	141	Cre	w: ML/	NF Res	sample:
2. X X X						101		S1	ΤE	/ M	ETHO	) D						
Site#		Мар	NID	# L	JTM:Zone/	East/N	orth/Mth	1.20.000	MTD	A STORY	Temp	Cond	Turbio	<u>i T</u>		22222222 C	Comment	
1	093L		461			T			MT	1	9	140	C	-				
1	093L	_	461	09					EF	1	9	140	С					
1	093L		461						MT	2	9	140	С					
1	093L		461			+			MT	3	9	140	C C	-				
1	093L		461 461			+			MT MT	4	9	140	C C					
	Lage	.033	401		I				_		ETTI	1.1.2	-	N.S.M.				
Site#	Тмтр		H/P	Date	n I Tim	e In	Date (		Time	MONADE				1999	Comr	nent		
1	EF	1	1	2001/07		:55	2001/0		18:									
1	MT	1	1	2001/07	_	:40	2001/0		17:	· · · · · · · · · · · · · · · · · · ·								
1	MT	2	1	2001/07	/17 18	:41	2001/0		17:	46								
1	MT	3	1	2001/07		:44	2001/0		17:									
1	MT	4	1	2001/07		:40	2001/0	_	17:4									
1 	MT	5		2001/07	/1/ 18	:42	2001/0		17:		ECIF	ICA		Ċ				
	<u> </u>				real de la companya d T				11-11-11	993832A		9722 - 1493 1		28.434			0	U. Labita
Site #	*	N	м IT	TD/NO.	1	-	1/P 1		et Typ	be	Leng		Dept	_	Me	sn	Set BT	Habita L
1			 IT		2		1	+				-+	0.3				BT	L
1		N	IT		3		1						0.3	3			BT	L
1		Ν	IT		4		1						0.3				BT	L
1	10.000	N	IT	1210-01-02-02-02	5		1						0.4				BT	L
			94 S 🖓		्र	. EL	ECT	ROF	.18	HER	SPE	1	1.11	ION	5			
Site#	+	ITD/N	-	H/P	Encl		Sec	+	ength	_	Width	_	<u> </u>	Frequ	<u> </u>	Pulse	Make	Mod
1 1	EF		1	1 ********	0	294-658	399		00.0		1.5 MMA		00	6	<u> </u>	6	SR	150
0.1.1	<u> </u>				<u>.</u>				4 () - 4 - 5 - 5			11.4034-0.		Tab A at			Commont	
Site#	EF		10	H/P 1	Species DV		age	Age	-	Total #		h (Min/M 88	ax)      11	FishAct R			Comment	
1	EF	-	1	1	RB	A			+	1			128	R				
1	EF		1	1	СТ	A				2			13	R				
1	MT		1	1	NFC					0								
1	MT		2	1	NFC					0			_					
1			3		NFC				+	0		_						
	MT	+	4 5	1	NFC	-			-+-	0	-				-			
1	100040-0							DIV	DU	-	FISH	DA	TA					
1 1	1.	NO	H/P	Species	Length	Weigh		Mat		Ag		Vch#			Roll #	Frame#	Co	mment
	MTD/										i#/Age		Str/S					
1	MTD/				128		U	U	SC	1	3	1						
1 Site#	MTD/	1	1	RB	120		U	U	SC	: 14	4 2							
1 Site# 1 1	EF EF	1	1	СТ	113			+	_	_							1	
1 Site# 1 1 1	EF EF EF	1	1 1	CT CT	113 109		U	U	SC		_	4					121 110	
1 Site# 1 1 1 1	EF EF EF EF	1 1 1	1 1 1	CT CT DV	113 109 111		U U	U	SC	1	2+	4					12I 11R 11L 12R	
1 Site# 1 1 1 1 1	EF EF EF	1	1 1	CT CT	113 109		U		<u> </u>	1	2+ 2+	<u> </u>					12I 11R 11L 12R 11L 12R	

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Section

Comments

### **FDIS** Fish Card

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Watershed Code:	000-00000-0000-0000-0000-0000-000-000-000-000-000-000-000	Reach # 1.0	ILP Map # 093L.099	1LP # 40208
Section	COMMENTS Comments			
SITE LOCATION	3 minnow traps set upstream of North Road crossing and 2 downstream.			
SITE DESCRIPTION	Electrofishing over best habitat above and below culvert (1 DV was capture in the same pool that one of the unsuccessful minnow traps was set in.	ired above the culv	vert), 1 DV was cap	tured shocking

Site # ILP #	1 40208	ILP Map # 093L.099
Reach #	1.0	
Waters	shed Code:	000-00000-0000-0000-0000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-00-000-000-000-000-000-000-000-000-000-000-0



Direction of Photo:UCD #:1Image #:46Roll #:TC1Frame #:21Comment:520 metres upstream of Babine Lake.



Direction of Photo: D CD #: 1 Image #: 47 Comment: 520 metres upstream of Babine Lake. Roll #: TC1 Frame #: 22

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								F	Reach #	ILP N	lap #	ILP #	Site
Watershed Code: 000-000	0000-0000-0	0000-0000	-0000-0	00-000-0	000-000	-000-000	)	3.	0	0	93L.099	40208	2
	Sec.				PR	O J E (	DT				1.1		
1 .			on Lake	Tributari	ies								
									Pr	roject Coo	de:	120	82
Project Watershed Code	: 480-00000	0-00000-00	000-000	00-000-	000-000	0-000-00	0-000-0	00					
				1.45-2	WAT	ERS	HED	den filmer Staffer		(Carl) Card (Carl) Strategy (Carl)	a an tha a log after An that a start a start a		
Gazetted Name:								Loo	al Name	: Unnam	ed Creek		
Watershed Code: 000-000	0000-0000-0	0000-0000	-0000-0	00-000-0	000-000	-000-000	D						
ILP Map#: 093L.09	99	ILP #: 40	208	NID Ma	ap #: 093	3L.099	N	D #: 46	5110	Reach	n#: 3	9.0	Site #: 2
Field UTM (Z.E.N):		N	ethod:					-			Method: HC	Ac	ccess: H
GIS UTM (Z.E.N): 9.67075	59.6093015						Re	f. Name	):				
Date: 2001	/08/23	Time: 11:	15	ļ	Agency:	C141	С	rew: I	RS NF		Fish Crd?		Incomplete:
		પ્રદેશો છે. આ ગામ છે.			СH	ANN	EL						
Mtd	width wid	th width	width	width	width	width	width	width	width	Avg		Gadient 9	
Channel Width (m): MS		_	1.50	1.30	1.30	ļ				1.40	Method I:	2.0 3.0	0 AL 2.50
······		_									Method II:		
Toor Bepar (m). Mo	0.20 0.1	0 0.20	0.10	0.20	0.20					0.17	No Vis.Ch	.: 🔲 Inte	
Wb Depth: .2	.2 .2	Avg	: 0.20	N	lethod:	MS	St	age: L	_ м	🖌 Н 🗌	] Dv	<i>r</i> :	Tribs.:
COVER	٦	otal: M											
Type: SWD	LWD	В	U	DP		ÖV	١V	CRO					
Amount: S	S	T	S	N	_	D	N	1					_
								INS	TREAM	VEG: N		M 🖌 V [	
LWD: F		DIST: E											
LB SHP: U								I	RB SHP:	s			
Texture: F 🖌	GCC	_ B	R 🗌 A						Texture:	F 🗹	G 🗌 C 🗌	B 🗌 R	A 🗌
RIP: C									RIP:	С			
STG: MF									STG:	MF			
	20 Code: 000-00000-0000-0000-0000-0000-0000-00												
EMS:								R	eq #:				
Temp: 8				Metho	od: T3			C	ond.: 120	)		N	Method: S4
								т	urb.: T	M		<b>V</b> N	Method: GE
Flood Signs:							1		1				
	11.112 A. D.C.			Ņ	IORF	HOL	OGY						
Bed Material: D								01	B1	B2 B			
D95: 4.00	D (cm): 3.	00	Morph	I: RP									
Pattern: Si						INDICA	TORS		C2	C3 C	4 C5 S	1 S2	S3 S4 S5
Confinement: FC													
						В	ars:	N	SIDE			MD S	
			Alexandre de la companya de la comp Alexandre de la companya		DITA	7 01	LACT	· V			0100088039	ann an th	
Alaana	T.			n A.			X 27 8 8 1 1	NAME -					
Name Rearing Habitat	Some good				C	ommen	15						
OverWinter Habitat													
Spawning Habitat	Limited.												
					PH	10 T O	S						
		D											
R: TC4 F: 13 S			J	INDD				vistreal		ivery (ILP	-0339).		
		64.1				的時代的				Sar Stra			

### 1:20K Reconnaissance Stream Inventory 2001

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Site

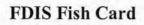
2

Watershed Code: 000-000000-00000-

ILP # Reach # ILP Map # 093L.099 40208

-00000-0000-000-000-000-000-000-000	3.0	0

Section	Comments
SITE LOCATION	Approximately 50 m downstream of tributary ILP40399.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed entire reach in helicopter in search of barriers but no definite barriers were observed in reaches 1-3 via helicopter.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Channel appeared to have better qualities in reach 2.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	3-5 m band on both sides consisting of alder ,willow, horsetail, and ferns.
	COMMENTS
Section	Comments
FISH PRESENCE	No fish captured but resampling and a ground search to identify a likely barrier in a deep rock canyon in reach 2 is required.



1:20K Reconnaissance Stream Inventory 2001

Watershed Code:

 Reach #
 ILP Map #
 ILP #

 8.0
 093L.099
 40208

<									WA	TER	BOD	Y						
		Code:	480-0				0000-0000					Loca	al: U	nnamed Cre	ek			
Waterbody ID: Project ID: 1282							ILP Map #: 093L.099 ILP #: 40208 Reach #: 3 - Lake/Stream: S Lake From Date:											
Fi	ish Per	mit #:	145	5013K		Date:	2001/08/	23	То	: 200	1/08/23	Age	ency:	C141	Crew: NF/RS	Resa	mple:	
E. C.	-							S	ITE	/ N	ETH	OD						
Site#	NID	Map	NID # UTM:Zone/East/North/Mth				thd	MTD	D/NO	Temp Cond T			bid	Comment				
2	093L	099	461	10					EF	1	8	120	C					
								Α.	GEA	ARS	SETT	INGS						
Site#	MTD	NO/NO	H/P	Da	ate In	Time I	n Date	Out	Time Out Comment									
2	EF	1	1	2001	1/08/23				10:	10 million (1990)								
						С.	ELEC	<b>r</b> RO	FIS	HEF	SP	ECIFI	CA	TIONS				
Site#	N	ATD/N	0	н	/P	Encl	Sec	L	ength		Width	Vol	lage	Frequenc	y Pulse	Make	Model	
2	EF	1	1		1	0	521	_	100.0	_	0.3		00	60	6	SR	12B	
				1.77				F	ISH	SU	MMA	RY						
Site#	N	/TD/N	0	H/F	S	pecies	Stage	Ag	е	Total	# Lg	th (Min/M	ax)	FishAct		Comment		
2	EF	1	1	1	1	NFC				0	_	- 12-						
									co	MM	ENT	S						
	Sec	tion						-				Comm	ents					
ERCEN	T HABI	TAT S	HOCK	ED S	Shocke	d 45% lan	ge woody	debris	pools,	20% g	lide tail	outs to th	ese p	ools and 359	6 riffle.			
SAMP	LING	FFIC	ENCY	6	Efficien	cy was m	oderate du	e to at	oundar	nt inac	cessible	locations	unde	araround flow	through root w	ads. large woo	dv debris e	

Site #	2	
ILP #	40208	ILP Map # 093L.099
Reach #	3.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 68 Roll #: TC4 Frame #: 12 Comment: Approximately 50 metres downstream of tributary (ILP 40399).



Direction of Photo: D CD #: 1 Image #: 69 Roll #: TC4 Frame #: 13 Comment: Approximately 50 metres downstream of tributary (ILP 40399).

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	Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	1.0	093L.099	40399	3
PROJECT				
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0		ct Code:	1282	
WATERSHED				
Gazetted Name:	Local Name: U	nnamed Creek		
Watershed Code:         000-00000-0000-0000-0000-0000-000-000-	#: 46111	Reach #:	1.0 Sit	e #: 3
· · ·	site Lg: 100	Method: H	IC Access	: H
	Name:		—	_
	w: RS NF	Fish Cr	rd?: 🗌 Inco	mplete:
CHANNEL				
Mtd         width         w	vidth width A	62 Method		Mtd Avg AL 5.50
Wetted Width (m): MS 0.10 0.20 0.30 0.10 0.20 0.20		18 Method		
Pool Depth (m): MS 0.10 0.10 0.10 0.10 0.10 0.10	0.	10 No Vis.	Ch.: Intermitte	ant:
Wb Depth: .1 .1 .2 Avg: 0.13 Method: MS Stage	e: L 🖌 M 🗌			s.:
COVER Total: T				
Type: SWD LWD B U DP OV IV	CROWN CLOSE			
	2 21-40			
	INSTREAM VE	G: N A	_ M <b>⊋</b> ∨ _	
LWD: F DIST: E				
	RB SHP: S			
				<b>~</b> []
RIP: C STG: MF	RIP: C STG: MF			
WATER		Marine Participation (1995)		
EMS:	Req #:			
Temp: 7 Method: T3	Cond.: 120		Metho	d: S4
pH: 7.8 Method: FD	Turb.: T	MULU	C 🔽 Metho	d: GE
Flood Signs: none observed Method: GE				
MORPHOLOGY				
Bed Material: Dominant: F Subdom; C	01 B1 B2	B3 D1	D2 D3	
D95: 7.00 D (cm): 5.00 Morph: CP DISTURBANCE				64 05
Pattem: SI INDICATORS		C4 C5	S1 S2 S3	\$4 \$5
Coupling: DC				
Confinement: OC Bars:	N SIDE			BR
FEATURES				
NID Map         NID         Type         Hgt         Method         Lg         Method         Photo           093L.099         46146         C         8.0         AL         40         HC         R:         F:         L:	AirPhoto		UTM (Z/E/N) 9.670674.6093027	Method
093L.099         46146         C         8.0         AL         40         HC         R:         F:         L:           Comments:         22% gradient cascade.         Example of the second		<i>t</i> :	3.010014.00930Z/	GIS
Common de gradion da cadado.				
HABITAT QUALITY				
HABITAT QUALITY Name Com	nments			
HABITAT QUALITY				

#### 1:20K Reconnaissance Stream Inventory 2001

ILP #

40399

Site 3

ILP Map #

093L.099

Reach #

1.0

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Watershed Code: 000-000000-00000-0000-0000-0000-000-00	

1	2007				PHOTOS				
	Photo		Foc Lg	Dir	Comments				
R: T(	C4 F:	10	STD	U	150 metres upstream of confluence of mainstem (ILP 40208).				
R: T(	C4 F:	11	STD	150 metres upstream of confluence of mainstem (ILP 40208).					
	1.1				COMMENTS				
	Se	ction	Comments						
SITE LOCATION 150 m upstream of confluence with mainstem (ILP40208).									
2.2	1.12	199			COMMENTS				
Section Comments									
SITE DESCRIPTION Site was representative of reach observed by helicopter.									
	1.00		C STA MARY		COMMENTS				
	Se	ction			Comments				
S	URVEY	LOCATION	Surveyed en	tire reach by helio	copter.				
	. 12.24			22.23	COMMENTS				
	Se	ction			Comments				
RIP	ARIAN	EGETATIO	ON 1-4 m band o	on both sides of a	f alder, horsetail, twisted stalk, and oak fern.				
					COMMENTS				
	Se	ction			Comments				
	FISH PF	ESENCE	No fish prese	ent upstream of 8	3C40 and 22% gradient section at confluence or in mainstem.				

100



Direction of Photo: U CD #: 1 Image #: 66 Roll #: TC4 Frame #: 10 Comment: 150 metres upstream of confluence of mainstem (ILP 40208).



Direction of Photo:DCD #:1Image #:67Roll #:TC4Frame #:11Comment:150 metres upstream of confluence of mainstem (ILP 40208).CD #:111

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				Reach #	ILP Map #	iLP #	Site
Watershed Code: 000-00	0000-00000-00000-0000	-000-000-000-000-000	0-000-000	1.0	093L.099	40216	4
		PR	OJECT				
Designed March	Debine Laboration				Carlos and C		
Stream Name (gaz.)	Babine Lake and Fulto     BABINE BIVER	on Lake Tributaries		Pr	oject Code:	1282	
	a: 480-000000-00000-00	000-0000-0000-000-00	00-000-000-000-000	FIC		1202	
		WAT	ERSHED				
Gazetted Name:				Local Name:	Unnamed Creek		
Watershed Code: 000-00				10110	Decel #		
ILP Map#: 093L.0				: 46112			te #: 4
Field UTM (Z.E.N): GIS UTM (Z.E.N): 9.6745		ethod:	Si Ref. N	te Lg: 100	Method: HC	Access	:: V2
GIS UTM (Z.E.N). 9.0740	17.0080376			idille.		_	_
Date: 200	1/07/18 Time: 18:	50 Agency	: C141 Crew	: ML/NF	Fish Crd?	: 🗹 ince	omplete:
		CH	ANNEL		MAR PERSON		
Mtd	width width width	width width width	width width wi		Avg		Mtd Avg
Channel Width (m): MS	3.90 4.10 4.30	3.60 4.00 4.40	<b>_</b>		4.05 Method I:		AL 4.00
Wetted Width (m): MS Pool Depth (m): MS	3.00         2.30         1.90           0.30         0.15         0.20	3.40         3.10         2.90           0.30         0.25         0.20			2.77 Method II: 0.23		
		0.20		ł.	No Vis.Ch		
Wb Depth: .7	6 .7 Avg	0.67 Method:	MS Stage	: L 🗌 M 🖌	рн 🗌 🗠	w: 🔄 🛛 Tril	os.:
COVER	Total: A						
Type: SWD		U DP	ov iv	CROWN CLO			
Amount: T Loc: P/S/O:	S S	T D	S N		40%		
Loc. F/3/0.				INSTREAM V	eg: N 🖌 A 🗌	MUVU	
LWD: F	DIST: E						
LB SHP: S				RB SHP: \$			
Texture: F 🔽	] G 🖌 C 🗌 B 🗌 F			Texture:	F 🔽 G 🔽 C 🗆	] B 🗌 R 🗌	A 🗌
RIP: D				RIP: [			
STG: MF				STG: N	MF		
		N	ATER				ellen er som
EMS:				Req #:			
Temp: 9		Method: T3		Cond.: 130		Metho	od: S4
pH: 7.9 Flood Signs: alluvium	50cm	Method: FD Method: NS	1	Turb.: T	□ M □ L □ C	Metho	d: GE
-		MOR	PHOLOGY	04 64			
		Subdom: G			32 B3 D1 C		
D95: 28.0	D (cm): 25.00	Morph: RP					
Pattern: Sl				C1 C2 (	C4 C5 S	S1 S2 S3	\$4 \$5
Islands: N Coupling: DC							
Confinement: OC							
FSZ:			Bars:			MID SPAN	BR BR
		HABITA	TQUALITY				
Name	1			an a			
Spawning Habitat	Excellent: abundant sui	table substrate	Com	ments			
Rearing Habitat	Excellent: many deep s						
OverWinter Habitat	Good: several suitable				and a second		
		Read and the second second	HOTOS	1.2.1.3.6			
	c Lg Di		upstroom of Pables		omments		
			upstream of Babine upstream of Babine				
			MENTS				
	The second s	The second s	STREET FARMER AND DECEMBER OF	STATISTICS AND	MPROV. MILLEY CONTRACTOR	化文字的 医外的变形的 化合物化合物	Charles and the second

#### 1:20K Reconnaissance Stream Inventory 2001

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 Reach #
 ILP Map #
 ILP #
 Site

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 093L.099
 40216
 4

Section	Comments
SITE LOCATION	600 m upstream of Babine Lake.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed upper 250 m of reach.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Left riparian and right riparian 5-10 m of twinberry, alder, devil's club, cottonwood and spruce.

															Reach a			ILP #
١	Water	shed Co	de:		000-000000	-00000	-0000	0-0000	-000	0-000-0	00-000-	.000-0	000-000	1	.0	-	ILP Map # 093L.099	4021
		9	Sector A	74. 1993 (S			ster a				BOD							
							$\{ \xi_i\}_{i \in I}$		<b>4</b> .4	IER	500	Constant Constant						
G		d Name										L	.ocal: l	Jnnamed (	Creek			
	-				0000-00000 0000-00000													
		body ID		00000-0	0000-00000	-0000-0	000-0				093L.09	90		ILP #	ŀ 40:	216	Reach #:	1 -
		oject ID		1									/Stream				rom Date:	·
	Fish I	Permit #	14	5013K	Date	: 2001	1/07/18	В	То	: 2001	/07/18		Agency:	C141	Cre	w:ML/	NF F	Resample:
								S I	TE	/ M	ETH	O D						
Site#	N	D Map	NIC	)#	JTM:Zone/E	200 P. 10		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	MTD	NEAR STREET	Temp	Cor	1.000	rbid	on an	(	Comment	26628 10660 (1997) (1997)
4	09	3L.099	461	12	1	T			MT	1	9	13	0 0	2				
4	09	3L.099	461	12	1				MT	2	9	13	0 (	2				
4	09	3L.099	461	12					MT	3	9	130	) (	0				
4	09	3L.099	461	12					MT	4	9	130		0				
4	09	3L.099	461	12					MT	5	9	130		2				·····
								A.G	EA	RS	ETT	I N G	5					
Site#	M	TD/NO	H/P	Date	ln Time	in	Date (	Out	Time	Out					Comn	nent		
4	М	T 1	1	2001/07	/17 18:	50 2	001/0	7/18	18:	51								
4	_ M		1	2001/07			001/0		18:									
4	M		1	2001/07			001/0		18:	<u></u>								
4	M	_	1	2001/07			001/0		18:									
4	M	T 5	<b>1</b>	2001/07	/17 18:		001/0		18:						2857 FT 165		NER STATIST	
					sta filmen	В.,	NE	1111	(A)	0 P	EUII	-10	ATIO	N S	Wiger (c	Nele (spinis)		
Site				TD/NO.		H/F		Ne	et Typ	pe	Leng	ıth	_	epth	Mes	sh	Set	Habit
4			/IT		1	1							_	0.4			BT	PL
4	·	-	/T /T	_	2	1		_						0.3			BT BT	PL
4	•		/T /T		3 4	1							_	0.3			BT	PL PL
4			ИТ ИТ	_	4 5	1								0.4			BT	PL PL
- 	• 	" Nacional	/11 (8):22:03	20 5490203	<u> </u>	1			CU	611	MMA	DV	0.055007	<u>0.3 [</u>	R. A. Maria	84450266		
		00203							844 SW		1.00	585 A. A.	10.805.56		0635953			838. Act (19
Site#	+	MTD/N		H/P	Species	Stag	je	Age		Total #	<del> </del>	n (Mii 80	n/Max) 80	FishAct R			Commer	nt
A	_	<u>ит</u> ит	1 2	1	CT NFC	NS	$\rightarrow$		-	1			80	<u> </u>				
4	_	лт ИТ	3	1 1	CT	NS	-+		+	1	+	67	67	R	+			
4			4	1 1	СТ	NS	-+			1	_	77	77	R	+			
4	_		5	1	СТ	NS			- +	1	_	68	68	R				
4							IN	DIV	DL	AL	FISH	ГĎ	ATA			1996 N 19		
4 4 4		ит		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		91. J. 2. A. A. A.	Sex			Ag		Τvc	24 G 4 G 4 G 4 4 2 4 4	enetic	Roll #	Frame#		Comment
4 4 4 4	N N	и́т	I н/Р	Species	Length V	Veiaht I				-				r/Smpl#			ļ	
4 4 4 4	N N		H/P	Species	Length V	Veight				Str/Smp	M#/AQU							
4 4 4	N N	и́т	H/P 1	Species CT	Length V 80	Veight	Ų	IM	+	str/Smp	a#/Age	+						
4 4 4 4 Site#	M M					Veight	U U	IM IM		Str/Smp	s#/Age	╞						
4 4 4 4 Site#	MT	1T D/NO	1	СТ	80	Veight		_		Str/Smp	s#/Age							
4 4 4 4 Site#	MT MT	1 D/NO	1	СТ СТ	80 67	Veight	U	IM		Str/Smp	si#/Age							
4 4 4 3 Site# 4 4 4	MT MT	1T D/NO 1 3 4	1 1 1	CT CT CT	80 67 77	Veight	U U	IM IM			ENTS							

1

12.23

SITE 4

Site #	4	
ILP #	40216	ILP Map # 093L.099
Reach #	1.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo:UCD #:1Image #:48Roll #:TC1Frame #:23Comment:650 metres upstream of Babine Lake.



Direction of Photo: D CD #: 1 Image #: 49 Comment: 650 metres upstream of Babine Lake.

Roll #: TC1 Frame #: 24

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1030

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						Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-000	000-00000-000	00-0000-0000-00	0-000-000-0	00-000-000	)	3.0	093L.099	40216	5
			, P	ROJE	) Т				
		and Fulton Lake	Tributaries						
Stream Name (gaz.): Project Watershed Code:			0-000-000-	000-000-00	0-000-000		oject Code:	1282	
	na National State of State and State State 5.								
			WA	TERSI	IED				
Gazetted Name: Watershed Code: 000-000	000-00000-000	000-0000-0000-00	0-000-000-0	00-000-000	)	Local Name:	Unnamed Creek		
ILP Map#: 093L.09	9 1	LP #: 40216	NID Map #:	093L.099	NID	#: 46113	Reach #:	3.0 8	Site #: 5
Field UTM (Z.E.N):		Method:				Site Lg: 100	Method: HC	Acces	ss: V2
GIS UTM (Z.E.N): 9.67171						Name:			_
Date: 2001	ר 107/20	Time: 12:30		cy: C141		ww:ML/NF	Fish Crd?	?: ⊻ In	complete:
			G width wid	HANN the width		width width	<b>.</b>	Gadient %	Mtd Avg
Mtd Channel Width (m): MS	width width 4.30 2.00	width width 1.70 1.90	2.50 2.4		widus	width width	Avg 2.47 Method I		Mtd Avg AL 1.00
Wetted Width (m): MS	4.00 2.00	1.70 1.60	1.90 1.9				2.18 Method II	:	
Pool Depth (m): MS	0.60 0.40	0.30 0.30	0.40 0.2	·			0.37 No Vis.Cl	=	ttent:
Wb Depth: .4	.5 .5	Avg: 0.47	Metho	d: MS	Stag	je: L 🗌 M 💽		w: 🗌 🛛 T	ribs.:
COVER		al: A		01/		CROWN CLO			
Type: SWD Amount: S	LWD	B U N S	DP D	ov s	IV N		20%		
Loc: P/S/O:						INSTREAM		M 🖌 V 🗌	
LWD: F	D	IST: E							
LB SHP: S						RB SHP:			
Texture: F	G 🗌 C 🗌						_ F 🖌 G 🗌 C [_	B	Α 🛄
RIP: S STG: SHR						RIP: STG:			
			4	WATE	<b>2</b> (19.54)				
EMS:				Adalah Gelin Kanada		Req #:			
Temp: 10			Method:	-		Cond.: 60		Met	hod: S4
pH: 7.8 Flood Signs: none'			Method: F Method: G	_		Turb.: T	□м□∟□с	✓ Met	hod: GE
			MOR	PHOL	OGY	a an			
Bed Material: D	ominant: C	Subdom				O1 B1	B2 B3 D1 I	D2 D3	
D95: 14.0	D (cm): 10.00			DISTURE					
Pattern: SI				INDICA	TORS	C1 C2	C3 C4 C5	S1 S2 S	3 S4 S5
Islands: O Coupling: DC					L				
Confinement: FC				R	ars:			MID[] SPA	
FSZ:									
			HABIT	AT QU					
Name Spawning Habitat	Excellent.				Cor	mments			
Rearing Habitat	Excellent.								
OverWinter Habitat	Excellent.			ното	S				
Photo Foo	Lg	Dir					Comments		
R: TC3 F: 2 S	TD	U				ence of ILP 40	219.		
R: TC3 F: 3 S	TD	D		es upstrear		ence of ILP 40	219.		

### 1:20K Reconnaissance Stream Inventory 2001

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Site 5

#### Wate

Reach # ILP Map # ILP # 3.0 093L.099 40216

ershed	Code:	000-000	0000-00	0000-00	0000-00	000-000	0-000-0	000-000-0	000-000-000	)

Section	Comments
SITE LOCATION	200 m upstream of confluence of ILP 40214.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed 400 m starting 60 m downstream of confluence of ILP 40219.
	COMMENTS
Section	Comments
SURVEY LOCATION	At confluence with ILP 40219 many large beaver ponds were present (approximately 15 m wide); sampling conducted in less impacted, narrow section where EF would be more efficient.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Valley bottom is 25-40 m wide, and where not flooded the dominant riparian vegetation is alder, willow, twinberry, cow-parsnip, cottonwood and spruce.

### **FDIS Fish Card**

1:20K Reconnaissance Stream Inventory 2001

Watershed Code:

Gazetted Name:

Waterbody ID:

Reach # ILP Map # ILP #

40216

Reach #:

3 -

3.0 093L.099

Fish Permit #: 145013K			45013K	Date: 2001/07/20			To: 2001/07/20			Agency: C141 C			Crew: ML / NF Resample:				
	~~~~					S	ITE /	ME	THO	D							
Site#	NID Ma	IP N	D#	UTM:Zone/	East/North	h/Mthd	MTD/N	OTe	emp	Cond	Turbid	d	Comment				
5	093L.0	9 46	113		1		EF	1	10	60	C	1.000					
	1		1			Α.	GEAF	SE	TTI	NGS							
Site#	MTD/N	O H/F	Date	In Tim	e In D	ate Out	Time Out					Comment					
5	EF	1 1	2001/0	7/20 12	30 20	01/07/20 13:00											
	1			C	ELE	CTRO	FISH	ER	SPE	CIFI	CAT	IONS					
Site#	MT	D/NO	H/P	Encl	Se	C L	ength	W	lidth	Volt	lage	Frequency	Pulse	Make	Mode		
5	EF	1	1	0	12	07	100.0	1	1.5	80	00	60	6	SR	15C		
						F	ISH S	SUM	MAR	ŶY							
Site#	MT	D/NO	H/P	Species	Stage	Ag	e T	otal #	Lgth	(Min/M	ax)	FishAct		Comment			
5	EF	1	1	NFC				0									
	1				No.		CON	ME	NTS								
	Sectio	n								Comm	ents						

WATERBODY

Local: Unnamed Creek

ILP Map #: 093L.099 ILP #: 40216

000-00000-00000-0000-0000-000-000-000-000-000-000

Site # ILP #	5 40216	ILP Map # 093L.099
Reach #	3.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 51 Comment: 250 metres upstream of confluence of ILP 40219.

Roll #: TC3 Frame #: 2



Direction of Photo: D CD #: 1 Image #: 52 Comment: 250 metres upstream of confluence of ILP 40219. Roll #: TC3 Frame #: 3

		Maria									Reach #		Map #	ILP		Site	
Watershed Code:	000-00	0000-00	000-000	000-000	-0000-0	00-000-				4	.0		093L.099	402	16	6	_
							22.2	OJE	CI								
Proje Stream Nan Project Watersh	ne (gaz.)	): BABI	INE RIV					0-000-0	00-000-0	000	F	Project Co	ode:		1282		
							WAT	ERS	HED		1	2			-		
Gazetted Name:	l.		1.1							Lo	cal Nam	e: Unnar	med Creek				
Watershed Code: ILP Map#:	093L.0	99	1	ILP #: 402	216		000-000 ap #: 09			IID #: 4		Read		4.0		te #: 6	
Field UTM (Z.E.N): GIS UTM (Z.E.N):			262	M	ethod:				R	Site L ef. Nam	g: 100 e:		Method: HC	2	Access		
Dat	e: 200	1/08/23		Time: 09:	52	1	Agency:	C141	(	Crew:	NFRS		Fish Crd?	: 🗆	Inco	omplete	r: [
		10-5-5					СН	ANN	EL			- de a					
Channel Width (m):	Mtd MS	width	width 1.20	width	width 0.40	width 0.30	width	width	width	width	width	Avg	Method I:	Gadie	nt %		AV
Wetted Width (m):	MS	0.70	1.20	0.60	0.40	0.30	1.10		-		-	0.72	Method II:	7.5		AL	7.5
Pool Depth (m):	MS	0.10	0.10	0.10	0.20	0.10	0.20					0.13	10000				
Wb Depth:	.1	.1	.1	Avg	: 0.10	N	Aethod:	MS	S	tage: L	M		No Vis.Ch		ntermitte Trib		Í.
COVER			Tot	tal: M									-				
Type:	SWD	LV	ND	В	U	DP	,	ov	IV	CR	OWN CI	OSURE					
Amount:	D	_	D	N	T	N	_	S	T	2		1-40%					
Loc: P/S/O:										INS	STREAM	VEG:		MD	VV		
LWD:	F		D	DIST: E													
LB SHP:	S										RB SHP	: S					
Texture:	FV	G	сП	BDI							Texture	: F 🔽	GCC	ВП	R		
RIP	С										RIP						
STG	YF										STG	: YF					
-		222					W	ATE	R		1					22	~
EMS:											teq #:						
Temp:							od: T3			C	ond.: 12	0			Metho	d: S4	
pH: Flood Signs:		oted					od: FD			1	Turb.: T		L C C	~	Metho	d: GE	
			-					HOI	OGY		-						
Pad Material		lomine			Oubda	1.2	- o KI			01	B1	B2 B	B3 D1 D	)2 D3	1		_
Bed Material: D95:	0.01	Dominan D (cm)	): 0.01		Subdom Morph				DANOT								
Pattern:		- 1007	rn 2020				1	INDICA		C1	C2	C3 (	C4 C5 S	51 S2	S3	S4	
Islands:										ГП							Т
Coupling:																	1.1
Confinement:								-							0044	_	-
FSZ:								в	ars:	N	SID	E			SPAN[		В
				-		HA	BITA	TQ	JALI	ΤY		- 102					
Name Commiss Habits									(	Commer	its						_
Spawning Habitat	_	_		oropriate :	_				_	-							
Overwinter Hanits							nd abur	dant se	epage st	eps mal	ke acces	s very di	fficult for fish.				
OverWinter Habita Rearing Habitat								OTO			-						
							PF	1010	15								
Rearing Habitat		ic Lg		Di	ir	T						Commer					_
Rearing Habitat	5	IC Lg STD STD			ir U D		v of site	approxi	mately 5		es upstre	eam of tri	ts butary ILP 402 butary ILP 402				_

Section SITE LOCATION

Section

#### 1:20K Reconnaissance Stream Inventory 2001

Reach # ILP Map # 40 0931 09

ILP #

9	40216

22

Site

6

40 032.039 40216
Comments
Approximately 500 m upstream of mapped confluence with tributary ILP 40225.
COMMENTS
Comments

SURVEY LOCATION	Surveyed 200 m starting at site location and going upstream.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Stream has only enough momentum to scour away surface vegetation and debris. Substrate was entirely fines. Many short seepage steps (approximately 1.5 m) were also observed. Stream may be ephemeral.

	COMMENTS
Section	Comments
FISH PRESENCE	Not suspected due to poor habitat quality and barrier downstream in reach 2. This stream was not sampled.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Riparian band on both banks consisting of horsetail, arrow leafed groundsel, alpine fir, oak fern, willow.
	COMMENTS
Section	Comments
BARRIER	A 5 m falls was observed from the helicopter in reach 2, 680 m upstream of tributary ILP 40217.

Site #	6	
ILP #	40216	ILP Map # 093L.099
Reach #	4.0	
Water	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 79 Roll #: TC5 Frame #: 1 Comment: View of site approximately 520 metres upstream of tributary ILP 40225.



 Direction of Photo:
 X
 CD #:
 1
 Image #:
 70
 Roll #:
 TC4
 Frame #:
 14

 Comment:
 Aerial view of 5 metres falls located downstream in reach 2.
 Frame #:
 14

	Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-000000-00000-0000-0000-000-000-000	1.0	093L.099	40219	7
PROJECT				
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0		ject Code:	1282	
WATERSHED				
Gazetted Name:	Local Name:	Unnamed Creek		
Watershed Code: 000-000000-00000-0000-0000-0000-000-00				
ILP Map#: 093L.099 ILP #: 40219 NID Map #: 093L.099 NID	0 #: 46116	Reach #:	1.0	Site #: 7
	Site Lg: 100 Name:	Method: HC	Acc	ess: V2
Date: 2001/07/20 Time: 11:40 Agency: C141 Cre	ew: ML/NF	Fish Crd?	?: 🔽 1	Incomplete:
CHANNEL				
	width width	Avg	Gadient %	Mtd Avg
Channel Width (m): MS 1.70 2.10 0.80 1.90 0.70 1.80		1.50 Method I	_	AL 7.25
Wetted Width (m):         MS         1.70         2.10         0.80         1.90         0.70         1.80		1.50 Method II	:	
Pool Depth (m): MS 0.30 0.20 0.35 0.25 0.35 0.15		0.27 No Vis.Ch	n.: D Intern	nittent:
Wb Depth: .3 .3 .3 Avg: 0.30 Method: MS Stag	ge: L 🗌 M 🔽			Tribs.:
COVER Total: A				
	CROWN CLO	CUDE		
Type:         SWD         LWD         B         U         DP         OV         IV           Amount:         S         S         N         T         D         S         N		40%		
			MELVE	
	INSTREAM	EG: N 🖌 A 🗌		1
LWD: A DIST: C				
LB SHP: S	RB SHP: S	3		
	RB SHP: S Texture:			
Texture: F 🖌 G 🗌 C 🗌 B 🔤 R 🗌 A	Texture:	F 🗹 G 🗌 C 🗌	] B 🗌 R 🛛	- A []
Texture: F 🖌 G 🗌 C 🗌 B 🔤 R 🗌 A 🛄 RIP: M	Texture: RIP: M	F ☑ G □ C □ /	] <sup>B</sup> [] <sup>R</sup> [	
Texture: F 🖌 G C C B R A C RIP: M STG: YF	Texture:	F ☑ G □ C □ /	] B 🗌 R [	
Texture: F 🖌 G C C B R A C RIP: M STG: YF WATER	Texture: RIP: N STG: Y	F ☑ G □ C □ /	) <sup>B</sup> [] R [	
Texture: F 🖌 G C C B R A C RIP: M STG: YF WATER EMS:	Texture: RIP: N STG: Y Req #:	F ☑ G □ C □ /		
Texture:       F ♥ G □ C □ B □ R □ A □         RIP: M       STG: YF         WATER         EMS:       Temp: 10         Method:       T3	Texture: RIP: M STG: Y Req #: Cond.: 100	F ፼ G □ C □ 4 ⁄F	Me	thod: S4
Texture:       F       G       C       B       R       A         RIP: M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M       M	Texture: RIP: M STG: Y Req #: Cond.: 100	F ☑ G □ C □ /	Me	
Texture:       F ♥ G □ C □ B □ R □ A □         RIP: M       M         STG: YF       WATER         EMS:       Temp: 10         Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE	Texture: RIP: M STG: Y Req #: Cond.: 100	F ፼ G □ C □ 4 ⁄F	Me	thod: S4
Texture:       F       G       C       B       R       A         RIP: M       M       STG: YF       WATER         WATER         EMS:       Temp: 10       Method: T3         pH: 7.2       Method: FD       Flood Signs: none         Flood Signs: none       Method: GE       MORPHOLOGY	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T	F 🗹 G 🗌 C 🗌 //F	Me V	thod: S4
Texture: F G C B R A R RIP: M STG: YF WATER EMS: Temp: 10 Method: T3 pH: 7.2 Method: FD Flood Signs: none Method: GE MORPHOLOGY Bed Material: Dominant: F Subdom: NS	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T	F 🗹 G 🗌 C 🗌 //F	Me	thod: S4
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod:       T3         Temp: 10       Method:       T3         pH: 7.2       Method:       FD         Flood Signs: none       Method:       GE         Bed Material:       Dominant:       F       Subdom:       NS         D95: 10.0       D (cm):       10.00       Morph:       SPB       DISTURBANCE	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T	F 🗹 G 🗌 C 🗌 //F	Me V	thod: S4
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D05: 10.0       D (am): 10.00       Method: SDD	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E	F 🖌 G 🗌 C 🗌 A /F ] M 🗌 L 🗌 C 32 B3 D1 I	Me	thod: S4 thod: GE
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB         Pattern: SI       INDICATORS         Islands: N       [	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E	F 🖌 G 🗌 C 🗌 A /F ] M 🗌 L 🗌 C 32 B3 D1 I	Me	thod: S4 thod: GE
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB         Pattern: SI       INDICATORS       INDICATORS         Islands: N       Coupling: DC       [	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E	F 🖌 G 🗌 C 🗌 A /F ] M 🗌 L 🗌 C 32 B3 D1 I	Me	thod: S4 thod: GE
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         Temp: 10       Method: T3         pH: 7.2       Method: GE         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB         Pattern: SI       INDICATORS         Islands: N       Coupling: DC         Confinement: FC       Demini	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T	F ፼ G C C C C C C C C C C C C C C C C C C	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB         Pattern: SI       INDICATORS       INDICATORS         Islands: N       Coupling: DC       [	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E	F ፼ G C C C C C C C C C C C C C C C C C C	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         Temp: 10       Method: T3         pH: 7.2       Method: GE         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB         Pattern: SI       INDICATORS         Islands: N       Coupling: DC         Confinement: FC       Demini	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C N SIDE	F ፼ G C C C C C C C C C C C C C C C C C C	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Pattern: SI       Islands: N       INDICATORS       INDICATORS         Stands: N       Eastrice       Bars:         Coupling: DC       Bars:       HABITAT QUALIT	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C N SIDE	F ፼ G C C C C C C C C C C C C C C C C C C	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S5
Texture:       F       G       C       B       R       A         RIP: M       STG: YF       WATER         EMS:       Wathod: T3         Temp: 10       Method: FD         pH: 7.2       Method: GE         Flood Signs: none       Morph OLOGY         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Islands: N       INDICATORS       INDICATORS         Stands: N       E       Bars:         Coupling: DC       Bars:       E         FSZ:       Bars:       E	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C 01 C2 C 01 SIDE N SIDE	F ፼ G C C C C C C C C C C C C C C C C C C	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF         WATER         EMS:         Temp: 10       Method:       T3         pH: 7.2       Method:       FD         Flood Signs: none       Method: GE       GE         MOR PHOLOGY         Bed Material:       Dominant:       F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Pattern: SI       INDICATORS       INDICATORS         Islands: N       Coupling: DC       Bars:         Confinement: FC       Bars:       Ears:         FSZ:       Bars:       Cord         Name       Confinement:       Confinement:         Spawning Habitat       None.       Confinement:         Rearing Habitat       Good due to many large deep pools created by beaver activity.	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C 01 C2 C 01 SIDE N SIDE	F ፼ G C C C C C C C C C C C C C C C C C C	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF         WATER         EMS:         Temp: 10       Method:       T3         pH: 7.2       Method:       FD         Flood Signs: none       Method: GE       Morph OLOGY         Bed Material:       Dominant:       F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Pattern: SI       INDICATORS       INDICATORS         Islands: N       E       E         Coupling: DC       Confinement: FC       Bars:         FSZ:       Bars:       E         Name       Cou       Cou         Spawning Habitat       None.       Cou         Rearing Habitat       Good due to many large deep pools created by beaver activity.         OverWinter Habitat       Fair: some pools may allow overwintering.	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C 01 C2 C 01 SIDE N SIDE	F G C C A A F M L C 32 B3 D1 I 33 C4 C5 S C4 C5 S	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF         EMS:       WATER         Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Pattern: SI       INDICATORS       INDICATORS         Islands: N       E       Bars:         Coupling: DC       Bars:       E         FSZ:       Bars:       E         Name       Cor         Spawning Habitat       None.         Rearing Habitat       Good due to many large deep pools created by beaver activity.         OverWinter Habitat       Fair: some pools may allow overwintering.	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C N SIDE Y mments	F	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8
Texture:       F       G       C       B       R       A         RIP: M       STG: YF         WATER         EMS:       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Pattern: SI       INDICATORS       INDICATORS         Islands: N       [       Coupling: DC       [         Coupling: DC       Confinement: FC       Bars:       [         FSZ:       Bars:       [       Bars:       [         Name       Coupling: DC       E       Bars:       [         VertWinter Habitat       None.       E       Coupling: DC       Coupling: DC       Coupling: DC       Coupling: DC       Coupling: DC       Coupling: DC       P       P       P       Coupling: DC       Coupling: DC       Coupling: DC       Coupling: DC       P       Coupling: DC       Coupling: DC       Coupling: DC       Coupling: DC       Coupling: DC       C	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C N SIDE Y mments	F ♥ G C C A A A A A A A A A A A A A A A A A	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S5
Texture:       F       G       C       B       R       A         RIP: M       STG: YF         EMS:       WATER         Temp: 10       Method: T3         pH: 7.2       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: F       Subdom: NS         D95: 10.0       D (cm): 10.00       Morph: SPB       DISTURBANCE         Pattern: SI       INDICATORS       INDICATORS         Islands: N       E       Bars:         Coupling: DC       Bars:       E         FSZ:       Bars:       E         Name       Cor         Spawning Habitat       None.         Rearing Habitat       Good due to many large deep pools created by beaver activity.         OverWinter Habitat       Fair: some pools may allow overwintering.	Texture: RIP: M STG: Y Req #: Cond.: 100 Turb.: T 01 B1 E 01 B1 E 01 C2 C 01 C2 C N SIDE Y since with mainste	F ♥ G C C A A A A A A A A A A A A A A A A A	Me D2 D3 S1 S2 S	ethod: S4 ethod: GE S3 S4 S8

#### 1:20K Reconnaissance Stream Inventory 2001

Site 7

 Reach #
 ILP Map #
 ILP #

 1.0
 093L.099
 40219

shed Code: 000-000000-00000-00000-0000-00	00-000-000-000-000-000 1.0	Í.

Section	Comments
SITE LOCATION	Started at confluence with mainstem.
	COMMENTS
Section	Comments
SITE DESCRIPTION	Section sampled had been heavily influenced by beaver activity which created several organic steps (0.3 to 0.6 m).
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 480 m of reach.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Beaver damn influenced section in lower 150 m; upstream of which average channel width was approximately 0.8 m.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Left riparian and right riparian 8-12 m consisting of alder, cow-parsnip, baneberry, twinberry, cottonwood, and spruce.

# **FDIS Fish Card**

#### 1:20K Reconnaissance Stream Inventory 2001

Watershed Code:

ILP Map # ILP # Reach #

000-000000-00000-0000-0000-000-000-000-000-000-000-000	

1.0	093L.0

40219 99

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F	Project	Code:	480-0	00000	0000-0000-0000-0000-000-000-000-000-000-													
	WS	Code:	000-0	00000	0-00000	-00000-00	00-0000-00	00-00	00-000-000	000-00	0							
N	/aterbo								ILP Map #	: 093L			ILP #:			1 -		
	Proje	ect ID:	1282				-				Lake/St	ream:	S	Lake From	n Date:			
F	ish Per	mit #:	145	013K		Date:	2001/07/20	)	To: 2001/07/20 Agency: C141 Crew: ML / NF Resample:									
		10.10			-			S	ITE /	MET	HOD	1						
Site#	NID	Map	NID	#	UTM:	UTM:Zone/East/North/Mthd		d	MTD/NO	Tem	Cond	Turbi	d	Co	mment			
7	093L	.099	461	16	100				EF 1	10	100	C	10					
							1	۹.	GEAR	SET	TINGS	5						
Site#	MTD	/NO	H/P	Da	ate In	Time In	Date C	Dut	Time Out Comment									
7	EF	1	1	200	1/07/20	11:34	2001/07											
						C.E	LECT	RO	FISHE	RSI	PECIFI	CAT	IONS					
Site#	N	ITD/N	0	O H/P		Encl Sec		Length		Widt	n Vo	Itage	Frequency	Pulse	Make	Mode		
7	EF		1		1	0	614		100.0	0.5	6	600	60	6	SR	15C		
								F	ISH SI	JWW	ARY							
Site#	N	ATD/N	0	H/P Species Stage Age Total		al #	_gth (Min/N	Max)	FishAct		Comment							
7	EF		1	1	N	FC				0								
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	Sec	tion							-	-	Comn	nents						

Site #	7 40219	II B Man # 0021 000
Reach #	1.0	ILP Map # 093L.099
	hed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-



Direction of Photo: U CD #: 1 Image #: 25 Comment: 50 metres upstream of confluence with mainstem.

Roll #: TC2

Frame #: 25



Direction of Photo: D CD #: 1 Image #: 50 Comment: 50 metres upstream of confluence with mainstem.

Roll #: TC3 Frame #: 1



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					-		WAT	ERS	HED			1	<u></u>	12.3		20	1	100
Gazetted Name:											Local Na	ame: l	Jnnam	ed Creek				
Watershed Code:																		
ILP Map#:		99	IL	_P #: 40:	222	NID M	lap #: 09	3L.099	N	ND #	: 46117		Reach	#:	2.0		Sit	e #: 8
Field UTM (Z.E.N): GIS UTM (Z.E.N):		16 6092	069	M	lethod:				R		te Lg: 100 lame:			Method:	HC	1.9	Access	: H
Date	e: 200'	1/08/22	Т	"ime: 09:	:30		Agency:	_		Crew	RSN	F	_	Fish (	Crd?:		Inco	omplete:
F		2.01		1.44		1.00	-	ANN		1.					-		. A( ]	
Channel Width (m):	Mtd MS	width 1.10	width 1.00	width 0.80	width 0.70	width 0.80	width 1.20	width	width	W	dth wid	_	.93	Metho	_	Badien	8.0	AL 18.5
Wetted Width (m):	MS	0.10	0.20	0.20	0.10	0.10	0.10				-	-	.13	Metho		0.0 1	0.0	10.0
Pool Depth (m):	MS	0.10	0.10	0.20	0.10	0.20	0.10					_	.13	1	1	_		_
Wb Depth:	.2	.2	.3		. 0.00		dathad							No Vis	S.Ch.:	_ In	termitte	ent:
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Amount: Loc: P/S/O:	T	1		S	S	N		D	N		3	41-7	1%					
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LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7	S F 🔽 MF 7 7.6	) G 🗌				Meth Meth Meth	od: T3 od: FD od:GE		R	-	RB SI Textu F S' Req #: Cond.: Turb.:	HP: U ure: I RIP: C TG: MI 100 T		G _ C	С У		R	d: S4
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material:	S F C MF 7 7.6 none	Dominant	C 🔽	B []	Subdom	Meth Meth Meth	od: T3 od: FD od:GE			-	RB SI Textu F S <sup>3</sup> Req #: Cond.:	HP: U ure: I RIP: C TG: MI		G _ C	<b>№</b> В		R	d: S4
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: r Bed Material: D95:	S F V C MF 7 7.6 none 14.0	Dominant	c 🔽	B []		Meth Meth Meth	od: T3 od: FD od: GE	PHOL	D G Y		RB S Textu F S Req #: Cond.: Turb.:	HP: U Ire: I RIP: C TG: MI 100 T B2 B2	= =   M _ B3	G _ C			R	d: S4 d: GE
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LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands; N	S F C MF 7 7.6 none 14.0 ST N	Dominant	C 🔽	B []	Subdom	Meth Meth Meth	od: T3 od: FD od: GE	PHOL	D G Y		RB S Textu F S Req #: Cond.: Turb.:	HP: U Ire: I RIP: C TG: MI 100 T B2 B2	= =   M [ 	G _ C			R	d: S4 d: GE
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C	S F MF 7 7.6 hone 14.0 ST N CO	Dominant	C 🔽	B []	Subdom	Meth Meth Meth	od: T3 od: FD od: GE	PHOL	D G Y		RB S Textu F S Req #: Cond.: Turb.:	HP: U Ire: I RIP: C TG: MI 100 T B2 B2	= =   M [ 	G _ C			R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C	S F MF 7 7.6 hone 14.0 ST N CO CO	Dominant	C 🔽	B []	Subdom	Meth Meth Meth	od: T3 od: FD od: GE	PHOL DISTUR INDICA	D G Y		RB S:           Textu           F           S'           Req #:           Cond.:           Turb.:           D1           D1           D1           D1           D1           D1	HP: U Ire: I RIP: C TG: MI 100 T B2 B2		G _ C			R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C	S F MF 7 7.6 hone 14.0 ST N CO CO	Dominant	C 🔽	B []	Subdom	Meth Meth Meth F ; CP	od: T3 od: FD od: GE MORF	PHOL DISTUR INDICA	BANCE ATORS		RB S:           Fexture           F           S'           Req #:           Cond.:           Turb.:           D1           D1           D1           D1           D1           D1			G _ C	C V D2 S1		R	d: S4 d: GE
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C Confinement: C FSZ:	S F MF 7 7.6 hone 14.0 ST N CO CO	Dominant	C 🔽	B []	Subdom	Meth Meth Meth F ; CP	od: T3 od: FD od: GE MORF	PHOL DISTUR INDICA	BANCE ATORS Bars: UALI		RB SI Textu F S Cond.: Turb.: D1 B1 D1 B1 D1 C2 D1 C2 D1 C2 S			G _ C	C V D2 S1		R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C Confinement: C FSZ: [	S F MF 7 7.6 hone 14.0 ST N CO CO	Dominani D (cm)	C <b>▼</b> t: C t: 10.00	B   1	Subdom	Meth Meth Meth F ; CP	od: T3 od: FD od: GE MORF	PHOL DISTUR INDICA	BANCE ATORS Bars: UALI		RB S:           Fexture           F           S'           Req #:           Cond.:           Turb.:           D1           D1           D1           D1           D1           D1			G _ C	C V D2 S1		R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C Confinement: C FSZ:	S F C MF 7 7.6 none 14.0 ST N CO CO	Dominant D (cm)	C V t: C t: 10.00	B	Subdom Morph	Meth Meth Meth F : CP H A	od: T3 od: FD od: GE MORF	PHOL DISTUR INDICA	BANCE ATORS Bars: UALI		RB SI Textu F S Cond.: Turb.: D1 B1 D1 B1 D1 C2 D1 C2 D1 C2 S			G _ C	C V D2 S1		R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C Confinement: C FSZ: [	S F C MF 7 7,6 none 14.0 ST N CO CO CO	Dominant D (cm)	C <b>▼</b> t: C t: 10.00	B	Subdom Morph	Meth Meth Meth F : CP H A	od: T3 od: FD od: GE MORF	PHOL DISTUR INDICA	BANCE ATORS Bars: UALI		RB SI Textu F S Cond.: Turb.: D1 B1 D1 B1 D1 C2 D1 C2 D1 C2 S			G _ C	C V D2 S1		R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattem: 5 Islands: N Coupling: C Confinement: C FSZ: Name Rearing Habitat OverWinter Habitat	S F C MF 7 7,6 none 14.0 ST N CO CO CO	Dominani D (cm) none - none -	C V t: C t: 10.00	B	Subdom Morph	Meth Meth Meth F : CP H A	od: T3 od: FD od: GE MORE	PHOL DISTUR INDICA	BANCE ATORS Bars: UALI		RB SI Textu F S Cond.: Turb.: D1 B1 D1 B1 D1 C2 D1 C2 D1 C2 S			G _ C	C V D2 S1		R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattem: 5 Islands: N Coupling: C Confinement: C FSZ: Name Rearing Habitat OverWinter Habitat	S F C MF 7 7,6 none 14.0 ST N CO CO CO L	Dominani D (cm) none - none -	C V t: C t: 10.00	B	Subdom Morph	Meth Meth Meth F : CP H A	od: T3 od: FD od: GE MORE		BANCE ATORS Bars: UALI		RB SI Textu F S Cond.: Turb.: D1 B1 D1 B1 D1 C2 D1 C2 D1 C2 S	HP: U JIP: C TG: MI 100 T B2 C3 C3 LIDE		G _ C	C V D2 S1		R	d: S4 d: GE S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: 7 pH: 7 Flood Signs: n Bed Material: D95: Pattern: S Islands: N Coupling: C Confinement: C FSZ: [ Name Rearing Habitat OverWinter Habitat Spawning Habitat	S F C MF 7 7,6 none 14.0 ST N CO CO CO T 14.0 ST ST ST ST ST ST ST ST ST ST ST ST ST	Dominan D (cm) none - none - none	C V t: C t: 10.00	B _ 1	Subdom Morph	Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho Metho	od: T3 od: FD od: GE MORF		BANCE ATORS Bars: UALI OS	( [] ( [] TY Comr	RB SI Textu F S Cond.: Turb.: D1 B1 D1 B1 D1 C2 D1 C2 D1 C2 S	HP: U Jre: I RIP: C TG: MI 100 T B2 C3 C3 C0 C0 r	M C	G _ C G _ C B _ L	C V D2 D2 S1 MID MID		R	d: S4 d: GE S4 S

#### 1:20K Reconnaissance Stream Inventory 2001

ILP #

40222

ILP Map #

093L.099

Site

8

		Reach #
Watershed Code: 000	000000-0000-0000-0000-000-000-000-000-000-000	2.0
Section		Comments
SITE LOCATION	Approximately 1400 m upstream of confluence with mainst	em (ILP40222).

SITE LOCATION	Approximately 1400 m upstream of confluence with mainstem (ILP40222).
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 250 m of the reach.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Alder and horsetail, but mature fir to stream bank.
	COMMENTS
Section	Comments
FISH PRESENCE	Not sampled due to no fish captured downstream in mainstem and very low discharge at time of survey. No fish present due to no fish present in mainstem.



Direction of Photo: U CD #: 1 Image #: 62 Roll #: TC4 Frame #: 6 Comment: Approximately 1400 metres upstream of confluence with mainstem (ILP 40222).



Direction of Photo: D CD #: 1 Image #: 63 Roll #: TC4 Comment: Approximately 1400 metres upstream of confluence with mainstem (ILP 40222).

Frame #: 7

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Watershed Code:	: 000-000	000-000	000-000	000-000	0-0000-00	00-000-0	000-000	0-000-00			.0	0	33L.033	402	23	9
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					ton Lake	Tributar	ies									
Stream Nam	10 /										F	roject Co	de:		1282	
Project Watersh	ed Code	: 480-0	00000-0	00000-00	0000-000	00-000-00	-000-00	0-000-0	00-000-000	000						
	12.1		2.2	22			WAT	ERS	HED							
Gazetted Name:										Lo	cal Nam	e: Unnam	ed Creek			
Watershed Code: ILP Map#:				LP #: 40				0-000-00 03L.099		ID #: 4	6118	Reach	. #.	1.0		Site #: 9
and the second second second						THE INC	ap #. 00	01.000				Noaci				
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														_		
Dat	te: 2001	1/08/23	T	Time: 08:	:45	1	Agency			Crew:	RS NF		Fish Cr	rd?: ∐	In	complete:
				-			-	ANN	_							
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Channel Width (m): Wetted Width (m):	MS	-	-		-		-	-		-	-	0.00	Method		9.0	AL 8.50
Pool Depth (m):		-				-	-	+	-		-	0.00			-	
		_	_	1	5110					S	1.73			_		ttent:
Wb Depth:				Avg	g: 0.00	N	lethod:		S	tage: L	M		]	Dw:	Т	ribs.:
COVER			Tota	al:												
Type:	SWD	LW	/D	В	U	DP	,	OV	IV	CR	OWN CL	OSURE				
Amount:		-	-		_	-	_									
Loc: P/S/O:		111 1										AT 1011 1112				
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LWD: LB SHP:			DI	IST:						] IN:	RB SHP			_ M _ `	v 🗆	
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LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands:	F	ominant	с	B []	Subdom	Metho Metho Metho	od: od: od: GE	PHOL	D G Y	- F (	RB SHP Texture RIP STG Req #: Cond.: Turb.: T B1	: ; ; B2 B	G _ C		R Metr Metr	nod: nod:
LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern:	F	ominant	с	B []	Subdom	Metho Metho Metho	od: od: od: GE	PHOL	D G Y	- F (	RB SHP Texture RIP STG Req #: Cond.: Turb.: T B1	: ; ; B2 B	G _ C		R Metr Metr	nod: nod: 3 S4 S
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LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: PH: Flood Signs: D95: Pattern: Islands: Coupling: Confinement: FSZ: Name	none	ominant D (cm):	с	B []	Subdom Morph	Metho Metho Metho	od: od: cd: GE IORI I BITA	PHOI DISTUR INDICA E	BANCE ATORS Bars: UALI		RB SHP Texture RIP STG Req #: Cond.: Turb.: T B1 C2 C2 SID	: F	G _ C	C D2 S1	R Meth Meth	nod: nod: 3 S4 S
LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling: Confinement: FSZ: Name Other Photo TC4 F: 1	none	ominant D (cm): none	с	B [] 1	Subdom Morph	Metho Metho Metho HAI	od: od: od: GE IORI BITA PI metres		BANCE ATORS Bars: UALI OS am of cor		RB SHP Texture RIP STG Req #: Cond.: Turb.: T B1 C2 SID SID	: F	G C C	C D2 S1	R Meth Meth	nod: nod: 3 S4 S
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SITE LOCATION

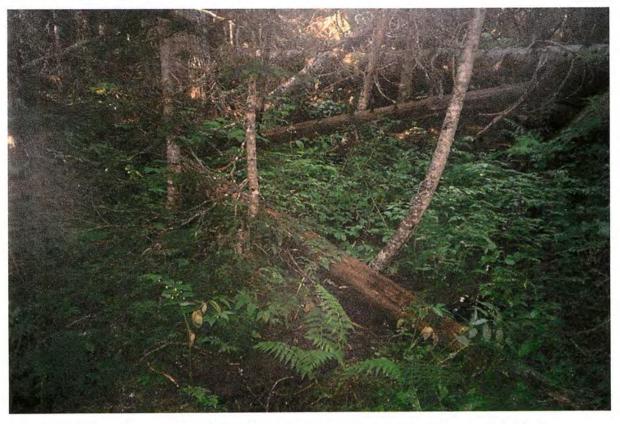
#### 1:20K Reconnaissance Stream Inventory 2001

and the second second		
Watershed Code:	000-000000-00000-0000-0000-000-000-000-000-000-000	

ILP # Reach # ILP Map # Site

00	000-0000-0000-0000-000-000-000-000-000-000-000	1.0	093L.099	40223	9
1	Approximately 250 m upstream of confluence with mainstem I	LP 40222.			

	COMMENTS
Section	Comments
SITE DESCRIPTION	Channel consists of short sections of defined channel and 3-10 m sections of seepage.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Stream runs through mature fir forest with little riparian vegetation.
Charles and the second	COMMENTS
Section	Comments
FISH PRESENCE	No fish present and no potential for fish habitat further upstream due to high gradient in reach 2.



Direction of Photo: U CD #: 1 Image #: 58 Roll #: TC4 Frame #: 2 Comment: 150 metres upstream of confluence with mainstem (ILP 40222).



Direction of Photo:DCD #:1Image #:59Roll #:TC4Frame #:3Comment:150 metres upstream of confluence with mainstem (ILP 40222).



WaterMed Cols: 005-00000-0000-0000-0000-0000-0000-000	Watershed Code: 000-0	0000-0000-000	000.0000.0000.00	00.000.000.000.000	000	Reach # 2.0	ILP Map # 093L.099	ILP # 40327	Site 10
Project Name:       Babine Lake and Fution Lake Tributaries       Project Code:       1282         Project Watershed Code:       480-00000-00000-0000-0000-0000-0000-000						2.0	0002.000	40021	10
Bream Name (gaz):         BABINE RIVER         Project Code:         1282           Project Watersheet Code:         480-000000-00000-0000-0000-0000-0000-00	Delet N	D. Marchaller		- Charles					
Gazetted Name:         Local Name: <thlocal name:<="" th=""></thlocal>	Stream Name (gaz	.): BABINE RIVE	ER		-000-000-000	Pr	oject Code:	1282	
Waterheid Code: 000-0000-0000-0000-000-000-000-000-000				WATER	SHED	232			
ILP Mapp:       OS3L.099       ILP #.40327       NID Map #: 033L.099       NID #. 46113       Reach #:       2.0       Site 4: 0         Field UTM (Z.E. N):       Method:       Method:       Site 4: 10       Method: M	Gazetted Name:		Same and		8 C	Local Name	: Unnamed Creek		
GIS UTM (Z.E.N): 9.675826.6088040       Ref. Name:         Date: 2001/09/23       Time: 12.25       Agency: CH1       Orew: RS NF       Fish Crd?: Incomplete: Incomplet						46119	Reach #:	2.0 5	Site #: 10
CHANNEL           Channel Width, w	and the second se	326.6088040	Method:			and the second se	Method: HC	Acces	s: H
Mtd         Wdth         Wdth         Wdth         Wdth         Wdth         Wdth         Wdth         Wdth         Wdth         Mtd         Avg           Channel Width (m);         Mt         0.0         0.00         1.00         0.00         1.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00	Date: 200	01/08/23 T	Time: 12:25	Agency: C141	Crew	RS NF	Fish Crd?	: 🗹 In	complete:
Channel Width (m);         M5         1.00         9.00         1.20         1.10         0.00         1.50         1.10         Method:         8.0         A.L         8.00           Wetted Width (m);         M5         0.80         0.70         0.80         0.70         0.80         0.70         0.80         0.70         0.70         0.80         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70         0.70 <td< td=""><td></td><td></td><td></td><td>CHAN</td><td>NEL</td><td></td><td></td><td></td><td></td></td<>				CHAN	NEL				
Wethed Width (m):         MS         0.80         0.70         0.80         0.70         0.80         0.77         Method II           Webod Depth (m):         MS         0.30         0.10         0.20         0.20         0.10         0.17         Mo Vis Ch.:         Intermittent:            Web Depth (m):         MS         0.30         0.10         0.20         0.20         0.10         0.10         0.17         Mo Vis Ch.:         Intermittent:            Web Depth         2         2         Avg. 0.20         Method:         MS         Stage:         L         M         H         Dor:         Dor:         Dor:          Dor:         Trate:          Dor:         Trate:         Dor:					th width wi	dth width			
Peod Depth (m)         MS         0.30         0.10         0.20         0.20         0.10         0.10         0.17         No Vis Ch.:         intermittent:           Wb Depth         2         2         Avg. 0.20         Method: MS         Stage: L         M         M         H         No Vis Ch.:         Intermittent:           COVER         Total: M         Total: M         DP         OV         N         Stage: L         M         M         H         Dx:         Tribs.:         Dx:         Tribs.:         Dx:         Tribs.:         Tribs.:         Dx:         Tribs.:         Dx:         Tribs.:         Dx:         Tribs.:         Dx:         Tribs.:         Dx:         Tribs.:									AL 8.00
Wb Depth:         2         2         Avg. 0.20         Method:         MS         Stage:         L         M         H         Dvs         Tribe:           COVER         Total:         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M         M </td <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td>1. 1.</td> <td></td> <td></td>					-		1. 1.		
COVER         Total: M           Type:         SWD         LWD         B         U         DP         OV         N           Loc:         PS/OC         Image: Signal and the sis and the signal and the sis and the sistem of Babine L			1000 mm	10 m m	Stage		No Vis.Ch		
Amount         T         S         T         T         N         D         N         S         >90%           Loc. P/S/O         Image: Signal				Mothod. Mo	olugo				
Loc: P/S/C       INSTREAM VEG:       N       A       M       V         LWD: F       DIST. E       RB SHP: S       Texture: F       G       C       B       R       A       M       V         LWD: F       DIST. E       RB SHP: S       Texture: F       G       C       B       R       A       M       N       A       A       A       A       A       N       V       LWD: F       DIST. E       RB SHP: S       Texture: F       G       C       B       R       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A<	Type: SWI	D LWD	BU	DP OV	IV	CROWN CLO	DSURE		
LWD: F         DIST: E           LB SHP: S         RB SHP: S           Texture:         F         G         C         B         R         A         RB SHP: S           RIP: D         STG: MF         STG: MF         RIP: D         STG: MF         RIP: D         STG: MF           WATER           EMS:         Req #:           Temp: 12         Method: T3         Cond: 110         Method: S4           PH: 7.9         Method: GE         Turb: T         M         L         C         Method: GE           MORPHOLOGY           Bed Material:         Dominant: F         Subdom: C         O         D         B         B2         B3         D1         D2         D3           Device (Confinement: CO         Subdom: C         D         DISTURBANCE         C1         C2         C3         C4         S1         S2         S3         S4         S5           INDICATORS         C1         C2         C3         C4         C3         C3         C4         C3		S	T T	N D	N	5 >	90%		
LB SHP: S       RB SHP: S         Texture:       F O G C O B R A R         RIP: D       STG: MF         STG: MF       RIP: D         EMS:       Ref #:         Temp: 12       Method: T3         Conditions:       Cond: 110         Method: FD       Turb: T M L C O Method: GE         Flood Signs: beaver dam debris       Method: GE         Definition:       Dominant: F         Subdom: C       O' B B       B2       B3       D1       D2       D3         Pattern: SI       Islands: N       InDiCATORS       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands: N       Conging: CO       Morph: CP       DISTURBANCE       InDiCATORS       InDice Tots	Loc: P/S/O:					INSTREAM	VEG: N 🖌 A 🗌	MUVU	
Texture:       F       G       C       B       R       A       RIP: D         STG:       MF       STG: MF       STG: MF       RIP: D       STG: MF         WATER         Req #:         Temp: 12       Method: T3       Cond.: 110       Method: S4         ph: 7.9       Method: GE       Turb:       T       Method: S4         MORPHOLOGY         Bed Material:       Dominant: F       Subdom: C         D95: 10.0       D (cm): 6.50       Morph: CP       DISTURBANCE       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands:       Norph: CP       DISTURBANCE       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands:       N       DICATORS       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands:       N       SIDE       DIAG       MID       SPAN       BR         VerWiner Habitat       Some good cover.       Comments       Comments       Comments       Comments       Comments	LWD: F	D	IST: E		1.00				
Texture:       F       G       C       B       R       A       RIP: D         STG:       MF       STG: MF       STG: MF       RIP: D       STG: MF         WATER         Req #:         Temp: 12       Method: T3       Cond.: 110       Method: S4         ph: 7.9       Method: GE       Turb:       T       Method: S4         MORPHOLOGY         Bed Material:       Dominant: F       Subdom: C         D95: 10.0       D (cm): 6.50       Morph: CP       DISTURBANCE       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands:       Norph: CP       DISTURBANCE       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands:       N       DICATORS       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands:       N       SIDE       DIAG       MID       SPAN       BR         VerWiner Habitat       Some good cover.       Comments       Comments       Comments       Comments       Comments	LB SHP: S					RB SHP:	s		
RIP: D       RIP: D         STG: MF       STG: MF         WATER         EMS:       Req #:         Temp: 12       Method: T3       Cond.: 110       Method: S4         pH: 7.9       Method: GE       Turb: T   M   L   C   Method: GE       Method: GE         Flood Signs: beaver dam debris       Method: GE       Turb: T   M   L   C   Method: GE         MORPHOLOGY         Bed Material:       Dominant: F       Subdom; C       O1   B1   B2   B3   D1   D2   D3       Method: GE         Pattern: SI       Islands: N       O1   O(m): 6.50       Morph: CP       DISTURBANCE       C1   C2   C3   C4   C5   S1   S2   S3   S4   S5         Islands: N       Oupling: CO       Confinement: CO       Bars:       N   SIDE        DIAG   MID   SPAN   BR         Comments         Rearing Habitat       Some good cover.         PHOTOS         PHOTOS         Photo       Foc Lg       Dir       Approximately 1700 metres upstream of Babine Lake.       Method: R         R TO4 F I 15 STD U       Approximately 1700 metres upstream of Babine Lake.									A
STG: MF         WATER         EMS:       Req #:         Temp: 12       Method: T3       Cond: 110       Method: S4         pH: 7.9       Method: GE       Turb: T M L C V       Method: GE         Flood Signs: beaver dam debris       Method: GE       Turb: T M L C V       Method: GE         Mothod: Signs: beaver dam debris       Mothod: FD       Turb: T M L C V       Method: GE         Mothod: Signs: beaver dam debris       Mothod: C       Method: GE       Method: GE         Mothod: Signs: beaver dam debris       Subdom: C       Mothod: GE       Method: Signs: Dominant: F       Method: GE         Bed Material:       Dominant: F       Subdom: C       OI B1 B2 B3 D1 D2 D3       D3       F         Islands: N       Coupling: CO       DISTURBANCE       C1 C2 C3 C4 C5 S1 S2 S3 S4 S5       S5         Islands: N       SIDEV       DIAG       MID       SPAN       BR         Mame       Comments       Rearing Habitat       Some good cover.       Comments       Second cover.       SiDEV       DIAG       MID       SPAN       BR         Mame       Comments       Some good cover.       Comments       Comments       Second cover.       Second cover.       Second cover.       Second cov									-
EMS:       Req #:         Temp: 12       Method: T3       Cond.; 110       Method: S4         pH: 7.9       Method: FD       Turb.: T   M   L   C   Method: GE         MORPHOLOGY         MORPHOLOGY         Bed Material:       Dominant: F       Subdom: C         D95: 10.0       D (cm): 6.50       Morph: CP       DISTURBANCE       O1       B1       B2       B3       D1       D2       D3         Pattern: SI       Islands: N       Coupling: CO       Morph: CP       DISTURBANCE       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands: N       Coupling: CO       Confinement: CO       FS2:       Bars:       N       SIDE DIAG       MID       SPAN       BR         PHOTOS         PHOTOS         PHOTOS         PHOTOS         Photo       Foc Lg       Dir       Approximately 1700 metres upstream of Babine Lake.       Mathod: S4         Photo       Foc Lg       Dir       Approximately 1700 metres upstream of Babine Lake.       Mathod: S54									
Temp: 12 pH: 7.9 Flood Signs: beaver dam debris       Method: T3 Method: FD Method: GE       Cond:: 110       Method: S4         Price       Method: GE       Turb.: T M L C Method: GE       Method: GE         MOR PHOLOGY       Method: GE       Method: GE       Method: GE         Method: GE       Method: GE       Method: GE       Method: GE         More Presson       Method: GE       Method: GE       Method: GE         More Presson       Method: GE       Method: GE       Method: GE         Bed Material:       Dominant: F D95: 10.0 D (cm): 6.50       Subdom: C Morph: CP       O1       B1       B2       B3       D1       D2       D3         Pattern: SI Islands: N Coupling: CO Confinement: CO FSZ:       Subdom: C Morph: CP       DISTURBANCE INDICATORS       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Bars:       N       SIDE       DIAG       MID       SPAN       BR         VerWinter Habitat       Some good cover.       Comments       VerWinter Habitat       VerWinter Habitat       VerWinter Habitat       VerWinter Habitat       F       T       T       Method: SE       VerWinter Habitat       VerWinter Habitat       VerWinter Habitat       A few gravel bars.       VerWinter Habit			and the second second	WAT	ER		and the second		
pH: 7.9 Flood Signs: beaver dam debris       Method: FD Method: GE       Turb:: T       M       L       C       Method: GE         MOR PHOLOGY         MOR PHOLOGY         Bed Material:       Dominant: F D95: 10.0       Subdom: C Morph: CP       O1       B1       B2       B3       D1       D2       D3         Pattern: SI Islands: N Coupling: CO Confinement: CO FSZ:       Description       Mithod: SPAN       BR         Etail Material:       Dominant: F Morph: CP       Subdom: CP Morph: CP       DISTURBANCE INDICATORS       O1       B1       B2       B3       D1       D2       D3       V         Pattern: SI Islands: N Coupling: CO Confinement: CO FSZ:       Description       DISTURBANCE INDICATORS       DIAG       MID       SPAN       BR         HABITAT QUALITY       Bars:       N       SIDE       DIAG       MID       SPAN       BR         Rearing Habitat       Some good cover.       Comments       Side						Req #:			
Flood Signs: beaver dam debris       Method: GE       Iurb.: / M L C M       Method: GE         MOR PHOLOGY       MOR PHOLOGY         Bed Material:       Dominant: F       Subdom: C       01 B1 B2 B3 D1 D2 D3         D95: 10.0       D (om): 6.50       Morph: CP       DISTURBANCE       01 C2 C3 C4 C5 S1 S2 S3 S4 S5         Islands: N       Coupling: CO       Confinement: CO       FSZ       DIAG       MID       SPAN       BR         HABITAT QUALITY         Photo Foc Lg       Comments         Rearing Habitat       Some good cover.         OverWinter Habitat       Limited         Photo Foc Lg       Dir       Comments         Photo Foc Lg       Dir         Photo Foc Lg       Dir         Material: 15 STD       U       Approximately 1700 metres upstream of Babine Lake.						Cond.; 110		Meth	nod: S4
MORPHOLOGY           Bed Material:         Dominant: F         Subdom: C           D95: 10.0         D (cm): 6.50         Morph: CP           Pattern: SI         Islands: N         DisturBANCE           Coupling: CO         Confinement: CO         FSZ:           Bars:         N         SIDE         DIAG         MID         SPAN         BR           PAttern: SI           Islands: N         Coupling: CO           Confinement: CO         Bars:         N         SIDE         DIAG         MID         SPAN         BR           PAttern: SI           Islands: N         Coupling: CO         Confinement: CO         Bars:         N         SIDE         DIAG         MID         SPAN         BR           FSZ:         Photo         FOE Lg         Dir           Photo S         Comments           Photo Foe Lg         Dir           Comments           STD         U         Approximately 1700 metres upstream of Babine Lake.		dam debris				Turb.: T	_ M _ L _ C	Meth	od: GE
Bed Material:       Dominant: F       Subdom: C         D95: 10.0       D (cm): 6.50       Morph: CP         Pattern: SI       Islands: N         Islands: N       Islands: N         Coupling: CO       Confinement: CO         FSZ:       Bars:       N         Name         Comments         Name         Comments         OverWinter Habitat         Jamited       Some good cover.         OverWinter Habitat         Limited       Some good cover.         PHOT OS	, lood oigna, bedver				1008				-0
Definitiant. F       Subdom, C         D95: 10.0       D (cm): 6.50       Morph: CP         Pattern: SI       INDICATORS       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Islands: N       Coupling: CO       Coordinement: CO       FSZ:       DISTURBANCE       D				and the second se		01 B1	B2 B3 D1 F	2 03	and the second
Pattern: SI       INDICATORS       C1       C2       C3       C4       C5       S1       S2       S3       S4       S5         Coupling: CO       Confinement: CO       FSZ:       Bars:       N       SIDE       DIAG       MID       SPAN       BR         HABITAT QUALITY         PHOTOS         PHOTOS         OverWinter Habitat       Some good cover.         OverWinter Habitat       Limited         Spawning Habitat       A few gravel bars.         PHOTOS         Photo       Foc Lg       Dir       Comments         Comments         Photo S         Comments         Comments         State         PHOTOS         Comments         Comments         State         Comments         Comments         Comments         State         Comments         Comments         State         Photo       Comments <td></td> <td></td> <td></td> <td>00</td> <td></td> <td></td> <td></td> <td></td> <td></td>				00					
Islands: N       Coupling: CO         Coupling: CO       Confinement: CO         FSZ:       Bars:       N         SIDE       DIAG       MID         Name       Comments         Rearing Habitat       Some good cover.         OverWinter Habitat       Limited         Spawning Habitat       A few gravel bars.         PHOTOS       PHOTOS         R:       TC4       F:         15       STD       U         Approximately 1700 metres upstream of Babine Lake.       Image: Comment of Babine Lake.         R:       TC4       F:       16         STD       D       Approximately 1700 metres upstream of Babine Lake.		D (citi). 0.50	worph.	DISTU					
Coupling: CO       Confinement: CO       Bars:       N       SIDE       DIAG       MID       SPAN       BR         HABITAT QUALITY         Comments         Rearing Habitat       Some good cover.         OverWinter Habitat       Some good cover.         OverWinter Habitat       Limited         Spawning Habitat       A few gravel bars.         PHOTOS         Photo       Foc Lg       Dir       Comments         R: TC4       F:       15       STD       U       Approximately 1700 metres upstream of Babine Lake.       Image: Colspan="4">Approximately 1700 metres upstream of Babine Lake.         R: TC4       F:       16       STD       D       Approximately 1700 metres upstream of Babine Lake.       Image: Colspan="4">Image: Colspan="4"         Image: Colspan="4"				INDI				S1 S2 S3	S4 S5
Confinement: CO         Bars:         N         SIDE         DIAG         MID         SPAN         BR           HABITAT QUALITY           Comments           Rearing Habitat         Some good cover.         Comments           OverWinter Habitat         Limited									
HABITAT QUALITY         Name       Comments         Rearing Habitat       Some good cover.         OverWinter Habitat       Limited         Spawning Habitat       A few gravel bars.         P HOT OS       PHOT OS         Photo       Foc Lg       Dir         Comments       Comments         Photo       Foc Lg       Dir         R:       TC4       F:       15       STD       U       Approximately 1700 metres upstream of Babine Lake.         R:       TC4       F:       16       STD       D       Approximately 1700 metres upstream of Babine Lake.							a surer i	1450 (181)	-
Name     Comments       Rearing Habitat     Some good cover.       OverWinter Habitat     Limited       Spawning Habitat     A few gravel bars.       P HOT O S       Photo     Foc Lg       Dir     Comments       R:     TC4     F:     15       STD     U     Approximately 1700 metres upstream of Babine Lake.       R:     TC4     F:     16       STD     D     Approximately 1700 metres upstream of Babine Lake.	FSZ:				Bars: I				
Rearing Habitat         Some good cover.           OverWinter Habitat         Limited           Spawning Habitat         A few gravel bars.           P HOT O S           Photo         Foc Lg         Dir         Comments           R:         TC4         F:         15         STD         U         Approximately 1700 metres upstream of Babine Lake.           R:         TC4         F:         16         STD         D         Approximately 1700 metres upstream of Babine Lake.				HABITAT	QUALITY				
OverWinter Habitat         Limited           Spawning Habitat         A few gravel bars.           P HOT O S           Photo         Foc Lg         Dir         Comments           R:         TC4         F:         15         STD         U         Approximately 1700 metres upstream of Babine Lake.           R:         TC4         F:         16         STD         D         Approximately 1700 metres upstream of Babine Lake.		0			Com	ments			
Spawning Habitat         A few gravel bars.           P HOT OS           Photo         Foc Lg         Dir         Comments           R:         TC4         F:         15         STD         U         Approximately 1700 metres upstream of Babine Lake.           R:         TC4         F:         16         STD         D         Approximately 1700 metres upstream of Babine Lake.			ver.						
PHOTOS           Photo         Foc Lg         Dir         Comments           R:         TC4         F:         15         STD         U         Approximately 1700 metres upstream of Babine Lake.           R:         TC4         F:         16         STD         D         Approximately 1700 metres upstream of Babine Lake.			ars.						
R:         TC4         F:         15         STD         U         Approximately 1700 metres upstream of Babine Lake.           R:         TC4         F:         16         STD         D         Approximately 1700 metres upstream of Babine Lake.				рнот	05				
R: TC4 F: 16 STD D Approximately 1700 metres upstream of Babine Lake.	Photo F	oc Lg	Dir			C	Comments		
						the state of the s			
	R: 104 F: 16	SID	D			ream of Babir	ne Lake.		

#### 1:20K Reconnaissance Stream Inventory 2001

ILP #

Site

10

ILP Map # 2.0 093L.099 40327

Reach #

Section	Comments
SITE LOCATION	Approximately 1700 m upstream of Babine Lake.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed upper 300 m of reach.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Stream is overgrown with lady fern.
	COMMENTS
Section	Comments
BARRIER	Two soft barrier steps 1.3 m and 1.2 m were observed and others are suspected downstream suggesting no fish passage at time of survey.
C. Michigan	COMMENTS
Section	Comments
FISH PRESENCE	Resampling in lake reach 3 and resampling this reach are required to confirm fish absence.

# **FDIS Fish Card**

Wa	atersh	ed Cod	le:	e: 000-000000-00000-0000-0000-0000-000-00					2.	Reach # 0		9 Map # 3L.099	ILP # 40327					
		-			-				WATE	RB	0 D	Y			252			
	roject								00-000-000 00-000-000			Loca	al: U	nnamed C	reek			
W		ody ID: ject ID:							ILP Map #	: 093		9 Lake/Str	eam:	ILP #	403	27 Re Lake Fron	each #: n Date:	2 -
Fi	sh Pe	ermit #:	_14	5013K	-	Date:	2001/08	8/23	To: 20	01/08	3/23	Age	ency:	C141	Crew	: NF/RS	Re	sample:
								S	ITE /	ME	ТН	OD						
Site#	NIC	) Map	NID	#	UTM:	Zone/Ea	st/North/	Mthd	MTD/NO	Te	mp	Cond	Turt	bid		Cor	nment	
10	093	L.099	461	19			1		EF 1	1	2	110	С	- 10 C				
							1	Α.	GEAR	SE	TTI	NGS		1.				
Site#	MT	D/NO	H/P	Da	te In	Time I	n Da	te Out	Time Out				-		Comme	ent		
10	EF	1	1	2001	/08/23	12:10	200	1/08/23	12:21									
		1				С.	ELEC	TRO	FISHE	RS	S P E	CIFI	CA	TIONS	i i			
Site#		MTD/N	0	H	/P	Encl	Sec		ength	Wi	dth	Volt	age	Freque	ncy	Pulse	Make	Mode
10	EF		1	1	1	0	601		100.0	(	0.6	50	00	60	10.0	6	SR	12B
								F	ISH SI	JMI	MA	RY					free a ser	
Site#	1.000	MTD/N	0	H/F	Sp	ecies	Stage	Ag	e Tota	al #	Lgt	h (Min/M	ax)	FishAct			Comment	
10	EF	10	1	1	N	FC				0		111			1			
									COMM	IEN	ITS				10 Carlos	_		
	Se	ction		1								Comm	ents					
ERCEN	THAE	BITAT S	SHOCK	ED S	Shocked	1 40% riff	le, 35%	pool, 25	% glide over	som	e goo	od habita	t, but	many larg	e steps v	were prese	nt.	
SAMP	LING	EFFIC	IENCY	_					dy fern ove				1.1	,				

Site #	10	
ILP #	40327	ILP M
Reach #	2.0	
Waters	hed Code	000-00000-00000-0

ILP Map # 093L.099



Direction of Photo: U CD #: 1 Image #: 71 Roll #: TC4 Frame #: 15 Comment: Approximately 1700 metres upstream of Babine Lake.



Direction of Photo: D CD #: 1 Image #: 72 Comment: Approximately 1700 metres upstream of Babine Lake.

Roll #: TC4 Frame #: 16



	Reach # ILP Map # ILP # Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	11.0 093L.099 40327 11
PROJECT	
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0	Project Code: 1282 000
WATERSHED	
Gazetted Name:	Local Name: Unnamed Creek
Watershed Code: 000-00000-0000-0000-0000-000-000-000-0	NID #: 46120 Reach #: 11.0 Site #: 11
ILP Map#: 093L.099 ILP #: 40327 NID Map #: 093L.089 Field UTM (Z.E.N): Method:	NID #: 46120 Reach #: 11.0 Site #: 11 Site Lg: 100 Method: HC Access: V4
	Ref. Name:
Date: 2001/07/19 Time: 11:50 Agency: C141	Crew: ML / NF Fish Crd?: Incomplete:
CHANNEL	
Mtd width width width width width width width width	h width width Avg Gadient % Mtd Avg
Channel Width (m): MS	0.00 Method I: 2.5 3.0 AL 2.75
Wetted Width (m):           Pool Depth (m):	0.00 Method II:
Pool Depart (m).	No Vis.Ch.: V Intermittent:
Wb Depth: Avg: 0,00 Method:	Stage: L M H H Dw: Tribs.:
COVER Total:	
Type: SWD LWD B U DP OV IV	CROWN CLOSURE
Amount: Loc: P/S/O: [	
LWD: DIST:	
LB SHP:	RB SHP:
RIP: C STG: PS	RIP: C STG: PS
	515.10
WATER	
EMS: Temp: Method:	Req #: Cond.: Method:
pH: Method:	
Flood Signs: Method:	Turb.: T  M  L C  Method:
MORPHOLOG	Y
Bed Material: Dominant: Subdom:	O1 B1 B2 B3 D1 D2 D3
D95: D (cm): Morph: DISTURBANCE	
Pattern: INDICATORS	C1 C2 C3 C4 C5 S1 S2 S3 S4 S5
Islands:	
Coupling: DC Confinement: OC	The Course Course of the State of the State
FSZ: Bars:	
HABITAT QUAL	ITY
Name	Comments
Other None.	
PHOTOS	
Photo         Foc Lg         Dir           R:         TC2         F:         5         STD         U         750 metres upstream of in	Comments
R:     TC2     F:     6     STD     D     750 metres upstream of in	
COMMENTS	
Section	Comments

#### 1:20K Reconnaissance Stream Inventory 2001

Site

11

Reach # ILP Map # ILP #

11.0 093L.099 40327

	COMMENTS
Section	Comments
SITE LOCATION	700 m upstream of inlet to lake in reach 9.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 600 m of reach.
and Manager	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Reach consisted of a riparian band in shallow gully with no sign of alluvium or fluvial deposits; reach over section surveyed was NCD
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	40 m band of willow, alder, twinberry, and grasses between replanted spruce and pine.

Site # ILP #	11 40327	ILP Map # 093L.099
Reach #	11.0	
Waters	hed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 5 Comment: 750 metres upstream of inlet to lake in reach 9.

Roll #: TC2

Frame #: 5



Direction of Photo: D CD #: 1 Image #: 6 Comment: 750 metres upstream of inlet to lake in reach 9. Roll #: TC2 Frame #: 6

Sec. 1

No.

1

1

10

1

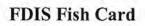
......

	Reach # ILP Ma	ıp# ILP#	Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	1.0 093	3L.089 40334	12
PROJECT			
Project Name: Babine Lake and Fulton Lake Tributaries			
Stream Name (gaz.): BABINE RIVER	Project Code	e 12	282
Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0			
WATERSHED			
Gazetted Name:	Local Name: Unname	d Creek	
Watershed Code: 000-00000-00000-0000-0000-000-000-000-	46121 Reach	#: 1.0	Site #: 12
			Access: V4
GIS UTM (Z.E.N): 9.675271.6084826 Ref. Na	-		
Date: 2001/07/19 Time: 10:35 Agency: C141 Crew:	ML / NF	Fish Crd?:	Incomplete:
GHANNEL			n
Mtd width width width width width width width width width wid	th width Avg	Gadient	% Mtd Avg
Channel Width (m):         MS         1.30         1.90         1.70         1.50         1.80	1.62		.0 AL 4.75
Wetted Width (m):         MS         1.20         1.80         1.50         1.40         1.50         1.60           Pool Depth (m):         MS         0.10         0.20         0.10         0.30         0.30	0.20	Method II:	
Wb Depth:         .4         .5         .4         Avg:         0.43         Method:         MS         Stage:		_	ermittent:
Wb Depth: .4 .5 .4 Avg: 0.43 Method: MS Stage:	∟ _ м 🖌 н	Dw:	Tribs.:
	CROWN CLOSURE		
Amount: S D N D T S T	2 21-40%		
	NSTREAM VEG: N	_ A _ M _ V	
LWD: F DIST: E			
LB SHP: U	RB SHP: U		
Texture: F 🖌 G 🖌 C 🗋 B 🔤 R 🗌 A	Texture: F 🖌 G		A 🗌
RIP: C STG: PS	RIP: C STG: PS		
	516. F5		
WATER	5 4		
EMS: Temp: 12 Method: T3	Req #: Cond.: 120		Method: S4
pH: 8.0 Method: FD			Method: GE
Flood Signs: oriented grass Method: GE			
MORPHOLOGY			
Bed Material: Dominant: G Subdom: F O	1 B1 B2 B3		
D95: 8.00 D (cm): 6.00 Morph: RP DISTURBANCE DISTURBANCE INDICATORS C	1 C2 C3 C4		63 64 6F
islands: N		C5 S1 S2	\$3 \$4 \$5
Coupling: PC			
Confinement: FC Bars: N			
		<b>_</b>	
	Alephate		NN I Manual I
NID Map         NID         Type         Hgt         Method         Lg         Method         Photo           093L.089         46143         BD         2.0         NS         0         NS         R:         TC2         F:         4         L:	AirPhoto #:	UTM (Z/E/ 9.675637.608	
Comments: 2 m high semi-permanent BD.			• · · · · · · · · · · · · · · · · · · ·
HABITAT QUALITY			
Name         Comm           Spawning Habitat         Excellent: spawning size gravel is abundant with adequate discharge			
Spawning Habitat         Excellent: spawning size gravel is abundant with adequate discharge           Rearing Habitat         Good: good discharge, sufficient cover, however water temperature			
OverWinter Habitat Good discharge but relatively deep pools.			

#### 1:20K Reconnaissance Stream Inventory 2001

1

Wa	atershe	ed Code: 000-0	00000-00000-00	0000-0000-0000-0000	000-000-000-000-000	1.0	093L.089	40334	12
					PHOTOS				
Photo Foc Lg Dir Comments									
R: TC2	F:	1	STD	U	View of site 570 metres up	stream of lake ILP 4	0327, R7.		
R: TC2	F:	2	STD	D	View of site 570 metres u	stream of lake ILP 4	0327, R7.		
R: TC2	F:	3	STD	NS	View of large beaver dam				
R: TC2	F:	4	STD	U	View of 2 metres high bea	ver dam 135 metres	upstream of lake ILI	9 40327, R7.	
					COMMENTS				
	Sec	tion				Comments			
SI	TE LO	CATION	550 m upstr	eam of lake ILP 4	0327, R7.				
					COMMENTS				
	Sec	tion				Comments			
SUR	RVEY L	OCATION	Surveyed lo	wer 680 m of stre	am.				
					COMMENTS				
	Sec	tion				Comments			
SURV	EY DE	SCRIPTION	Stream is en high (water le	ntrenched for 80 m evel has a 2 m dif	n starting just upstream of wetl fference on each side) permane	and edge of lake, wh ent beaver dam is ob	ere this ravine ends, structing fish passag	, 138 m upstrear je.	n of lake, a 2 m
					COMMENTS				
	Sec	tion				Comments			
SURVEY DESCRIPTION Beaver pond above dam is passable. Re-sampling recommended due to lake upstream of BD. Site was established above BD and road crossing where stream appears to provide good fish habitat in a frequently confined section.								bove BD and	
					COMMENTS				
	Sec	tion	T			Comments			
RIPARIAN VEGETATION Consists of twinberry, fireweed, cow-parsnip, and 2nd growth willow, aspen, and lodgepole pine in a 12-15 year old cut block with r leave-strip.								t block with no	



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ILP # ILP Map #

Watershed Code:

Reach # 40334

000-000000-00000-0000-0000-000-000-000-000-000-000 1.0 093L.089

Project ID:         1282         Lake/Stream:         S         Lake From           Fish Permit #:         145013K         Date:         2001/07/19         To:         2001/07/19         Agency:         C141         Crew:         ML / NF           SITE / METHOD           Site#         NID Map         NID #         UTM:Zone/East/North/Mthd         MTD/NO         Temp         Cond         Turbid         Comm           12         093L.089         46121         EF         1         12         120         C         C	Resamp								
WS Code:         000-000000-00000-0000-0000-000-000-000	Date: Resamp								
Waterbody ID: Project ID: 1282         ILP Map #: 093L.089         ILP #: Lake/Stream:         40334         Real Lake From           Fish Permit #:         145013K         Date: 2001/07/19         To: 2001/07/19         Agency: C141         Crew: ML / NF           Site#         NID Map         NID #         UTM:Zone/East/North/Mthd         MTD/NO         Temp         Cond         Turbid         Common           12         093L.089         46121         EF         1         12         120         C         C	Date: Resamp								
Project ID:         1282         Lake/Stream:         S         Lake From           Fish Permit #:         145013K         Date:         2001/07/19         To:         2001/07/19         Agency:         C141         Crew:         ML / NF           SITE         /         M ET H O D         Site#         NID Map         NID #         UTM:Zone/East/North/Mthd         MTD/NO         Temp         Cond         Turbid         Comm           12         093L.089         46121         EF         1         12         120         C         C	Date: Resamp								
Fish Permit #:         145013K         Date:         2001/07/19         To:         2001/07/19         Agency:         C141         Crew:         ML / NF           SITE         /         M ETHOD         Site#         NID Map         NID #         UTM:Zone/East/North/Mthd         MTD/NO         Temp         Cond         Turbid         Comm           12         093L.089         46121         EF         1         12         120         C	Resamp	ple:							
SITE / METHOD           Site#         NID Map         NID #         UTM:Zone/East/North/Mthd         MTD/NO         Temp         Cond         Turbid         Comm           12         093L.089         46121         EF         1         12         120         C		ple:							
Site#         NID Map         NID #         UTM:Zone/East/North/Mthd         MTD/NO         Temp         Cond         Turbid         Comm           12         093L.089         46121         EF         1         12         120         C	ment								
12 093L.089 46121 EF 1 12 120 C	ment								
		Comment							
A. GEAR SETTINGS									
Site# MTD/NO H/P Date In Time In Date Out Time Out Comment	Time Out Comment								
12 EF 1 1 2001/07/19 10:20 2001/07/19 11:00									
C. ELECTROFISHER SPECIFICATIONS									
Site# MTD/NO H/P Encl Sec Length Width Voltage Frequency Pulse	Make	Mode							
12 EF 1 1 0 1192 200.0 0.7 800 60 6	SR	15C							
FISH SUMMARY									
Site# MTD/NO H/P Species Stage Age Total # Lgth (Min/Max) FishAct C	comment								
12 EF 1 1 NFC 0									
COMMENTS									
Section Comments									
SAMPLING EFFICIENCY Efficiency was reduced by thick shrubby over-vegetation over much of the shocked area.									
ERCENT HABITAT SHOCKED EF over 40% pool (several nice scour pools with over-vegetation for cover), 40% glide (cobble/gravel	l substrato: off	ton with							

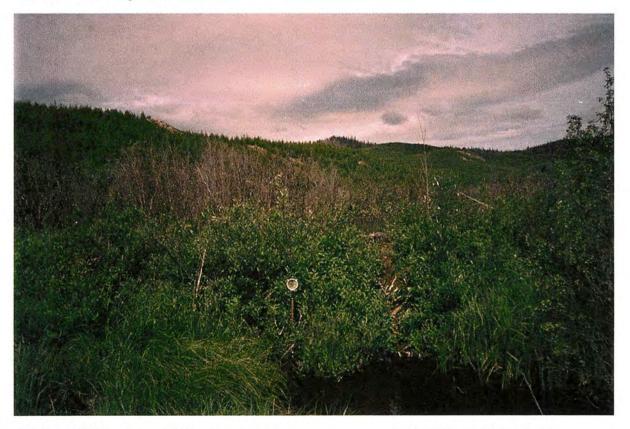
Site #	12	
ILP #	40334	ILP Map # 093L.089
Reach #	1.0	
Waters	shed Code:	000-00000-00000-0000-0000-000-000-000-000-000-000



Direction of Photo: NS CD #: 1 Image #: 3 Comment: View of large beaver dam.



Frame #: 3



Direction of Photo:UCD #:1Image #:4Roll #:TC2Comment:View of 2 metres high beaver dam, 135 metres upstream of lake ILP 40327, R7.

Frame #: 4

Site # ILP #	12 40334	ILP Map # 093L.089
Reach #	1.0	
Waters	hed Code:	000-000000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 1 Roll #: TC2 Frame #: 1 Comment: View of site 570 metres upstream of lake ILP 40327, R7.



Direction of Photo: D CD #: 1 Image #: 2 Comment: View of site 570 metres upstream of lake ILP 40327, R7. Roll #: TC2 Frame #: 2

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							Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-00	0-0000-0000-0	0000-0000-0000-0	00-000-0	00-000-	000-000	)	3.0	093L.089	40334	13
				PR	OJEC	)T				
Project Name	: Babine Lak	e and Fulton Lake	Tributari	es						
Stream Name (gaz.)								roject Code:	1282	
Project Watershed Code	: 480-00000	00000-00000-00	00-0000-	000-000	-000-00	0-000-000	)			
				NAT	ERSI	1ED				
Gazetted Name:							Local Name	: Unnamed Creek		i
Watershed Code: 000-00 ILP Map#: 093L.03		0000-0000-0000-0 ILP #: 40334	00-000-0 NID Ma				#: 46122	Reach #:	3.0 \$	Site #: 13
Field UTM (Z.E.N):		Method:		p #. 000	2.000		Site Lg: 100	Method: HC		
GIS UTM (Z.E.N): 9.6734	78.6086440	in our our					Name:			
Date: 200	/08/23	Time: 13:45	A	gency:	C141	Cre	w: RS NF	Fish Crd	?: 🗹 in	complete:
	e de la companya de l	a and a second second		СН	ANN	ÊL 👘				
Mtd	width width	h width width	width	width	width	width	width width	Avg	Gadient %	Mtd Avg
Channel Width (m): MS Wetted Width (m): MS	4.00 1.50 4.00 1.50	2.00 1.80 2.00 1.80	1.20 1.20	1.50 1.50				2.00 Method		AL 0.00
Pool Depth (m):	4.00 1.30	2.00 1.00	1.20	1.50				0.00		
Wb Depth: .6	.8 .7	Avg: 0.70	м	ethod:	MS	Star	ge:L∏MI	No Vis.C		ttent: 🛄 ribs.: 🔲
COVER		tal: M		culou.		0105			•••. <u> </u>	
Type: SWD	LWD	B U	DP		ov T	IV	CROWN CL	OSURE		
Amount: N	N	N N	S		s	D	0	0%		
Loc: P/S/O:							INSTREAM	VEG: N 🗌 A 🔽	M 🗌 V 🔽	
LWD: N		DIST: NA								
LB SHP: S							RB SHP:			:
	GCC							F 🖌 G 🗌 C 🗌	ВПКГ	A []
RIP: W STG: NA							RIP: STG:			
	New York Control of the		en en service	NAT						
EMS:					ATE		Req #:			
Temp: 13			Metho	d: T3			Cond.: 130	)	Met	nod: S4
pH: 7.2			Metho				Turb.: T	Met	nod: GE	
Flood Signs: none	Novelation of the gas care of p	an and the state of the second	Metho		000001100-0000	5-11.1998 2014 10 1294 10-1				Sterness in the second state and state
			M	ORE	HOL	OGY	O1 B1	B2 B3 D1	D2 D3	
Bed Material: D D95: 0.01	ominant: F D (cm): 0.0	Subdom 1 Morph				Г	01 B1			
Pattem: IM	D (cm). 0.0		I. LU		ISTURE		C1 C2	C3 C4 C5	<u> </u>	3 S4 S5
Islands: N						Γ				
Coupling: DC						L				
Confinement: UN FSZ:					B	ars:			MID SPA	
			11 A C		<b>.</b>	ALIT				
Name	1		<u>.</u> плі	711 A	1. WL		n mments			
Rearing Habitat	Good deep o	channel but tempe	rature is l	ikely to	o warm					
OverWinter Habitat		tially deep enough	sections	in char	inel.					
Spawning Habitat	none.		N.S. Leve	PH	OTO	S				
Photo Fo	c Lg	Dir						Comments		
R: TC4 F: 17 5	STD	U						n reach 2 of ILP 4033		
R: TC4 F: 18 5	STD	D			ly 200 n		tream of lake i	n reach 2 of ILP 4033	4	

#### 1:20K Reconnaissance Stream Inventory 2001

ILP #

Site

ILP Map #

Reach #

Watershed Code: 000-000000-00000-00000-0000-000-000-00	

3.0 093L.089 40334 13 Section Comments SITE LOCATION Approximately 200 m upstream of lake in reach 2 of ILP 40334. COMMENTS Section Comments SITE DESCRIPTION This reach is a long 30-50 m wide wetland reach between lakes with a series of beaver ponds. COMMENTS Section Comments **RIPARIAN VEGETATION** Willow, sedges, and alder in a 30 m wide band on both river right and left. COMMENTS Section Comments FISH PRESENCE Suspect fish are absent upstream of reach 1 in this drainage, but lake resampling is required to confirm.

SKR Consultants Ltd.

### **FDIS Fish Card**

anode ring.

1:20K Reconnaissance Stream Inventory 2001

Reach # ILP Map # ILP # Watershed Code: 000-000000-00000-0000-0000-000-000-000-000-000-000 3.0 093L.089 40334 WATERBODY Gazetted Name: Local: Unnamed Creek Waterbody ID: ILP Map #: 093L.089 ILP #: 40334 Reach #: 3 -Project ID: 1282 Lake/Stream: S Lake From Date: Fish Permit #: \_145013K Date: 2001/08/23 To: 2001/08/23 Agency: C141 Crew: NF/RS Resample: SITE / METHOD Site# NID Map NID # UTM:Zone/East/North/Mthd MTD/NO Temp Cond Turbid Comment 093L.089 46122 13 EF 1 13 130 С A. GEAR SETTINGS MTD/NO H/P Date In Date Out Time Out Site# Comment Time In 13 EF 1 1 2001/08/23 13:32 2001/08/23 13:41 C. ELECTROFISHER SPECIFICATIONS Site# MTD/NO Width Voltage Pulse Make Model H/P Encl Sec Length Frequency 500 SR 12B 13 EF 1 1 0 823 100.0 1.5 60 6 FISH SUMMARY Site# MTD/NO H/P Species Stage Age Total # Lgth (Min/Max) FishAct Comment 13 EF NFC 0 1 1 COMMENTS Section Comments PERCENT HABITAT SHOCKED Shocked 100% beaver influenced large channel morphology. SAMPLING EFFICIENCY Efficiency very poor due to large channel morphology, wide channel, (lots of room to escape), difficult access and small

SKR Consultants Ltd.

Site #	13	
ILP #	40334	ILP Map # 093L.089
Reach #	3.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 73 Roll #: TC4 Frame #: 17 Comment: Approximately 200 metres upstream of lake in reach 2 of ILP 40334.



Direction of Photo:DCD #:1Image #:74Roll #:TC4Frame #:18Comment:Approximately 200 metres upstream of lake in reach 2 of ILP 40334.Frame #:18

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des

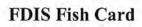
1

	Reach # ILP Map	# ILP # Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	1.0 093L	.089 40347 14
PROJECT		
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-0000-000-000-	Project Code:	1282
WATERSHED		
Gazetted Name:	Local Name: Unnamed (	Creek
Watershed Code: 000-000000-00000-0000-0000-000-000-000	#: 46123 Reach #:	1.0 Site #: 14
	ite Lg: 100 Me	thod: HC Access: V2
GIS UTM (Z.E.N): 9.678763.6086228 Ref. 1	Name:	
Date: 2001/07/20 Time: 09:00 Agency: C141 Crew	w: ML/NF	Fish Crd?: 🗹 Incomplete: 🗌
CHANNEL		
	vidth width Avg	Gadient % Mtd Avg Method I: 2.0 2.0 AL 2.00
Channel Width (m):         MS         1.20         1.50         1.70         2.00         1.50         1.60           Wetted Width (m):         MS         0.40         0.90         0.80         1.20         0.90         1.10		Method II:
Pool Depth (m): MS 0.10 0.15 0.10 0.20 0.10 0.15	0.13	No Vis.Ch.:
Wb Depth: .3 .4 .4 Avg: 0.37 Method: AL Stage		
COVER Total: M		
Type: SWD LWD B U DP OV IV	CROWN CLOSURE	
	3 41-70%	
	INSTREAM VEG: N	
LWD: F DIST: E		
LB SHP: S Texture: F 🖌 G 🖌 C 🔄 B ┌── R 🔄 A 📋	RB SHP: S	
	RIP: D	
STG: YF	STG: YF	
WATER	an a	
EMS:	Req #:	
Temp: 11 Method: T3	Cond.: 250	Method: S4
PH: 7.8 Method: FD Flood Signs: none Method: GE	Turb.: T 🔲 M 🗌 I	- C V Method: GE
MORPHOLOGY		
	O1 B1 B2 B3	D1 D2 D3
D95: 19.0 D (cm): 8.00 Morph: RP DISTURBANCE		
	C1 C2 C3 C4	C5 S1 S2 S3 S4 S5
Islands: N		
Coupling: PC Confinement: FC		
FEATURES		
NID Map NID Type Hgt Method Lg Method Photo	AirPhoto	UTM (Z/E/N) Method
093L.089         46147         CV         .7         NS         0         NS         R:         TC2         F:         22         L:           Comments: at Granisle Hwy crossing	#:	9.678742.6086208 GIS
HABITAT QUALITY	Iments	
		· · · · · · · · · · · · · · · · · · ·
Spawning Habitat Good: plenty of gravel available.		
Spawning Habitat         Good. premy of graver available.           Rearing Habitat         Moderate: low frequency of quality pools reduces quality of rearing           OverWinter Habitat         Poor: no pools likely suitable.	habitat.	

#### 1:20K Reconnaissance Stream Inventory 2001

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	Wate	ershe	ed Code: 000	-00000-00000-0	0000-0000-0000-0	000-000-000-000-000	Reach # 1.0	ILP Map # 093L.089	ILP # 40347	Site 14
						PHOTOS	e antes			
	Pho	to		Foc Lg	Dir		C	omments		
R:	TC2	F:	20	STD	U	60 metres upstream of Bat	ine Lake.			
R:	TC2	F:	21	STD	D	60 metres upstream of Bab	ine Lake.			
R:	TC2	F:	22	STD	U	View of 0.7 metres hanging	culvert.			
						COMMENTS				
		Sec	tion				Comments			
	SIT	E LO	CATION	Started 20	n upstream of Bab	bine Lake.				
	12	1.4			an an the state of the	COMMENTS				and the second sec
-		Sec	tion				Comments			
	SURV	EY L	OCATION	Surveyed lo	wer 300 m of read	h.				
						COMMENTS		and the second		
		Sec	tion				Comments	in the second		The second s
		BAR	RIER	Although th highway.	e culvert at the Gra	anisle Highway did not appear to	be a barrier to fish	passage, no fish we	ere captured ups	tream of the
						COMMENTS			all and	
		Sec	tion				Comments			
RI	RIPARIAN VEGETATION 10-15 m band of riparian vegetation on each side of stream consisting of alder, twinberry, gooseberry, and cottonwood.									d.



	Natorel	hed Co	de:		000-0000	00-0000	-00000	.0000	.0000-0	00-000	0.000-00	0.000.	000		Reach		P Map # 93L.089	ILP #
	rators				000-0000	00-00000					ODY		000					
								1	IA II		001				1 h	1100		
G		Name:										Loca	al: U	nnamed	Creek			
					0000-0000													
				0-00000	0000-0000	00-000-00	000-00							ILP :		347 R	each #:	1 -
		ody ID: ject ID:							LP Map	0 #: 08		ake/Str	oom.		4. 40	Lake Fro		1
_	110	ject ib.	1202					-				ano/ou	Garn.	0		Earce 110	n Dato.	
	Fish Pe	ermit #:	14	5013K	Da	ate: 200	1/07/20		To:	2001/0	7/20	Age	ency:	C141	Cre	w: ML/N	Resa	mple:
				2.0		-		SI	TE /	ME	THO	D						
Site#	NI	) Map	NID	)#	UTM:Zone	/East/No	rth/Mtho	1	MTD/N	D Te	emp	Cond	Tur	bid		Co	mment	
14	093	3L.089	461	23	1				EF 1		11	250	C					
-				-			A	. G	EAR	SE	TTI	IGS	10-1	1.1				
Site#	MT	D/NO	H/P	Date	In Tir	ne In	Date O	ut	Time O	ut					Com	ment		
14	EF	1	1	2001/0	7/20 09	9:30 2	2001/07	/20	09:49	L	_				-			
					C	. ELI	CTF	ROF	ISH	ER	SPE	CIFI	CA	TION	S			
Site#		MTD/N	10	H/P	End		Sec	Le	ngth	W	idth	Volt	age	Frequ	ency	Pulse	Make	Model
14	E	F.	1	1	0		604		00.0		1.0	50	00	6		6	SR	15C
		-						FI	SHS	5 U M	MAR	Y						
Site#		MTD/N	3.7	H/P	Species	_	ge	Age	To	otal #	_	(Min/M	_	FishAct				
14	E		1	1	co	J		_	-	7	57	_	68	R	1		_	
14	E	F	1	1	СТ	A	1110		0110	1	125	DA	25	R	-			
011-11					1	Malabe	-	02.25	DUA	10. au	ISH	Vch#	-	and the l	Roll #	Frame#	Com	mant
Site#	MIL	D/NO	H/P	Species	Length	Weight	Sex	Mat	Str	Age Smpl#	1400	VCII#	_	enetic /Smpl#	ROII #	Frame#	Con	ment
14	EF	1	1	co	57	-	U	IM	00/	I	I	-	Ou.	1 I I				
14	EF	1	1	CO	58		U	IM				10.0	-					
14	EF	1	1	CO	62		U	IM		1.3	1		1			· · · · · ·		
14	EF	1	- 1	CO	57		U	IM			K							
14	EF	1	1	CO	60		U	IM	100.00	1.000	$0 \equiv 0$							
14	EF	1	1	CT	125		U	М	C	1.33		0.5						
14	EF	1	1	CO	68		U	IM		1.11			l		_			
14	EF	1	1	CO	66		U	IM	0.011		U.T.C	-			-			1 m
				-					COM	ME	NIS						in the second	
		ection										Comm						
SI	TE DE	SCRIP.	TION									of Bab	ine L	ake at se	cond roa	ad crossing	unsuccessful	ly. Further
		-	IENCY		ciency wa		_	_	_		_	_	-	_		-		

Site #	14	
ILP #	40347	ILP Map # 093L.089
Reach #	1.0	
Waters	hed Code:	000-000000-00000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Im Comment: 60 metres upstream of Babine Lake. Image #: 20 Roll #: TC2 Frame #: 20



Direction of Photo: U CD #: 1 Ir Comment: View of 0.7 metres hanging culvert. Image #: 22

Roll #: TC2 Frame #: 22

	Reach # ILP Map # ILP # Site				
Watershed Code: 000-000000-00000-0000-0000-0000-000-00	1.0 093L.099 40351 15				
PROJECT					
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0	Project Code: 1282 00				
WATERSHED					
Gazetted Name:	Local Name: Unnamed Creek				
Watershed Code: 000-000000-00000-0000-0000-000-000-000					
	D #: 46124 Reach #: 1.0 Site #: 15				
Field UTM (Z.E.N): Method: GIS UTM (Z.E.N): 9.677882.6086416 Re	Site Lg: 100 Method: HC Access: V2 f. Name:				
Date: 2001/07/20 Time: 10:15 Agency: C141 C	rew: ML / NF Fish Crd?: Incomplete:				
CHANNEL					
Mtd width width width width width width width width	width width Avg Gadient % Mtd Avg				
Channel Width (m):         MS         0.80         0.90         1.30         0.70         1.00         1.10	0.97 Method I: 2.0 2.0 AL 2.00				
Wetted Width (m):         MS         0.05         0.10         0.30           Pool Depth (m):         MS         0.05         0.05         0.05	0.15 Method II:				
	No Vis.Ch.: Intermittent:				
Wb Depth: .2 .2 .3 Avg: 0.23 Method: MS St	age: L 🖌 M 🗌 H 📄 🛛 Dw: 🛄 Tribs.: 🛄				
COVER Total: N					
Type: SWD LWD B U DP OV IV	CROWN CLOSURE 3 41-70%				
	INSTREAM VEG: N ✔ A M V				
للماليا ( حاليات ) حاليات ( حاليات ) حاليات ) حاليات )					
LWD: F DIST: E					
RIP: S STG: SHR	RIP: S STG: SHR				
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1					
EMS:	Reg #:				
Temp: Method:	Cond.; Method:				
pH: Method:	Turb.: T M L C Method: GE				
Flood Signs: none Method: GE					
MORPHOLOGY					
Bed Material: Dominant: F Subdom: NS	O1 B1 B2 B3 D1 D2 D3				
D95: 10.0 D (cm): 10.00 Morph: RP DISTURBANCE					
Pattem: SI INDICATORS	C1 C2 C3 C4 C5 S1 S2 S3 S4 S5				
Islands: N Coupling: DC					
Confinement: OC					
FSZ: Bars:					
HABITAT QUALIT	Γ¥.				
	omments				
Spawning Habitat None.					
Rearing Habitat Poor: limited discharge and lack of pools result in low quality.					
OverWinter Habitat None. PHOTOS					
Photo Foc Lg Dir	Comments				
R: TC2 F: 23 STD U 50 metres upstream of conflu					
R: TC2 F: 24 STD D 50 metres upstream of conflu	uence with ILP 40347.				
COMMENTS					

#### 1:20K Reconnaissance Stream Inventory 2001

-

 Reach #
 ILP Map #
 ILP #
 Site

 1.0
 093L.099
 40351
 15

Section	Comments
SITE LOCATION	Started at confluence with ILP 40347.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 300 m.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Channel contained little or no water over entire section surveyed; habitat quality would only improve marginally during periods of higher flow due to lack of well functioning structures in the channel to scour pools and provide cover.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	40-50 m band of alder, willow, twinberry, ferns, and horsetail.

Site #	15		
ILP #	40351	ILP Map #	09
Reach #	1.0		
Waters	hed Code	000-00000-0000-0000	0-00

3L.099

0000-0000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 23 Comment: 50 metres upstream of confluence with ILP 40347. Roll #: TC2 Frame #: 23



Direction of Photo: D CD #: 1 Image #: 24 Comment: 50 metres upstream of confluence with ILP 40347.

Roll #: TC2 Frame #: 24

1200

1

10

100

36

	Reach # iLP Map #	ILP # Site			
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	1.0 093L.089	40353 16			
PROJECT					
Project Name: Babine Lake and Fulton Lake Tributaries					
Stream Name (gaz.): BABINE RIVER	Project Code:	1282			
WATERSHED					
	Local Name: Unnamed Creek				
	: 46125 Reach #:	1.0 Site #: 16			
		Access: V2			
GIS UTM (Z.E.N): 9.679525.6085002 Ref. N	lame:	_			
Weinstrict Code: 000-000000-0000-0000-0000-000-000-000-					
		h.: 📃 Intermittent: 📃			
	: L 🗌 M 💽 H 🛄 🛛 D	w: Tribs.:			
10     031.09     033.03     10       Project Name: Babie Lake and Public Lake Tributaries       Project Name: Babie Lake and Public Lake Tributaries       Stream Near (BA): Babie River       Project Odde: 100-00000-0000-000-000-000-000-000-000-					
	INSTREAM VEG: N A	M 🖌 V 🗌			
LWD: F DIST: E					
WATER					
	Req #:				
Watershiel Code:     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     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     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     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     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     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     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0					
1.0     031.08     4033     1       Project Name: Babrie Lake and Fullou Lake Tolutaries       Simes Name (apr.): Bablice Nicke       Simes Name (apr.): Bablice Nicke       Project Name:       Const Name:					
		D2 D3			
Gazetted Name:         Local Name:         Local Name:           Weiterheid Code: 000-00000-0000-0000-0000-000-000-000-0					
Mid         width         w					
ILP Mage: 093L 089       ILP #: 40333       NID Map #: 093L 089       NID #: 4125       Reach #:       1.0       Site #: 16         Pied UTM (Z.E.M):					
Comments: At Granisle Highway road crossing.					
	nents				
Rearing Habitat Good.					
OverWinter Habitat Moderate: a few pools may be suitable.					

### 1:20K Reconnaissance Stream Inventory 2001

ILP #

40353

Site

16

ILP Map #

093L.089

Photo Foc Lg Dir		Dir	Comments	
R: TC2	F: 17	STD	U	250 metres upstream of Babine Lake.
R: TC2	F: 18	STD	D	250 metres upstream of Babine Lake.
R: TC2	F: 19	STD	U	Culvert at Granisle highway road crossing.
				COMMENTS
	Section			Comments
SIT	E LOCATION	200 m upst	ream of Babine L	ake.
				COMMENTS
	Section			Comments
SURVE	EY DESCRIPTION	Surveyed 3 boulder.	00 m starting at 0	Branisle Highway crossing, which is a barrier; no pool is present at out flow and substrate is cobble an
Sector 1	Lethonson I av		and the set	COMMENTS
1	Section			Comments
RIPARI	AN VEGETATION	Left ripariar and cottonw		n 15-20 m to top of gully, dominant species are alder, thimbleberry, cow-parsnip, Devil's club, twinberry



1:20K Reconnaissance Stream Inventory 2001

Reach # ILP Map # ILP # 093L.089 40353 000-000000-00000-0000-0000-000-000-000-000-000-000-000 Watershed Code: 1.0 WATERBODY Gazetted Name: Local: Unnamed Creek Waterbody ID: ILP Map #: 093L.089 ILP #: 40353 Reach #: 1 -Project ID: 1282 Lake/Stream: S Lake From Date: Fish Permit #: 145013K Date: 2001/07/19 To: 2001/07/19 Agency: C141 Crew: ML / NF Resample: 1 SITE / METHOD Site# NID Map NID # UTM:Zone/East/North/Mthd MTD/NO Temp Cond Turbid Comment 093L.089 16 46125 EF 1 9 140 C A. GEAR SETTINGS Date Out Time Out Comment MTD/NO H/P Date In Site# Time In EF 1 1 2001/07/19 18:30 2001/07/19 19:00 16 C. ELECTROFISHER SPECIFICATIONS Model Make Site# MTD/NO Pulse H/P Encl Sec Length Width Voltage Frequency SR 15C 6 0 217 100.0 1.1 700 60 16 EF 1 1 FISH SUMMARY Site# MTD/NO H/P Species Stage Age Total # Lgth (Min/Max) FishAct Comment 16 EF 1 1 CT J 2 53 69 R 16 EF 1 CT J 2 84 92 R 1 16 EF 1 1 CO J 7 102 110 R INDIVIDUAL FISH DATA Genetic Roll # Comment MTD/NO Weight Vch# Frame# Site# H/P Species Length Sex Mat Age Str/Smpl#/Age Str/Smpl# CT 92 16 EF 1 1 U IM 16 EF 1 1 CT 110 U Μ 16 EF 1 1 CO 57 U IM 16 EF 1 1 CO 62 U IM 16 EF 1 1 CO 59 U IM 16 EF 1 1 CT 102 U MT 16 EF 1 1 CT 84 U MT 16 EF 1 1 CO 54 U IM 16 EF 1 1 CO 60 U IM 16 EF 1 1 CO 53 U IM 16 EF 1 1 CO 69 U IM COMMENTS Comments Section PERCENT HABITAT SHOCKED Shocked mostly glide habitat with cobble / boulder cover (80%). Also shocked some past riffle and LWD pool.

Site #	16	
ILP #	40353	
Reach #	1.0	
Mater	had Order	000 0000

ILP Map # 093L.089



Direction of Photo: D CD #: 1 Image #: 18 Comment: 250 metres upstream of Babine Lake.

Roll #: TC2 Frame #: 18



Direction of Photo: U CD #: 1 Image #: 19 Comment: Culvert at Granisle Highway road crossing. Roll #: TC2 Frame #: 19

SKR Consultants Ltd.



	Reach # ILP Map # ILP # Site	
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	3.0 093L.089 40353 17	
PROJECT		
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-0000-0000-0000-0000-000-000-0	Project Code: 1282	
WATERSHED		
Gazetted Name:	Local Name: Unnamed Creek	
Watershed Code: 000-000000-00000-00000-0000-000-000-00		
A CONTRACT OF A CO	#: 46126 Reach #: 3.0 Site #: 17	
	Site Lg: 100 Method: HC Access: V4 Name:	
Date: 2001/07/18 Time: 14:15 Agency: C141 Cre	w; ML / NF Fish Crd?: 🗹 Incomplete:	
CHANNEL		
		Avg
Channel Width (m): MS 1.20 2.00 1.80 1.50 1.90 2.10		0.50
Wetted Width (m):         MS         1.00         1.30         1.10         1.30         1.60           Pool Depth (m):         MS         0.15	1.22 Method II: 0.15	
	No Vis.Ch.: Intermittent:	
Wb Depth: .2 .2 .2 Avg: 0.20 Method: MS Stag	ge: L M V H Dw: Tribs.:	
COVER Total: T		
Type: SWD LWD B U DP OV IV	CROWN CLOSURE	
	4 71-90%	
	INSTREAM VEG: N 🖌 A 🗌 M 🗌 V 🗌	
LWD: N DIST: NS		
LB SHP: S	RB SHP: S	
Texture: F 🖌 G 🗌 C 🗌 B 🔤 R 🗌 A	Texture: F 🖌 G 🗌 C 🗌 B 🗌 R 🗌 A 🗌	
RIP: S	RIP: S	
STG: SHR	STG: SHR	
WATER		
EMS:	Req #:	
Temp: 13 Method: T3	Cond.: 80 Method: S4	
pH: 7.6 Method: FD Flood Signs: none Method: GE	Turb.: T M L C Method: GE	
MORPHOLOGY	04 D4 D0 D0 D4 D0 D0	
Bed Material: Dominant: F Subdom: NS		
D95: 0.01 D (cm): 0.01 Morph: LC DISTURBANCE		
Pattern: SI INDICATORS	C1 C2 C3 C4 C5 S1 S2 S3 S4	S5
Islands: N Coupling: DC		
Confinement: UN		
FSZ: Bars:		
HABITAT QUALIT	Ŷ	
Name Cor	mments	
Spawning Habitat None.		
Rearing Habitat Poor: average water depth is 10 cm with very little cover.		
OverWinter Habitat None. PHOTOS		
Photo Foc Lg Dir	Comments	
R: TC1 F: 15 STD U 3250 metres upstream of Babin		_
R: TC1 F: 16 STD D 3250 metres upstream of Babin		
COMMENTS		

### 1:20K Reconnaissance Stream Inventory 2001

Site

17

ILP Map # ILP # Reach # 093L.089 40353

3.0

Section	Comments
SITE LOCATION	Started 3.2 km upstream of Babine Lake at the bottom end of this reach.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 200 m.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	Channel flows through 5 m tall willow and alder; water very shallow and stagnant in most areas.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Extent of riparian area very difficult to determine due to low gradient, unconfined nature of this reach and extensive presence of ald and willow species.

# FDIS Fish Card

w	aters	shed Co	de:		000-	000000-0	0000-000	00-000	00-000	0-000-0	00-000	-000-000	-000		React	n #	ILP Map # 093L.089		ILP # 40353
							2.2		WA	TER	BOD	Y		-					
F	Proje W		480-			0-00000-00 0-00000-00	NS 1997		00-000	1222.22	000-000		al: U		Creek 9 #: 4	0353	Reach #:	3	
_	Pr	oject ID:	1282	-	_					1.1		Lake/St	ream:	S		Lake F	From Date:	-	-
Fish Permit #: 145013K Date: 2001/07/18 To: 2001/07/18 Agency: C141 Crew: ML / NF									NF	Resam	ple:								
					~			S	ITE	/ M	ETH	OD		1					
Site#	N	D Map	NIC	)#	UTM	Zone/Eas	t/North/N	Ithd	MTD	/NO	Temp	Cond	Turt	rbid Comment					
17	09	3L.089	461	26					EF	1	13	80	C						
				1	1			Α.	GEA	RS	ETT	INGS						-	
Site#	M	TD/NO	H/P	Date	In	Time In	Date	Out	Time	Out				Comment					
17	E	F 1	1	2001/0	7/18	14:15	2001/	07/18	14:	35									
						C.E	LEC	TRO	FIS	HER	SP	ECIFI	CA	TION	IS				
Site#	T	MTD/N	10	H/P	10	Encl	Sec	11	Length		Width	Vol	tage	Free	uency	Pulse	Ma	ke	Mode
17	E	F	1	1		0	614		100.0		1.0	7	00		60	6	S	R	15C
			5	1			-	F	ISH	SUI	MMA	RY							
Site#	T	MTD/N	10	H/P	Sp	becies	Stage	Ag	je	Total #	f Lg	th (Min/M	lax)	FishA	ot		Comme	ent	
17	E	F	1	1	N	FC				0									
		1000			-			1	CO	MME	ENT	S							
	S	ection										Comm	nents						
RCEN	T HA	BITAT	SHOCH			igh 80% L rgrown shi		With f	fine sul	ostrate a	and ave	erage wat	er der	oth of 1	0 cm; 20	% of chan	nel had so	me riffle	over SV

Site #	17	
ILP #	40353	ILP Map # 093L.089
Reach #	3.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 40 Roll #: TC1 Frame #: 15 Comment: 3250 metres upstream of Babine Lake.



Direction of Photo: D CD #: 1 Image #: 41 Roll # Comment: 3250 metres upstream of Babine Lake.

Roll #: TC1 Frame #: 16

Ú.S.

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										F	Reach #	ILP I	Map #	iLP #	Site	
Watershed Code	: 000-000	000-000	00-000	00-000	-0000-0	00-000-0	000-000	000-00	c	5.	0	c	93L.089	40353	18	
					C.		PR	ØJE	ст,							
· · ·					on Lake	Tributar	ies									
					2000-000	າດວາດ	.000-000		າດ-ດດລ-ດ	00	P	roject Co	de:	12	82	
		400 00				,0 0000	000 000		00000							
			Service.				WAT	ERS	HED							
									_	Loc	al Name	: Unnam	ed Creek			
										D#·46	127	Read	h#• f	50	Site #: 18	
		-														
		2.60842	24						Re	-						
Da	te: 2001/	07/19	т	ime: 16:	35	1	Agency:	C141	с	rew: M	L/NF		Fish Crd?	: 🖌	Incomplete:	
					jar.		СН	ANN	EL			a letta				
				width	width	width	width	width	width	width	width	Avg	<b></b>			
														1.0 1.0	0 AL 1.00	
		0.10	0.10	0.10	0.05	0.15	0.10					0.10	L			
Wh Depth:	2	4	4	Δνσ	0.37	N	lethod:	MS	C+-	ada. I		анг	-	—	18         Site #: 18         ess: V4         ncomplete:         Mtd         AL         1.00         nittent:         Tribs.:         A         A         A         Site Site         Site Site Site Site Site Site Site Site	
				-	. 0.57	I <b>v</b>	iotnou.	NIO	01	аус. с		⊻ "∟		•.		
	SWD	- Wi							IV		OWN CL	OSURE				
Weenshed Code: 000-00000-0000-0000-0000-0000-0000-00																
Materialist Code: 000-000000-0000-0000-000-000-000-000-0																
LWD	F		DI	ST: E												
LB SHP	: <b>S</b>									1	RB SHP:	s				
Texture	: F 🗹	G	c 🗌	B 🗌							Texture	F 🔽	GCC	B	□ A □	
RIP	: <b>S</b>															
STG	: SHR										STG	SHR				
	i ser singe Se sone s	a. 11.	44.49°				W	АТЕ	R							
											•					
Weenshed Code: 000-000000000000000000000000000000000																
Meanshed Code:         CODE:         Cold         Cold			lethod: GE													
		n de not ja				Ň	IOR P	HOL	OGY							
Bed Material:	Do	minant:	F		Subdom	: NS				01	B1	B2 B	3 D1 D	)2 D3		
							D	ISTUR	BANCE							
Pattern:	SI									C1	C2	сз с	24 C5 S	S1 S2	S3 S4 S5	
1																
								В	ars:	N	SIDI			MID S	PAN BR	
	541 Trie 544				Salvas) (	HA	BITA	TO	AIT	<b>X</b>						
Name									Storage States	28-00-92 1	ts					
	t	Poor: a	couple	tiny, iso	lated pa	tches.				on in Gill						
			te: lowe	er 40 m l	had habi	tat since	this se	ction ha	d not bee	en direct	tly altere	d by past	harvest.			
	at	NORE.					PH	OTO	S							
Photo	For	La	<u>1 1</u>	<u>מ</u>	ir İr	<u>eren 1</u>	er Presidente Altre State					Commen	ts			
			+			50 n	netres u	ostream	of inlet t	o lake ir						
R: TC2 F: 16		·····														
	SI	·····	Statistics.	a sa atao			netres u	ostream	of inlet t					gagay usada		

### 1:20K Reconnaissance Stream Inventory 2001

Site

Reach # ILP Map # ILP # 0931.089 40353 5.0

Section	Comments	
SITE LOCATION	Started at inlet to lake in reach 4.	
	COMMENTS	
Section	Comments	
SURVEY LOCATION	Surveyed lower 300 m.	
	COMMENTS	
Section	Comments	
SURVEY DESCRIPTION	Lower 40 m of this reach had best habitat; upstream rearing habitat deteriorated to only fair.	
	COMMENTS	
Section	Comments	

### **FDIS Fish Card** 1:20K Reconnaissance Stream Inventory 2001 Reach # ILP Map # ILP # Watershed Code: 000-000000-00000-0000-0000-000-000-000-000-000-000-000 5.0 093L.089 40353 WATERBODY Gazetted Name: Local: Unnamed Creek Waterbody ID: ILP Map #: 093L.089 ILP #: 40353 Reach #: 5 -Project ID: 1282 Lake/Stream: S Lake From Date: Resample: Fish Permit #: 145013K Date: 2001/07/19 To: 2001/07/19 Agency: C141 Crew: ML / NF SITE / METHOD UTM:Zone/East/North/Mthd MTD/NO Temp Cond Turbid Site# NID Map NID # Comment 14 18 093L.089 46127 EF 1 110 С A. GEAR SETTINGS MTD/NO H/P Date In Date Out Time Out Comment Site# Time In 18 2001/07/19 16:35 2001/07/19 17:00 EF 1 1 C. ELECTROFISHER SPECIFICATIONS Length Site# MTD/NO H/P Encl Sec Width Voltage Frequency Pulse Make Model 0.4 SR 15C 18 EF 1 1 0 399 100.0 600 60 6 FISH SUMMARY Total # Lgth (Min/Max) Comment Site# MTD/NO H/P Species Stage FishAct Age EF NFC 18 1 0 1 COMMENTS Section Comments

Efficiency was good but somewhat reduced by dark pine substrate in LC section.

Shocked all available habitat: 35% pool, 35% glide, 10% large channel glide, 20% riffle.

SAMPLING EFFICIENCY

PERCENT HABITAT SHOCKED

Site #	18	
ILP #	40353	ILP Map # 093L.089
Reach #	5.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000-000



Direction of Photo: D CD #: 1 Image #: 16 Comment: 50 metres upstream of inlet to lake in reach 4. Roll #: TC2 Frame #: 16

## 1:20K Reconnaissance Stream Inventory 2001

	Reach # ILP Map # ILP # Site
Watershed Code: 000-000000-00000-0000-0000-0000-000-00	1.0 093L.089 40354 19
PROJECT	
Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0	Project Code: 1282
WATERSHED	
Gazetted Name:	Local Name: Unnamed Creek
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	D #: 46128 Reach #: 1.0 Site #: 19
Field UTM (Z.E.N): Method:	Site Lg: 100 Method: HC Access: V4
	f. Name:
	rew: ML / NF Fish Crd?: Incomplete:
CHANNEL	width width Ava Gadient % Mtd Ava
Mtd         width         w	width         Avg         Gadient %         Mtd         Avg           0.80         Method I:         7.0         6.0         AL         6.50
Wetted Width (m): MS	0.00 Method II:
Pool Depth (m): MS 0.15 0.10 0.10 0.15	0.13 No Vis.Ch.: Intermittent:
Wb Depth: .3 .2 .3 Avg: 0.27 Method: MS Sta	age: L 🖉 M 🗌 H 📄 🛛 Dw: 🗌 Tribs.: 🗌
COVER Total:	
Type: SWD LWD B U DP OV IV	CROWN CLOSURE
	INSTREAM VEG: N A M V V
LWD: F DIST: E	
LB SHP: S	RB SHP: S
RIP: S	RIP: S
STG: SHR	STG: SHR
WATER	and the second second
EMS:	Req #:
Temp: Method: pH: Method:	Cond.: Method:
Flood Signs: none Method: GE	Turb.: T M L C Method:
MORPHOLOGY	
Bed Material: Dominant: G Subdom: F	O1 B1 B2 B3 D1 D2 D3
D95: 3.00 D (cm): 3.00 Morph: RP DISTURBANCE	
Pattern: SI INDICATORS	C1 C2 C3 C4 C5 S1 S2 S3 S4 S5
Islands: N Coupling: DC	
Confinement: OC Bars:	
FSZ:	
HABITAT QUALIT	Ŷ
	omments
Other None. PHOTOS	
Photo Foc Lg Dir	Comments
R: TC1 F: 9 STD U 250 metres upstream of confl	
R:         TC1         F:         10         STD         D         250 metres upstream of confl           COMMENTS	uence with ILP 40353.
	omments

## 1:20K Reconnaissance Stream Inventory 2001

ILP #

Site

19

2

ILP Map # 1.0 093L.089 40354

Reach #

	COMMENTS						
Section	Comments						
SITE LOCATION	200 m upstream of confluence with ILP 40353.						
	COMMENTS						
Section	Comments						
SURVEY LOCATION	Surveyed upper 200 m of reach.						
	COMMENTS						
Section	Comments						
SURVEY DESCRIPTION	Channel was bone dry over entire section surveyed; channel was well scoured and likely had flow in the spring.						
	COMMENTS						
Section	Comments						
RIPARIAN VEGETATION	Left riparian and right riparian 10-25 m consisting of thimbleberry, twinberry, stinging nettle, alder, Devil's club, and the occasional						

Site #	19	
ILP #	40354	
Reach #	1.0	
1A/-t	had Order	000 0000

ILP Map # 093L.089



Direction of Photo: U CD #: 1 Image #: 34 Roll #: TC1 Frame #: 9 Comment: 250 metres upstream of confluence with ILP 40353.



Direction of Photo: D CD #: 1 Image #: 35 Comment: 250 metres upstream of confluence with ILP 40353.

Roll #: TC1 Frame #: 10

### 1:20K Reconnaissance Stream Inventory 2001 **FDIS Site Card** ILP Map # ILP # Site Reach # 2.0 093L.089 40354 20 PROJECT Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Code: 1282 WATERSHED Gazetted Name: Local Name: Unnamed Creek ILP Map#: 093L.089 ILP #: 40354 NID Map #: 093L.089 NID #: 46129 Reach #: 2.0 Site #: 20 Field UTM (Z.E.N): ... Method: HC Method: Site Lg: 100 Access: FT GIS UTM (Z.E.N): 9.677981.6084611 Ref. Name: Fish Crd?: Incomplete: Date: 2001/07/18 Time: 12:52 Agency: C141 Crew: ML / NF CHANNEL Mtd width width width width width Avg Mtd width width width width width Gadient % Avg Channel Width (m) MS 1.40 1.50 1.60 1.70 1.30 1.40 1.48 Method I: 12.0 14.0 AL 13.33 Wetted Width (m) 0.00 Method II: 14.0 AL Pool Depth (m): MS 0.30 0.20 0.10 0.10 0.10 0.16 No Vis.Ch.: Intermittent: Wb Depth: .4 .4 .3 Tribs.: Avg: 0.37 Stage: L V M H Dw: Method: MS COVER Total: NS Type: SWD LWD В U DP OV IV CROWN CLOSURE Amount S S S S т D S 3 41-70% Loc: P/S/O: ~ ~ ~ ٦٢ ~ ٦٢ ~ INSTREAM VEG: N A M V V 2 LWD: F DIST: E LB SHP: S RB SHP: S Texture: F V G V C B R A Texture: F 🔽 G 🔽 C 🗌 B 🗌 R 🗌 A 🗌 RIP: C RIP: C STG: MF STG: MF WATER EMS: Reg #: Temp: Method: Method: Cond .: pH: Method: Method: Flood Signs: see comments Method: GE MORPHOLOGY **B1** D2 D3 01 **B2 B**3 D1 Bed Material: Dominant: G Subdom: F D95: 15.0 D (cm): 13.00 Morph: CP DISTURBANCE INDICATORS Pattern: SI C3 C1 C2 C4 C5 **S1** S2 **S**3 **S4 S5** Islands: N Coupling: DC Confinement: OC BR Bars: NV SIDE DIAG MID SPAN FSZ: HABITAT QUALITY Name Comments Spawning Habitat though some suitable gravels are present, ephemeral nature and high gradient preclude use by spawning fish. **Rearing Habitat** None: dry at time of survey, plus high gradient and likely high water velocity, during freshet. OverWinter Habitat None due to ephemeral nature. PHOTOS Photo Foc Lg Dir Comments R: TC1 F: 11 STD U 575 metres upstream of confluence with ILP 40353. R: TC1 F: 12 STD D 575 metres upstream of confluence with ILP 40353. COMMENTS

## 1:20K Reconnaissance Stream Inventory 2001

ILP #

Site

20

ILP Map # Reach # 2.0 093L.089 40354

Section	Comments
SITE LOCATION	525 m upstream of confluence with ILP 40353.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 200 m of reach and at road crossing, approximately 740 m upstream of confluence with ILP 40353.
	COMMENTS
Section	Comments
SURVEY DESCRIPTION	This stream appears to draw a relatively large amount of water (for a first order) during the spring freshet. The channel is cut deep i some substrate and spreads out to 2 m, in places where there is a gravel and cobble substrate.
C. DERINATION IN	COMMENTS
Section	Comments
FISH PRESENCE	Very unlikely due to seasonal nature and high gradient, though no definite barriers were observed. A well defined channel was not found at the road crossing 740 m upstream of confluence with ILP 40353.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Very thick 12-15 m band of green alder, Devil's club, stinging nettle, red elderberry, and red-osier dogwood; conifers are sub-alpine



Direction of Photo: U CD #: 1 Image #: 36 Roll #: TC1 Frame #: 11 Comment: 575 metres upstream of confluence with ILP 40353.



Direction of Photo: D CD #: 1 Image #: 37 Comment: 575 metres upstream of confluence with ILP 40353.

Roll #: TC1 Frame #: 12

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## 1:20K Reconnaissance Stream Inventory 2001

	Reach #	ILP Map #	ILP# S	ite					
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	1.0	093L.089	40402	21					
PROJECT									
Project Name: Babine Lake and Fulton Lake Tributaries	Desi	at Order	4000						
Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0	Proje	ect Code:	1282						
WATERSHED				Sec. Sec.					
	Local Name: l	Jnnamed Creek							
Watershed Code: 000-000000-00000-0000-0000-0000-000-00									
	46134	Reach #: 1 Method: HC	.0 Site #: 2 Access: FT	1					
GIS UTM (Z.E.N): 9.678207.6082414 Ref. Na	ə Lg: 100 ame:	Metriod. HC	Access. FI						
Date: 2001/07/18 Time: 15:40 Agency: C141 Crew:	ML / NF	Fish Crd?	Incomple	te:					
CHANNEL									
Mtd width width width width width width width width width width width		vg	Gadient % Mtd	Avg					
Channel Width (m):         MS         0.90         1.00         1.30         1.30         1.40           Wetted Width (m):         MS         0.90         0.60         0.90         0.80         0.70         0.90		.15 Method I: .80 Method II:	6.0 4.0 AL 0.0	3.33					
Pool Depth (m): MS 0.20 0.10 0.15 0.15 0.15 0.20	0	.16 No Vis.Ch	.: Intermittent:	• -					
Wb Depth: .4 .5 .5 Avg: 0.47 Method: MS Stage:	L 🗌 M 🖌		r: [] Tribs.: [	j					
COVER Total: A									
	4 71-9 INSTREAM VE	:G: N 🗌 A 🗍							
LWD: F DIST: E									
LB SHP: S	RB SHP: S								
Texture: F 🖌 G 🗌 C 🗌 B 🔤 R 🗌 A		F 🔽 G 🗌 C 🗌							
	RIP: S								
RIP: S		STG: SHR STG: SHR							
STG: SHR		1R							
STG: SHR WATER	STG: Sł	1R							
STG: SHR		łR	Method: S	4					
STG: SHR         WATER           EMS:	STG: SH Req #: Cond.: 90								
STG: SHR WATER EMS: Temp: 9 Method: T3 pH: 7.8 Method: FD Flood Signs: none Method: GE	STG: SH Req #: Cond.: 90	₩ _ L _ C							
STG: SHR WATER EMS: Temp: 9 Method: T3 pH: 7.8 Method: FD Flood Signs: none Method: GE MORPHOLOGY	STG: SH Req #: Cond.: 90 Turb.: T	] M 🗌 L 🗌 C	✓ Method: G						
STG: SHR WATER EMS: Temp: 9 Method: T3 pH: 7.8 Flood Signs: none Method: GE MORPHOLOGY Bed Material: Dominant: G Subdom: F Of: 200 Method: PD	STG: SH Req #: Cond.: 90 Turb.: T	] M 🗌 L 🗌 C	✓ Method: G						
STG: SHR WATER EMS: Temp: 9 Method: T3 pH: 7.8 Method: FD Flood Signs: none Method: GE MORPHOLOGY	STG: SH Req #: Cond.: 90 Turb.: T	M _ L _ C 2 B3 D1 D 1 D   D   C	Method: G     D3     D3	E					
STG: SHR         WATER         EMS:       Method: T3         Temp: 9       Method: T3         pH: 7.8       Method: FD         Flood Signs: none       Method: GE         MOR PHOLOGY       Or         Bed Material:       Dominant: G       Subdom: F         D95:       8.00       D (cm): 7.00       Morph: RP         Pattern: SI       INDICATORS       C:         Islands: N       C:       C:	STG: SH Req #: Cond.: 90 Turb.: T	M _ L _ C 2 B3 D1 D 1 D   D   C	✓ Method: G       2     D3	E					
STG: SHR         WATER         EMS:	STG: SH Req #: Cond.: 90 Turb.: T	M _ L _ C 2 B3 D1 D 1 D   D   C	Method: G     D3     D3	E					
STG: SHR       WATER         EMS:       Temp: 9         Temp: 9       Method: T3         pH: 7.8       Method: FD         Flood Signs: none       Method: GE         MOR PHOLOGY       Morph OLOGY         Bed Material:       Dominant: G       Subdom: F         D95: 8.00       D (cm): 7.00       Morph: RP       DISTURBANCE         Pattern: SI       INDICATORS       C         Islands: N       Coupling: DC       Confinement: FC	STG: SH Req #: Cond.: 90 Turb.: T	M L C 2 B3 D1 D 3 C4 C5 S	Method: G     D3     D3	E					
STG: SHR       WATER         EMS:       Temp: 9       Method: T3         pH: 7.8       Method: FD         Flood Signs: none       Mor PHOLOGY         Bed Material:       Dominant: G       Subdom: F         D95:       8.00       D (cm): 7.00       Morph: RP         Pattern: SI       INDICATORS       C         Islands: N       Coupling: DC       Confinement: FC       Desc.	STG: Sł Req #: Cond.: 90 Turb.: T	M L C 2 B3 D1 D 3 C4 C5 S	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					
STG: SHR       WATER         EMS:       Temp: 9       Method: T3         pH: 7.8       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: G       Subdom: F         D95:       8.00       D (cm): 7.00       Morph: RP         Pattern: SI       INDICATORS       C         Islands: N       Coupling: DC       E         Confinement: FC       Bars:       N[         FSZ:       Bars:       N[	STG: SH Req #: Cond.: 90 Turb.: T 1 B1 B2 1 C2 C3 1 C2 C3 SIDE	M L C 2 B3 D1 D 3 C4 C5 S	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					
STG: SHR       WATER         EMS:       Temp: 9       Method: T3         pH: 7.8       Method: FD         Flood Signs: none       Method: GE         Bed Material:       Dominant: G       Subdom: F         D95:       8.00       D (cm): 7.00       Morph: RP         Pattern: SI       INDICATORS       C         Islands: N       Coupling: DC       Bars:       N         FSZ:       Bars:       N	STG: SH Req #: Cond.: 90 Turb.: T 1 B1 B2 1 C2 C3 1 C2 C3 SIDE nents	M _ L _ C 2 B3 D1 D 3 C4 C5 S 1 DIAG N	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					
STG: SHR         WATER         EMS:       Method:       T3         Temp: 9       Method:       T3         pH: 7.8       Method:       FD         Flood Signs: none       Method:       GE         Bed Material:       Dominant:       G       Subdom:       F         D95:       8.00       D (cm):       7.00       Morph:       RP       DISTURBANCE       O         Pattern: SI       Islands: N       INDICATORS       C:       C:       C:       C:         Coupling: DC       Confinement: FC       Bars:       N       Method:       Same       Method:         Name       Common spawning Habitat       Moderate (several areas with suitable substrate observed).       Common spawning Habitat       Good (great cover from over-vegetation and several nice pools despine).         OverWinter Habitat       Poor (pools not likely deep enough to avoid freezing).       Common spawning habitat	STG: SH Req #: Cond.: 90 Turb.: T 1 B1 B2 1 C2 C3 1 C2 C3 SIDE nents	M _ L _ C 2 B3 D1 D 3 C4 C5 S 1 DIAG N	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					
STG: SHR         WATER         EMS:       Temp: 9       Method: T3         pH: 7.8       Method: FD       Flood Signs: none         Flood Signs: none       Method: GE       MORPHOLOGY         Bed Material:       Dominant: G       Subdom: F       O'         D95:       8.00       D (cm): 7.00       Morph: RP       DISTURBANCE       O'         Pattern: SI       INDICATORS       C       C         Islands: N       Indicators       C       C         Confinement: FC       Bars:       N       Image: N         FSZ:       Bars:       N       Comm         Spawning Habitat       Moderate (several areas with suitable substrate observed).       Comm         Spawning Habitat       Good (great cover from over-vegetation and several nice pools despi       OverWinter Habitat       Poor (pools not likely deep enough to avoid freezing).	STG: SH Req #: Cond.: 90 Turb.: T 1 B1 B2 1 C2 C3 1 C2 C3 SIDE Nents	M       L       C         2       B3       D1       D         2       G       C       S         3       C4       C5       S         3       DIAG       N         4       DIAG       N         5       Of this channel).       C	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					
WATER         WATER         EMS:       Temp: 9       Method: T3         pH: 7.8       Method: FD         Flood Signs: none       More PHOLOGY         Bed Material:       Dominant: G       Subdom: F         D95:       8.00       D (cm): 7.00       Morph: RP         DISTURBANCE       INDICATORS       C         Pattern: SI       INDICATORS       C         Islands: N       E       Bars:       N[         Coupling: DC       Confinement: FC       Bars:       N[         FSZ:       Bars:       N[         Name       Common over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned over-vegation and several nice pools despioned overe-vegation and several nice pools despioned over-vegation and sev	STG: Sł Req #: Cond.: 90 Turb.: T 1 B1 B2 1 C2 C3 1 C2 C3 SIDE Nents vite small nature Cor e with mainster	M       L       C         2       B3       D1       D         2       B3       D1       D         3       C4       C5       S         1       D       I       I         3       C4       C5       S         1       D       I       I         2       DIAG       M         a       of this channel).       I         mments       n.       I	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					
STG: SHR         WATER         EMS:       Temp: 9       Method: T3         pH: 7.8       Method: FD       Flood Signs: none         Flood Signs: none       Method: GE       O         Bed Material:       Dominant: G       Subdom: F       O         D95:       8.00       D (cm): 7.00       Morph: RP       DISTURBANCE       O         Pattern: SI       Islands: N       INDICATORS       C         Coupling: DC       Confinement: FC       Bars:       N         FSZ:       Bars:       N       Image: Signame interpols despite         Name       Comm       Spawning Habitat       Moderate (several areas with suitable substrate observed).         Rearing Habitat       Good (great cover from over-vegetation and several nice pools despite       OverWinter Habitat         Poor (pools not likely deep enough to avoid freezing).       P H O T O S         Photo       Foc Lg       Dir	STG: Sł Req #: Cond.: 90 Turb.: T 1 B1 B2 1 C2 C3 1 C2 C3 SIDE Nents vite small nature Cor e with mainster	M       L       C         2       B3       D1       D         2       B3       D1       D         3       C4       C5       S         1       D       I       I         3       C4       C5       S         1       D       I       I         2       DIAG       M         a       of this channel).       I         mments       n.       I	Method: G     D3     D3     D     S2     S3     S4	E \$ \$5					

## 1:20K Reconnaissance Stream Inventory 2001

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ILP # Reach # ILP Map # Site 093L.089 1.0 40402

Section	Comments				
SITE LOCATION	Started at confluence with mainstem.				
	COMMENTS				
Section	Comments				
SURVEY LOCATION	Surveyed lower 500 m of reach.				
	COMMENTS				
Section	Comments				
RIPARIAN VEGETATION	Left riparian and right riparian 3-12 m consisting of alder, Devil's club, twinberry and occasional spruce.				





1:20K Reconnaissance Stream Inventory 2001

ILP Map #

ILP #

Watershed Code:

000-000000-00000-0000-0000-000-000-000-000-000-000-000 1.0 093L.089 40402

Reach #

-			-										_		_				
1					~ ~				WAT	ERE	BOD	Y							
	Projec W Wateri	S Code	: 480-0 : 000-0	000000-0	0000-000			00-00		00-000	0-000			Innamed I ILP : S		1402 Lake Fi	Reach #:		
1.4	Fish P	ermit #	14	5013K	Da	ate: 200	1/07/18	3	To:	2001/0	07/18	Ag	ency:	C141	Cre	ew: ML/	NF Resa	mple:	
								S	ITE	/ ME	TH	OD							
Site#	NI	D Map	NID	)#	UTM:Zone	/East/No	rth/Mth	d	MTD/N	IO T	emp	Cond	Tur	bid		(	Comment		
21	09	3L.089	461	34							8.5	90	(						
			5				1	4. 0	GEAR	R SE	ETT	NGS	1			-			
Site#		TD/NO	H/P	Date			Date C		Time C		100	_		1.00	Com	ment			
21	EF	1	1	2001/0			2001/07		15:35 FISH	-	SPE	CIFI	CA	TION	S				
Site#	T	MTD/	NO	H/P	End		Sec	Le	ength	Tv	Vidth	Vo	tage	Frequ	ency	Pulse	Make	Model	
21	E		1	1	0	-	221	_	100.0		1.0	_	00	60		6	SR	15C	
	1	-						FI	SH	SUM	MA	RY			-			1.11	
Site#		MTD/	NO	H/P	Species	s Sta	ge	Age	T	otal #	Lgt	h (Min/N	lax)	FishAct	-		Comment		
21	E	F	1	1	CT	A				1	1	04 104 R		R					
21	E	F	1	1	CT	J		_	7.1	3	-	58	74	R	11				
	200		and a				1. A.	VIC	IDUA	AL F	ISH	1. 1. S. 1. S. 1.	No.						
site#	MT	D/NO	H/P	Species	Length	Weight	Sex	Mat	_	Age /Smpla		Vch#		enetic /Smpl#	Roll #	Frame#	Com	ment	
21	EF	1	1	CT	72		U	IM	SC	10	1	1923							
21	EF	1	1	CT	104	1	U	М	SC	11		1				-	Regen scale		
21	EF	1	1	CT	74		U	IM	SC	12	-	-	-				No useable sca	ale	
21	EF	1	1	CT	68		U	IM	SC	13	_	14							
									CON	MME	NTS								
	S	ection										Comn	10020						
SI	TE DE	SCRIP	TION	All	fish captur	ed within	50 m d	of the	conflue	nce wi	th the	mainster	n, how	wever, no	barriers	prevent fi	ish from migratir	ng farther u	
SAM	PLINC	EFFIC	CIENCY	Effi	ciency wa	s good.	-												
ERCE	NT HA	BITAT	SHOCK	KED Sho	ocked 35 9	6 pool, 3	5 % glid	de, an	d 30 %	riffle.									

Site # ILP #	21 40402	ILP Map # 093L.089
Reach #	1.0	
Waters	hed Code:	000-00000-00000-0000-0000-000-000-000-000-000-000-000



 Direction of Photo:
 U
 CD #:
 1
 Image #:
 42
 Roll #:
 TC1
 Frame #:
 17

 Comment:
 60
 metres upstream of confluence with mainstem.
 Roll #:
 TC1
 Frame #:
 17



Direction of Photo: D CD #: 1 Image #: 43 Comment: 60 metres upstream of confluence with mainstem. Roll #: TC1 Frame #: 18

### 1:20K Reconnaissance Stream Inventory 2001 **FDIS Site Card** ILP Map # ILP # Reach # Site 1.0 093L.089 40359 22 PROJECT Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Code: 1282 WATERSHED Gazetted Name: Local Name: Unnamed Creek NID #: 46131 ILP Map#: 093L.089 ILP #: 40359 NID Map #: 093L.089 Reach #: 1.0 Site #: 22 Field UTM (Z.E.N): ... Method: Site La: 100 Method: HC Access: FT GIS UTM (Z.E.N): 9.677969.6082529 Ref. Name: Incomplete: Fish Crd?: V Date: 2001/07/18 Time: 16:43 Agency: C141 Crew: ML /NF CHANNEL width width width width width Gadient % Mtd width width width width width Avg Mtd Avg Channel Width (m) MS 0.90 1.10 1.30 11.00 0,90 1.00 2.70 Method I: 6.0 AL 6.00 0.90 Wetted Width (m) MS 0.70 0.80 0.80 0.90 0.82 Method II: 0.80 Pool Depth (m) MS 0.10 0.10 0.10 0.10 0.10 0.10 0.10 No Vis.Ch.: Intermittent: Wb Depth: .3 Tribs .: .3 .3 Avg: 0.30 Stage: L M V H Dw: Method: MS COVER Total: M SWD LWD В U DP OV IV CROWN CLOSURE Type: Amount S S Ť S N D S 2 21-40% Loc: P/S/O: 1 INSTREAM VEG: N A M V ~ ~ 1 ~ ~ ~ LWD: F DIST: E LB SHP: S **RB SHP: S** Texture: F 🔽 G 🗌 C 🔽 B 🗌 R 🗌 A 🗍 Texture: F V G C V B R A RIP: C RIP: C STG: PS STG: PS WATER EMS: Req #: Temp: 10 Method: T3 Cond.: 100 Method: S4 pH: 7.2 Method: FD Method: GE Flood Signs: none Method: GE MORPHOLOGY B1 D3 01 **B**2 **B**3 D1 D2 Bed Material: Dominant: G Subdom: C D (cm): 10.00 Morph: RP D95: 20.0 DISTURBANCE INDICATORS **S**5 Pattern: SI C1 C2 C3 C4 C5 **S1 S2 S**3 **S**4 Islands; N Coupling: DC Confinement: OC SIDE DIAG MID SPAN BR Bars: NV FSZ: HABITAT QUALITY Name Comments Several pockets of suitable substrate, but limited due to the lack of pools and limited discharge. Spawning Habitat Rearing Habitat Fair: lack of pools and limited discharge OverWinter Habitat Poor: lack of pools and limited discharge PHOTOS Photo Foc Lg Dir Comments R: TC1 F: 19 STD U View of site 95 metres upstream of confluence with ILP 40402. R: TC1 F: 20 STD D View of site 95 metres upstream of confluence with ILP 40402. COMMENTS

## 1:20K Reconnaissance Stream Inventory 2001

	Reach #	ILP Map #	ILP #	Site
00000-0000-0000-0000-000-000-000-000-000-000-000	1.0	093L.089	40359	22
1	Comments			
Started at confluence with ILP 40402 and went upstream for 1	00 m.			
COMMENTS	Section and		N. Sector	
	Comments			
Surveyed lower 200 m.				
COMMENTS				
1	Comments			
		s provided only by al	ders at various p	oints along t
COMMENTS			$= -\frac{1}{2} \left( \frac{1}{2} - \frac{1}{2} \right) \left( \frac{1}{2} - \frac{1}{2} \right)$	
	Comments			
Unlikely fish use due to low discharge, lack of pod cover, and i	independent shadir	ng, but no barriers we	ere noted.	
COMMENTS				
	Comments			
Manufacture developed but encodeting of Mt. Alder utilized frames	d and black appear	ham		
	Started at confluence with ILP 40402 and went upstream for 1 COMMENTS Surveyed lower 200 m. COMMENTS Stream flows through a 12-15 year old cut block and has no le stream; stream is lacking in pools and slides; pools present an COMMENTS Unlikely fish use due to low discharge, lack of pod cover, and COMMENTS	00000-00000-0000-0000-000-000-000-000       1.0         Comments         Started at confluence with ILP 40402 and went upstream for 100 m.         C O M M E N T S         Comments         Surveyed lower 200 m.         Comments         Stream flows through a 12-15 year old cut block and has no leave strip. Shade is stream; stream is lacking in pools and slides; pools present are very shallow.         Comments         Comments         Comments         Comments         Unlikely fish use due to low discharge, lack of pod cover, and independent shadii         C O M M E N T S         Comments         Comments	00000-00000-0000-0000-000-000-000-000       1.0       093L.089         Comments         Started at confluence with ILP 40402 and went upstream for 100 m.         C O M M E N T S         Comments         Surveyed lower 200 m.         Comments         Stream flows through a 12-15 year old cut block and has no leave strip. Shade is provided only by ald stream; stream is lacking in pools and slides; pools present are very shallow.         Comments         Comments         Comments         Comments         Comments         Comments         Unlikely fish use due to low discharge, lack of pod cover, and independent shading, but no barriers we         C O M M E N T S	00000-00000-0000-0000-000-000-000-000       1.0       093L.089       40359         Comments         Started at confluence with ILP 40402 and went upstream for 100 m.         C O M M E N T S         Comments         Surveyed lower 200 m.         Comments         Stream flows through a 12-15 year old cut block and has no leave strip. Shade is provided only by alders at various p stream; stream is lacking in pools and slides; pools present are very shallow.         Comments         Comments         Comments         Comments         Comments         Comments         Unlikely fish use due to low discharge, lack of pod cover, and independent shading, but no barriers were noted.         COM ME N T S         Comments         Unlikely fish use due to low discharge, lack of pod cover, and independent shading, but no barriers were noted.         Comments         Comments         Comments         Comments         Comments         Comments         Comments         Comments         Comments

ii.

# **FDIS Fish Card**

1:20K Reconnaissance Stream Inventory 2001

ILP #

Watershed Code:

ILP Map # Reach #

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Site #	22	
ILP #	40359	ILP Map # 093L.089
Reach #	1.0	
Wate	rshed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 44 Roll #: TC1 Frame #: 19 Comment: View of site 95 metres upstream of confluence with ILP 40402.



 Direction of Photo:
 D
 CD #:
 1
 Image #: 45
 Roll #:
 TC1
 Frame #:
 20

 Comment:
 View of site 95 metres upstream of confluence with ILP 40402.
 Frame #:
 20

### 1:20K Reconnaissance Stream Inventory 2001 **FDIS Site Card** ILP Map # ILP # Reach # Site 1.0 093L.090 23 40356 PROJECT Project Name: Babine Lake and Fulton Lake Tributaries Stream Name (gaz.): BABINE RIVER Project Code: 1282 WATERSHED Gazetted Name: Local Name: Unnamed Creek NID #: 46130 ILP Map#: 093L.090 ILP #: 40356 NID Map #: 093L.090 Reach #: 1.0 Site #: 23 Field UTM (Z.E.N): ... Method: Site La: 100 Method: HC Access: V2 GIS UTM (Z.E.N): 9.680299.6083606 Ref. Name: Date: 2001/07/18 Time: 10:15 Agency: C141 Crew: ML / NF Fish Crd?: ~ Incomplete: CHANNEL Mtd width width width width Avg Avg width width width width width width Gadient % Mtd 1.50 Channel Width (m) 1.30 Method I: 5.75 MS 1.70 1.60 1.50 1.80 1.57 6.0 5.5 AL Wetted Width (m): MS 1.20 1.30 1.50 1.40 1.00 1.30 1.28 Method II: Pool Depth (m): MS 0.30 0.15 0.20 0.25 0.15 0.20 0.21 No Vis.Ch.: Intermittent: Wb Depth: .4 .5 Avg: 0.43 Stage: L M W H .4 Method: MS Dw: Tribs.: COVER Total: A CROWN CLOSURE Type: SWD LWD В U DP OV IV N D Ν 2 21-40% Amount: S S Loc: P/S/O: ~ 1 INSTREAM VEG: N A M V I ~ ~ DIST: E LWD: F LB SHP: S **RB SHP: S** RIP: M RIP: M STG: MF STG: MF WATER EMS: Rea #: Temp: 9 Method: T3 Cond.: 110 Method: S4 pH: 7.8 Method: FD Method: GE Flood Signs: none Method: GE MORPHOLOGY **B1 B**2 **B**3 D1 D2 D3 01 Dominant: G Bed Material: Subdom: F D95: 10.0 D (cm): 5.00 Morph: RP DISTURBANCE INDICATORS Pattern: SI C1 C3 C4 C5 C2 S1 **S2 S**3 S4 **S**5 Islands: N Coupling: DC Confinement: OC Bars: SIDE DIAG MID SPAN BR NV FSZ: HABITAT QUALITY Name Comments Spawning Habitat Excellent (suitable gravels-abundant). Excellent rearing habitat (abundant cover from over-vegetation, pools and woody debris) **Rearing Habitat OverWinter Habitat** Fair (very limited number of pools with adequate depth) PHOTOS Photo Foc Lg Dir Comments R: TC1 F: STD U 250 metres upstream of Babine Lake. 7 R: TC1 F: 8 STD D 250 metres upstream of Babine Lake. COMMENTS

## 1:20K Reconnaissance Stream Inventory 2001

Site

ILP Map # ILP # Reach # 093L.090 40356

00000-0000-0000-0000-000-000-000-000-000-000-000	1.0	093L.090	40356	23
	Comments			
180 m upstream of Babine Lake.				
COMMENTS				
	Comments			
Most fish were captured at Highway 16 but CO and CT were al	so captured abov	e in much lower dens	ities.	
COMMENTS				
	Comments			
Left riparian 4-10 m and right riparian 4-10 m consisting of alde	r, Devil's club, tw	vinberry, cow-parsnip,	ferns, cottonwoo	d.
COMMENTS				
	Comments			
Approximately 5 m upstream of mainstem ILP51919.				
	180 m upstream of Babine Lake.         C O M M E N T S         Most fish were captured at Highway 16 but CO and CT were all         C O M M E N T S         Left riparian 4-10 m and right riparian 4-10 m consisting of alde         C O M M E N T S	Comments          180 m upstream of Babine Lake.         C O M M E N T S         Comments         Most fish were captured at Highway 16 but CO and CT were also captured above         C O M M E N T S         Comments         Left riparian 4-10 m and right riparian 4-10 m consisting of alder, Devil's club, two         C O M M E N T S         Comments         Left riparian 4-10 m and right riparian 4-10 m consisting of alder, Devil's club, two         C O M M E N T S         Comments         Comments         Comments         Comments         Comments	Comments         180 m upstream of Babine Lake.         C O M M E N T S         Comments         Most fish were captured at Highway 16 but CO and CT were also captured above in much lower dens         C O M M E N T S         Comments         Left riparian 4-10 m and right riparian 4-10 m consisting of alder, Devil's club, twinberry, cow-parsnip,         C O M M E N T S         Comments         Left riparian 4-10 m and right riparian 4-10 m consisting of alder, Devil's club, twinberry, cow-parsnip,         C O M M E N T S         C O M M E N T S         C O M M E N T S         C O M M E N T S         C O M M E N T S	Comments         180 m upstream of Babine Lake.         C O M M E N T S         Comments         Most fish were captured at Highway 16 but CO and CT were also captured above in much lower densities.         C O M M E N T S         Comments         Left riparian 4-10 m and right riparian 4-10 m consisting of alder, Devil's club, twinberry, cow-parsnip, ferns, cottonwoo         C O M M E N T S         C O M M E N T S         Comments         Left riparian 4-10 m and right riparian 4-10 m consisting of alder, Devil's club, twinberry, cow-parsnip, ferns, cottonwoo         C O M M E N T S         C O M M E N T S         C O M M E N T S         C O M M E N T S

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F	ish Pe	rmit #:	148	5013K	D	ate:	2001/07/	17	То	: 2001	/07/17	A	gency:	C141	Cre	ew:ML/	NF Re	sample:
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## **FDIS Fish Card**

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Site # ILP #	23 40356	ILP Map # 093L.090
Reach #	1.0	
Waters	hed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 32 Comment: 250 metres upstream of Babine Lake.

Roll #: TC1

Frame #: 7



Direction of Photo: D CD #: 1 Image #: 33 Comment: 250 metres upstream of Babine Lake.

Roll #: TC1 Frame #: 8

SKR Consultants Ltd.

## 1:20K Reconnaissance Stream Inventory 2001

		Reach # ILP Map #	ILP # Site
Watershed Code: 000-000000-00000-00000-0000-	000-000-000-000-000	1.0 093L.090	40363 24
	PROJECT		
Project Name: Babine Lake and Fulton Lak Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-00000-0		Project Code:	1282
	WATERSHED		
Gazetted Name:		Local Name: Unnamed Creek	
Watershed Code: 000-00000-00000-00000-0000-0000- ILP Map#: 093L.090 ILP #: 40363 Field UTM (Z.E.N): Method:	NID Map #: 093L.090 NID #	#: 46132 Reach #: te Lg: 100 Method: HC	1.0 Site #: 24 Access: V2
GIS UTM (Z.E.N): 9.680620,6082011	Ref. N	Name:	_
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COVER Total: T			
Type: SWD LWD B U	DP OV IV	CROWN CLOSURE	
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	WATER		
EMS:		Req #:	
Temp: 8 pH: 7.1	Method: T3 Method: FD	Cond.: 100	Method: S4
Flood Signs: none	Method: GE		Method: GE
	MORPHOLOGY		
Bed Material: Dominant: G Subdo		O1 B1 B2 B3 D1	D2 D3
	h: RP DISTURBANCE		
Pattern: SI	INFORTODO	C1 C2 C3 C4 C5	S1 S2 S3 S4 S5
Islands: N	[[		
Coupling: PC			
Confinement: OC FSZ:	Bars: N		
	FEATURES		
	Method Photo	AirPhoto	UTM (Z/E/N) Method
093L.090 46142 CV .8 NS 0 Comments: culvert at Granisle Highway crossing.	NS R: TC1 F: 3 L:	#: 9.	680472.6082010 GIS
	HABITAT QUALITY		
Name		ments	
Spawning Habitat Poor: plenty of suitable grave			
Rearing Habitat Poor: very low discharge and	limited pools available.		
OverWinter Habitat None: insufficient discharge.			

**FDIS Site Card** 

## 1:20K Reconnaissance Stream Inventory 2001

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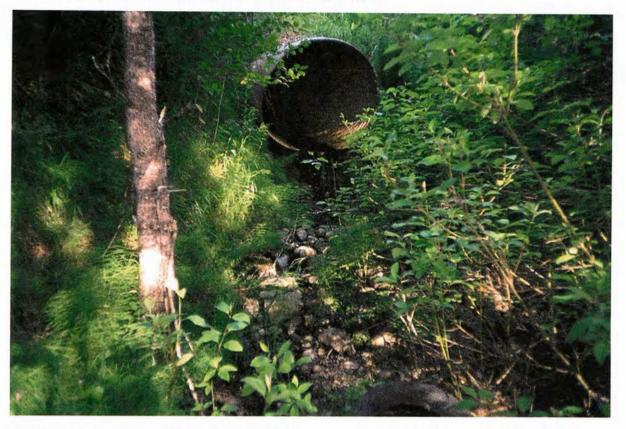
								Reach #	ILP Map #	ILP #	Site		
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							PHOTOS				2.2 m 1/2		
-	Pho	oto		Fo	oc Lg	Dir		C	omments				
R: T	C1	F:	1		STD	U	View in Red Bluff Park app	roximately 40 metre	es upstream of Babin	e Lake.			
R: T	C1	F:	2		STD	D	View in Red Bluff Park app	roximately 40 metre	es upstream of Babin	e Lake.			
R: T	C1	F:	3		STD	U	View at sample site approx	imately 40 metres of	lownstream of Grani	sle Highway (sho	ows culvert).		
R: T	TC1 F: 4 STD D					D	View at sample site approx	imately 40 metres of	lownstream of Grani	sle Highway.			
	1					Constant P	COMMENTS						
		Sec	tion	-			Comments						
	SIT	ELC	CATION		200 m upstre	eam of inlet to Bal	bine Lake.						
-	27	100					COMMENTS				and a second second		
		Sec	tion		1			Comments					
S	URV	/EY I	OCATIO	N	Surveyed low	ver 350 m of reac	h.						
	1	11		a C	1000		COMMENTS						
		Sec	tion		1		Comments						
SU	RVE	YDE	SCRIPT	ION			ed on TRIM downstream of Gra he Lake at the park beach; char				road in Red		
				1.00	the States		COMMENTS						
Section Comments													
SU	RVE	Y DE	SCRIPT	ION	No EF plus a	lmost no shockat	ble habitat at time of sampling.						
			100 million (100 m	1			COMMENTS						
		Sec	tion		1			Comments					
RIP	ARIA	AN V	EGETAT	ION	Left riparian	and right riparian	3-8 m consisting of twinberry, a	der, mature cottony	wood, and horsetail.	1			

Site #	24	
ILP #	40363	ILP Map # 093L.090
Reach #	1.0	
Waters	shed Code:	000-00000-00000-0000-0000-000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 26 Roll #: TC1 Frame #: 1 Comment: View in Red Bluff Park approximately 40 metres upstream of Babine Lake.



Direction of Photo: D CD #: 1 Image #: 27 Roll #: TC1 Frame #: 2 Comment: View in Red Bluff Park approximately 40 metres upstream of Babine Lake. 

Direction of Photo: U CD #: 1 Image #: 28 Roll #: TC1 Frame # Comment: View at sample site approximately 40 metres downstream of Granisle Highway (shows culvert). Direction of Photo: Frame #: 3



Direction of Photo: D CD #: 1 Image #: 29 Roll #: TC1 Comment: View at sample site, approximately 40 metres downstream of Granisle Highway. Frame #:

4

## 1:20K Reconnaissance Stream Inventory 2001

	Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	2.0	093L.090	40363	25
PROJECT				
Project Name: Babine Lake and Fulton Lake Tributaries				
Stream Name (gaz.): BABINE RIVER		ect Code:	1282	
Project Watershed Code: 480-000000-00000-0000-0000-000-000-000-0	000			
WATERSHED				
Gazetted Name:	Local Name:	Unnamed Creek		
Watershed Code: 000-000000-00000-0000-000-000-000-000-	NID #: 46133	Reach #: 2	2.0 Sit	e #: 25
Field UTM (Z.E.N): Method:	Site Lg: 100	Method: HC	Access	FT
	Ref. Name:			
Date: 2001/07/18 Time: 09:31 Agency: C141 0	Crew: ML / NF	Fish Crd?		omplete:
CHANNEL				
Mtd width width width width width width width width	width width	Avg		Mtd Avg
Channel Width (m):         MS         0.30         0.60         0.40         0.50         0.70         1.00         1.10		0.66 Method I:	5.0	AL 5.00
Wetted Width (m):         MS         0.30         0.30         0.40         0.50         0.60         0.60           Pool Depth (m):         MS         0.10         0.10         0.20         0.10         0.10         0.00		0.43 Method II:		_
		No Vis.Ch		ent: 🗹 os.: 🗌
Wb Depth:         .3         .4         Avg:         0.33         Method:         MS         Si           COVER         Total:         A	Stage: L 🔽 M		v; 🛄 🦷 (hi	ля.: Ц
Type: SWD LWD B U DP OV IV		SURE		
Amount: S S N D N D S	3 41-7			
	INSTREAM VI	EG: N 🗌 A 🔽	MVV	
LWD: F DIST: E				
LB SHP: U	RB SHP: U			
Texture: F 🖌 G 🗌 C 🖌 B 🔤 R 🗌 A 🗌	Texture:	F 🖌 G 🗌 C 🔽		A 🔲
RIP: M	RIP: M			
STG: MF	STG: N	1F		
WATER				
EMS: Temp: 8 Method: T3	Req #: Cond.: 100		Metho	od: S4
pH: 7.1 Method: FD	CALCER CONTRACTOR			od: GE
Flood Signs: none Method: GE	Turb T	] M 🗌 L 🗌 C	V Wethe	I. GE
MORPHOLOGY	1			S
Bed Material: Dominant; F Subdom: G	01 B1 B	2 B3 D1 D	D2 D3	
D95: 6.00 D (cm): 4.00 Morph: RP DISTURBANCE				
Pattern: SI INDICATORS	C1 C2 C	3 C4 C5 S	S1 S2 S3	S4 S5
Islands: N Coupling: DC				
Confinement: FC				
FSZ: Bars:	NV SIDE	DIAG	MID SPAN	BR
HABITAT QUALI	TY			
Name	Comments			
Spawning Habitat No appropriate substrate and lack of discharge.				
Rearing Habitat         Extremely limited due to lack of discharge and stagnating pools           OverWinter Habitat         None due to lack of discharge and stagnating pools.	5.			
PHOTOS				
Photo Foc Lg Dir	Co	omments		
R: TC1 F: 5 STD U View at site location (approx				
R: TC1 F: 6 STD D View at site location (approx COMMENTS	ximately 1220 metre	s upstream from Ba	bine Lake).	
COMMENTS				1.2.2.2.2.

## 1:20K Reconnaissance Stream Inventory 2001

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		Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-0	00000-00000-0000-0000-000-000-000-000-000-000-000	2.0	093L.090	40363	25
Section		Comments			
SITE LOCATION	Approximately 1220 m upstream of confluence with Babine La	ke.			
	COMMENTS				1
Section		Comments			
SURVEY LOCATION	Surveyed lower 200 m of reach.				
	COMMENTS				
Section		Comments			and an and a second
SURVEY DESCRIPTION	Stream is flowing through a small gully and clean cobble subs times of the year (freshet)	trate at the base o	f some steps indicate	es that flow is hig	her at differen
	COMMENTS				
Section		Comments			
BARRIER	Low flows and a hanging culvert downstream in reach 1 at the	Granisle highway	crossing preclude fis	sh use.	
	COMMENTS				
Section		Comments			
RIPARIAN VEGETATION	Slides of gully (8-15 m) both sides consisting of thimbleberry, g club. Tree speaks are black cottonwood and interior spruce.	green alder, twinbe	rry, black goosebern	y, oak fern, and	some Devil's
	COMMENTS				
Section		Comments			
WATER	No shocking due to lack of available habitat.				

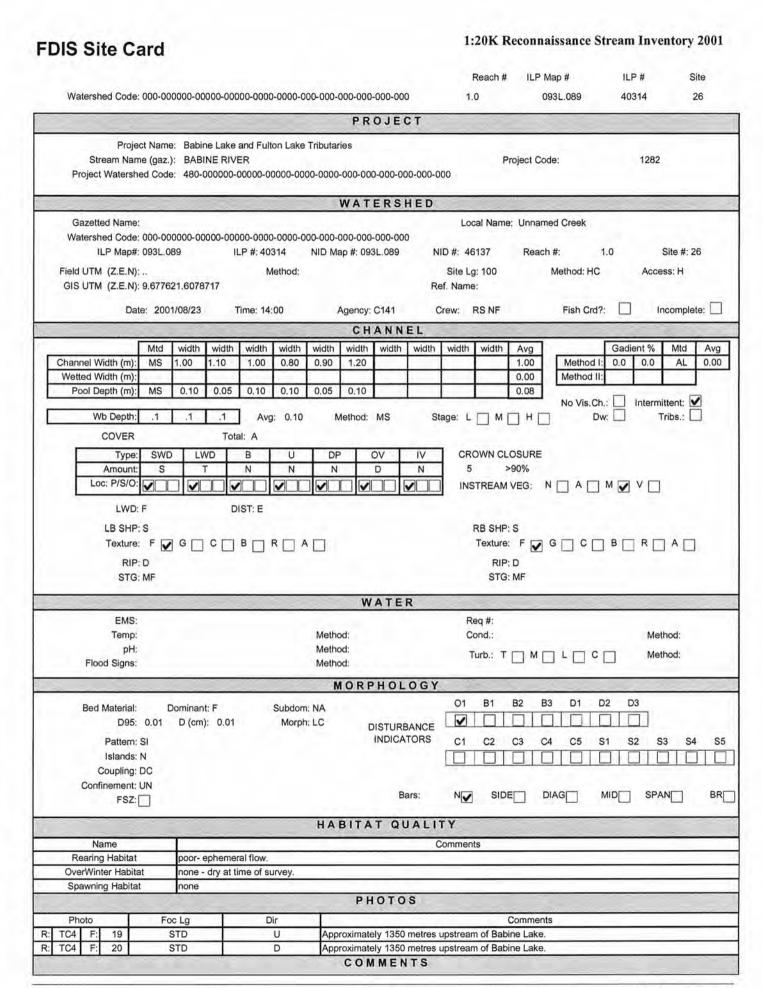
Site #	25 40363	ILP Map # 093L.090
Reach #	2.0	12F Map # 0952.090
Waters	shed Code:	000-00000-00000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 30 Roll #: TC1 Frame #: 5 Comment: View at site location (approximately 1220 metres upstream from Babine Lake).



Direction of Photo: D CD #: 1 Image #: 31 Roll #: TC1 Frame #: 6 Comment: View at site location (approximately 1220 metres upstream from Babine Lake).



## 1:20K Reconnaissance Stream Inventory 2001

ILP #

40314

Site

26

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Wa

ILP Map # Reach # 1.0 093L.089

atershed	Code:	000-000000	-00000-000	000-000	-0000-000-0	000-000-000-0	00-000

Section	Comments				
SITE LOCATION	Approximately 1350 m upstream of Babine Lake.				
	COMMENTS				
Section	Comments				
SURVEY DESCRIPTION	Majority of discharge from reach 2 actually flows East and not South.				
	COMMENTS				
Section	Comments				
SURVEY DESCRIPTION	The upper 600 m of this reach is only a secondary flood channel of ILP 40314 which is mapped as the mainstem. Reach 3 actually flows into this reach approximately 600 m downstream of the mapped location.				
	COMMENTS				
Section	Comments				
RIPARIAN VEGETATION	Wide riparian band on both sides consisting of willow, alder, twinberry, grasses, and stinging nettle.				
	COMMENTS				
Section	Comments				
FISH PRESENCE Resampling is required to confirm fish absence from this poorly defined channel.					



Direction of Photo: U CD #: 1 Image #: 75 Roll #: TC4 Frame #: 19 Comment: Approximately 1350 metres upstream of Babine Lake.



Direction of Photo: D CD #: 1 Image #: 76 Comment: Approximately 1350 metres upstream of Babine Lake. Roll #: TC4 Frame #: 20

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## 1:20K Reconnaissance Stream Inventory 2001

		Reach #	ILP Map #	ILP # Site				
Watershed Code: 000-000000-00000-00000-0000-	0000-000-000-000-000-000-000	00 3.0	093L.089	40314 27				
	PROJE	CT						
Project Name: Babine Lake and Fulto Stream Name (gaz.): BABINE RIVER Project Watershed Code: 480-000000-00000-000		oject Code:	1282					
	WATERS	HED						
Gazetted Name:	Gazetted Name: Local Name: Unnamed Creek							
Watershed Code: 000-000000-00000-00000-0000-0000-000-0								
	thod:	Site Lg: 100	Method: HC	Access: H				
GIS UTM (Z.E.N): 9.677645.6078906		Ref. Name:						
Date: 2001/08/23 Time: 15:3	0 Agency: C141	Crew: NF RS	Fish Crd?:	Incomplete:				
	GHANN	EL						
	width width width width	width width width	Avg	Gadient % Mtd Avg 0.0 AL 0.00				
Channel Width (m):         MS         1.20         1.30         2.00           Wetted Width (m):         MS         1.10         1.10         2.00	2.10         1.20         3.30           2.10         1.10         2.90		1.85         Method I:           1.72         Method II:	0.0 AL 0.00				
Pool Depth (m):			0.00 No Vis.Ch.					
Wb Depth: .3 .4 .4 Avg:	0.37 Method: MS	Stage: L 🖌 M						
COVER Total: M								
Type: SWD LWD B	U DP OV	IV CROWN CLO	SURE 20%					
Amount: S S N Loc: P/S/O:	S N D		/EG: N 🗌 A 🖌	M 🗔 V 🔽				
LWD: N DIST: NA	╷╝╚┙╧┙╻╘╌╢╚┙╧┙╻└╼╢╚┚└╌┦╏							
LB SHP: S		RB SHP:	S					
Texture: F 🖌 G 🗌 C 🗌 B 🔤 R	□ A □		F 🖌 G 🗌 C 🗌					
RIP: W		RIP: W						
STG: NA		STG:	NA					
	WATE							
EMS: Temp: 12	Method: T3	Req #: Cond.: 140		Method: S4				
pH: 7.4	Method: FD	Turb.: T	- мг сг					
Flood Signs: wetland fluctuates		Flood Signs: wetland fluctuates Method: GE						
	MORPHOLOGY							
				o D0				
	Subdom: NA	O1 B1	B2 B3 D1 D	2 D3				
D95: 0.01 D (cm): 0.01		O1 B1						
Pattern: ME Islands: O	bubdom: NA Morph: LC DISTUR	O1 B1	B2 B3 D1 D					
Pattern: ME Islands: O Coupling: DC	bubdom: NA Morph: LC DISTUR	O1 B1	C3 C4 C5 S					
Pattern: ME Islands: O	ubdom: NA Morph: LC DISTUR INDIC/	O1 B1	C3 C4 C5 S					
Pattern: ME Islands: O Coupling: DC Confinement: UN	ubdom: NA Morph: LC DISTUR INDIC/	O1 B1 BANCE C1 C2 C1 C2 Bars: N♥ SIDE	C3 C4 C5 S	1 S2 S3 S4 S5				
Pattern: ME Islands: O Coupling: DC Confinement: UN	iubdom: NA Morph: LC DISTUR INDIC/	O1 B1 BANCE C1 C2 C1 C2 Bars: N♥ SIDE	C3 C4 C5 S	1 S2 S3 S4 S5				
Pattem: ME Islands: O Coupling: DC Confinement: UN FSZ:	iubdom: NA Morph: LC DISTUR INDIC/ HABITAT Q bstrates.	O1 B1	C3 C4 C5 S	1 S2 S3 S4 S5				
Pattem: ME Islands: O Coupling: DC Confinement: UN FSZ:	iubdom: NA Morph: LC INDIC/ HABITAT Q bstrates. and no pools. aids make access difficult for f	O1 B1 BANCE ATORS C1 C2 C1 C2	C3 C4 C5 S	1       S2       S3       S4       S5         1       D       D       D       D         11D       SPAN       BR       BR         12       S4       S5       S5         13       SPAN       BR       S5         14       SPAN       BR       S5         15       S4       S5       S5         16       S4       S5       S6         17       S4       S7       S6         18       S5       S6       S6         19       S4       S7       S7         10       S7       S7       S7         11       S7       S7       S7         11       S7       S7       S7         12       S7       S7       S7         13       S7       S7       S7     <				
Pattem: ME Islands: O Coupling: DC Confinement: UN FSZ:	iubdom: NA Morph: LC DISTUR INDIC/ HABITAT Q bstrates. and no pools.	O1 B1 BANCE ATORS C1 C2 C1 C	C3 C4 C5 S	1       S2       S3       S4       S5         1       D       D       D       D         11D       SPAN       BR       BR         12       S4       S5       S5         13       SPAN       BR       S5         14       SPAN       BR       S5         15       S4       S5       S5         16       S4       S5       S6         17       S4       S7       S6         18       S5       S6       S6         19       S4       S7       S7         10       S7       S7       S7         11       S7       S7       S7         11       S7       S7       S7         12       S7       S7       S7         13       S7       S7       S7     <				
Pattem: ME Islands: O Coupling: DC Confinement: UN FSZ:	bubdom: NA Morph: LC INDIC/ HABITAT Q bstrates. and no pools. aids make access difficult for f a and oxygen are likely at the or PHOT C	O1 B1 BANCE ATORS C1 C2 C1	C3 C4 C5 S	1       S2       S3       S4       S5         1       D       D       D       D         11D       SPAN       BR       BR         12       S4       S5       S5         13       SPAN       BR       S5         14       SPAN       BR       S5         15       S4       S5       S5         16       S4       S5       S6         17       S4       S7       S6         18       S5       S6       S6         19       S4       S7       S7         10       S7       S7       S7         11       S7       S7       S7         11       S7       S7       S7         12       S7       S7       S7         13       S7       S7       S7     <				
Pattem: ME Islands: O Coupling: DC Confinement: UN FSZ:	A bottom: NA Morph: LC INDIC/ INDIC/ B B B B B B B B B B B B B B B B B B B	O1 B1 BANCE ATORS C1 C2 C1	C3 C4 C5 S C4 C5 S C4 C5 S C4 C5 S C4 C5 S C5 C4 C5 S C5 C5 C5 C5 C5 C5 C5 C5 C5 C5 C5 C5 C5 C	1       S2       S3       S4       S5         1       D       D       D       D         11D       SPAN       BR       BR         d with algae and aquatic the year.       SPAN       SPAN				

### 1:20K Reconnaissance Stream Inventory 2001

 Reach #
 ILP Map #
 ILP #
 Site

 3.0
 093L.089
 40314
 27

		WILDLIFE					
Group	-	Observations					
MAM	beavers	vers observed in wetland/beaver lodges.					
AMP	abundan	t spotted frogs and westen toads					
		COMMENTS					
Section		Comments					
SITE LOCATION		Started at wetland reach 2 and went upstream.					
		COMMENTS					
Section	n	Comments					
SURVEY LOCATION		Surveyed lower 200 m of reach on foot and entire reach from helicopter.					
		COMMENTS					
Section	n	Comments					
SURVEY DESC	RIPTION	stream is actually a drainage complex of many poorly defined channels with minimal flow through a beaver influenced r/willow lowland (basically it is now a swamp). Channel characteristics taken here for best defined channel located (see photos).					
	1	COMMENTS					
Section	ı	Comments					
SURVEY DESC	RIPTION	e upper portion of this reach was observed to have a well defined channel from the helicopter, but this channel has been redirected th approximately 550 m upstream of the wetland in reach 2.					
		COMMENTS					
Section	ı	Comments					
FISH PRESE	ENCE	None suspected due to stream diversion upstream and lack of flow, but spring sampling is recommended to determine if flushing flows enter wetland at high flow levels.					

## **FDIS Fish Card**

1:20K Reconnaissance Stream Inventory 2001

each #	ILP Map #	ILP #

Watershed Code:

SAMPLING EFFICIENCY

R

3.0 093L.089 40314

000-000000-00000-0000-0000-000-000-000-000-000-000 WATERBODY Gazetted Name: Local: Unnamed Creek Waterbody ID: ILP Map #: 093L.089 ILP #: 40314 Reach #: 3 -Project ID: 1282 Lake/Stream: S Lake From Date: Resample: Fish Permit #: \_145013K Date: 2001/08/23 To: 2001/08/23 Agency: C141 Crew: NF/RS SITE / METHOD Site# NID Map NID # UTM:Zone/East/North/Mthd MTD/NO Temp Cond Turbid Comment 27 093L.089 46138 EF 1 12 140 С A. GEAR SETTINGS MTD/NO H/P Date In Date Out Time Out Site# Time In Comment EF 2001/08/23 2001/08/23 27 1 1 15:18 15:27 C. ELECTROFISHER SPECIFICATIONS Site# MTD/NO H/P Encl Sec Length Width Voltage Frequency Pulse Make Model 27 EF 1 0 447 100.0 0.5 500 60 6 SR 12B 1 FISH SUMMARY Site# MTD/NO H/P Species Stage Age Total # Lgth (Min/Max) FishAct Comment 27 NFC EF 1 0 COMMENTS Section Comments

Efficiency was moderate due to many unfinished beaver dams and lack of access to some channels.

PERCENT HABITAT SHOCKED Shocked 100% large channel, off channel habitat (no real main channel exists).

Site # ILP #	27 40314	ILP Map # 093L.089
Reach #	3.0	
Waters	hed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo:UCD #:1Image #:81Roll #:TC5Frame #:3Comment:View of the most defined braid, approximately 70 metres upstream from wetland.Frame #:3



Direction of Photo: D CD #: 1 Image #: 82 Roll #: TC5 F Comment: View of the most defined braid, approximately 70 metres upstream from wetland.

Frame #: 4

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### 1:20K Reconnaissance Stream Inventory 2001

						Reach #	ILP Map #	ILP #	Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0						8.0	093L.089	40314	28
	en an Aragana An Aragana			PROJE	СТ				
		and Fulton Lake T	<b>Fributaries</b>			D	-i Codo	1000	
Stream Name (gaz.): Project Watershed Code:			0-0000-00	0-000-000-	00-000-0		oject Code:	1282	
	an an an an an an an an an an an an an a		6-20-2 IAT	ATCOC	Urn	APR AN AN AN AN AN AN AN AN AN AN AN AN AN	en en en en en en en en en en en en en e		
Gazetted Name:	Gazetted Name: Local Name: Unnamed Creek								
Watershed Code: 000-000									
ILP Map#: 093L.08 Field UTM (Z.E.N):						D #: 46139 Site Lg: 100	Reach #: Method: HC		ite #: 28 s: FT
GIS UTM (Z.E.N): 9.67600	7.6080939	Method.			Re	off. Name:	Motiod. 110	10000	5.1 1
Date: 2001	/07/19 T	ime: 07:19	Age	ncy: C141	С	rew: ML/NF	Fish Crd?	?: 🗌 Inc	complete:
			an araa	GHANI	EL		ates, in an inst		
Mtd	width width	width width		idth width	n width	width width	Avg	Gadient %	Mtd Avg
Channel Width (m): GE Wetted Width (m): GE	2.00 4.00 2.00 4.00	1.00 3.00 1.00 3.00		.50 .50			2.33 Method I 2.33 Method II	++	AL 0.00
Pool Depth (m): MS							0.00 No Vis.Ch	n.: Intermitt	tent:
Wb Depth: 1.5	2.0 1.8	Avg: 1.77	Meth	nod: MS	St	age: L 🗌 M 👩		_	ibs.:
COVER	Tota		•••••	•					
Type: SWD Amount: N	LWD	B U N N	DP D	OV T	IV T	CROWN CLO	DSURE 0%		
Loc: P/S/O:						INSTREAM	VEG: N 🗌 A 🛄	M 🗌 V 🗹	
LWD: NS	DI	ST: NS				-			
LB SHP: S						RB SHP:		_	
Texture: F	G□C□						F ☑ G □ C □	] B [ R [	A 🗌
RIP: W STG: NA						RIP: STG:			
	and the second		Ge - 1 - 1	WATI	R	(Second States)			
EMS:			<u></u>			Req #:	<u>, 19 19 19 19 19 19 19 19 19 19 19 19 19 </u>		
Temp: 15 pH: 7.2			Method: Method:			Cond.: 120			od: S4
Flood Signs: none			Method:			Turb.: T		Meth	od: GE
			MO	RPHO	LOGY				
	ominant: F	Subdom:				01 B1	B2 B3 D1 I	D2 D3	
D95: 10.0	D (cm): 10.00	Morph:	LC		RBANCE				04
Pattern: SI Islands: N				INDIC	ATURS			S1 S2 S3	S4 S5
Coupling: DC									
Confinement: OC FSZ:					Bars:		DIAG		
			HARI	TAT C	1) A C F			ROBECCE	
Name					20月1日 19月2日	comments			
Spawning Habitat	None.								
Rearing Habitat OverWinter Habitat	Good: deep be Good: deep be	-							
				PHOT	05		en Cr		
	Lg	Dir U	400	tros unatro	am of loke	-	Comments		
	COMMENTS								

## **FDIS Site Card**

#### 1:20K Reconnaissance Stream Inventory 2001

ILP #

Site 28 8

8.0 093L.089 40314

ILP Map #

Reach #

Section	Comments
SITE LOCATION	Started 380 m upstream of lake in reach 6.
SITE LOCATION	Started 380 m upstream of lake in reach 6.
SITE LOCATION	Started 380 m upstream of lake in reach 6.
SITE LOCATION	Started 380 m upstream of lake in reach 6.
	COMMENTS
Section	Comments
SITE LOCATION	Surveyed entire reach.
	COMMENTS
Section	Comments
FISH PRESENCE	No electrofishing due to CT captured upstream in reach 9 and inability to safely or effectively shock in this wetland reach.
FISH PRESENCE	No Endue to CT captured upstream in reach 9 and inability to safely or effectively shock in this wetland reach.
FISH PRESENCE	No EF due to CT captured upstream in reach 9 and inability to safely or effectively shock in this wetland reach.
FISH PRESENCE	No EF due to CT captured upstream in reach 9 and inability to safely or effectively shock in this wetland reach.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Beaver pond wetland.
RIPARIAN VEGETATION	Beaver pond wetland.
RIPARIAN VEGETATION	Beaver pond wetland.
IPARIAN VEGETATION	Beaver pond wetland.

Site # ILP #	28 40314	ILP Map # 093L.089
Reach #	8.0	
Waters	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 11 Comment: 400 metres upstream of lake in reach 6. Roll #: TC2 Frame #: 11



Direction of Photo: D CD #: 1 Image #: 12 Comment: 400 metres upstream of lake in reach 6. Roll #: TC2 Frame #: 12

## **FDIS Site Card**

#### 1:20K Reconnaissance Stream Inventory 2001

					Re	ach # ILP Ma	p# 1LP#	Site
Watershed Code: 000-00	0000-00000-00	000-0000-0000-0	00-000-000-000	-000-000	9.0	093	L.089 40314	4 29
			PR	OJECT				
		<u> </u>				Den en Kanadaria.		
Project Name Stream Name (gaz.		and Fulton Lake	Tributaries			Project Code	. 1	282
Project Watershed Code			00-000-000-00	0-000-000-00	00-000	Project Code	. ,	202
			WAT	ERSHE	D	n belia mana da sa sa sa Ri Sing Kanadara	an an an an an an an an an an an an an a	
Gazetted Name:					Local	Name: Unnamed	Creek	
Watershed Code: 000-00		000-0000-0000-0	00-000-000-000	-000-000				
ILP Map#: 093L.0	89	ILP #: 40314	NID Map #: 093	3L.089	NID #: 4614	40 Reach #	9.0	Site #: 29
Field UTM (Z.E.N):		Method:			Site Lg: 1	100 M	lethod: HC	Access: FT
GIS UTM (Z.E.N): 9.6759	29.6081315				Ref. Name:			
Date: 200	1/07/19	Time: 13:30	Agency:	C141	Crew: ML	/ NF	Fish Crd?:	Incomplete:
	e de la composition		C H	ANNEL		a the second		
Mtd	width width		width width		1 1 1	width Avg	Gadient	% Mtd Avg
Channel Width (m): MS	2.00 1.50	1.30 1.40	1.70 1.60			1.58	Method I: 2.0	2.0 AL 2.00
Wetted Width (m): MS	1.60 1.50	1.00 1.10	1.50 1.10			1.30	Method II:	
Pool Depth (m): MS	0.20 0.15	0.20 0.15	0.40 0.25			0.23	No Vis.Ch.:	
Wb Depth: .4	.4 .4	Avg: 0.40	Method:	MS	Stage: L	м 🖌 н 🗖	Dw:	Tribs.:
COVER	To	tal: A			_			
Type: SWD	LWD	B Ū	DP		CROV	WN CLOSURE		
Amount: S	S	N S	S	D N	3	41-70%		
Loc: P/S/O:						REAM VEG: N	🖌 A 🗌 M 🗌 V	
LWD: F		DIST: E						
LB SHP: S					PF	B SHP: S		
							ССВСИ	
RIP: C						RIP: C		
STG: YF						STG: YF		
			FREE CAT DE LE SERVICE					
			<b>W</b>	AIER		a sana ang ang ang ang ang ang ang ang ang		
EMS: Temp: 10			Method: T3		Req	r#: nd.:90		Method: S4
pH: 7.3			Method: FD					
Flood Signs: none			Method: GE		Tur	b.: Т 🗌 М 🗌	L 🗌 C 🔽	Method: GE
			MORF	HOLO	3Y			
Ded Materials	Nominent. E	Subdom				B1 B2 B3	D1 D2 D3	. <u></u>
Bed Material: [ D95: 2.00	Cominant: F D (cm): 1.50							]
Pattern: SI	, , ,			ISTURBAN		C2 C3 C4	C5 S1 S2	
Islands: N								
Coupling: DC								
Confinement: OC				Bars:	N			
FSZ:				Dars.	N			
			HABITA	TQUA	LITY			
Name				n an thai thai thai thai thai thai thai thai	Comments			
Spawning Habitat		places with good	-					
Rearing Habitat		pools and comple	<u> </u>					
OverWinter Habitat	Imoderate- a	ew suitable pools		OTOS				
Dhata I 5		P:-				Commonia		
	к Lg STD	Dir U	100 metres	upstream of	confluence of	Comments ILP 40307.		
	STD	D			confluence of			
			CON	IMENT	8			
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## **FDIS Site Card**

#### 1:20K Reconnaissance Stream Inventory 2001

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Site

29

Reach # ILP Map # ILP #

Watershed Code: 000-	000000-00000-0000-0000-0000-000-000-000-000-000-000	9.0	093L.089	40314
Section		Comments		
SITE LOCATION	60 m upstream of confluence with tributary ILP 40307.			
	COMMENTS			
Section		Comments		
SURVEY LOCATION	Surveyed entire reach.			
	COMMENTS			
Section		Comments		

SURVEY LOCATION	Stream sections in old cut block have a riparian band but the habitat quality in the block is notably worse than that observed downstream in the non-harvested area.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	10-20 m bands on both banks consisting of alder, twinberry, spruce, and twisted stalk.

v	Vaters	hed Co	de:	I	000-0000	00-00000	00000	0000-	-0000-0	000-000	-000-1	000-000-	000	Ş	Reach 9.0		LP Map # 093L.089	ILP # 40314
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Ga	azette	d Name:										Loca	al: Unr	named	Creek			
	Proje	ct Code:	480-0	00000-00	000-000	00-000-	0000-0	00-000	-000-0	00-000-								
				00000-00	000-000	00-000-00	0000-0							_				
1		body ID:						1	LP Map	o#: 09				ILP	#: 40	314	Reach #:	9 -
	Pn	oject ID:	1282									Lake/Str	eam:	5		Lake Fr	om Date:	
	Fish F	ermit #:	145	5013K	Da	ate: 200	1/07/19	3	To:	2001/0	7/19	Age	ency: C	:141	Cre	w: NF/M	L Res	ample:
87. Q.								SI	TE /	ME	ТНО	DD						
Site#	l Ni	D Map	NID	# [	JTM:Zone	/Fast/No	rth/Mth		MTD/N	14 ( N 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	mp	Cond	Turbio	<u>i I</u>	Sector Sector	<u></u>	omment	
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Site#	M	TD/NO	H/P	Date I	n Tir	ne in	Date C	Dut T	Time O	ut	Sec. Mar	etter og dette			Comr	nent		
29	E	- 1	1	2001/07	/19 1:	3:29 2	2001/07	7/19	13:41									
					Ć	EL	ECT	ROF	ISH	ER	SPE	CIFI	CAT	ION	S			
Site#		MTD/N	10	H/P	Enc	:   :	Sec	Le	ngth	W	dth	Volt	age	Frequ	iency	Pulse	Make	Mode
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						$\mathcal{M}_{\mathcal{A}}^{(n)} = \mathcal{M}_{\mathcal{A}}^{(n)}$		FI	SH S	S U M	MAI	RY						
Site#	T	MTD/N	10	H/P	Species	s Sta	ge	Age	T	otal #	Lgt	n (Min/M	ax)	ishAct			Comment	· · · · · · · · · · · · · · · · · · ·
29	E	F	1	1	СТ	J		1		7	-		74	R				
							IN	DIVI	DUA	L F	ISH	DA	r A 💡			3453		
ite#	мт	D/NO	H/P	Species	Length	Weight	Sex	Mat		Age		Vch#	Gen	· · · · · · · · ·	Roll #	Frame#	Co	mment
		1								/Smpl#,	-		Str/S	mpl#		<b></b>		
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29	EF		1	CT	55 60		U	IM	sc	17	1					<u> </u>		
29	EF		1	CT	65		U	IM	sc	18	1	<u> </u>				<u> </u>		
29	EF		1	CT	52		Ū	IM	<u> </u>		†							
29	EF	1	1	СТ	74		U	ІМ	sc	19							No useable s	cales
29	EF	1	1	СТ	63		U	IM	SC	20	1							
						377718 37774			CON	MEI	IT S							
an an thù th	S	ection	<u>an an 2011</u> )	I	<u></u>	1999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			<u> (12.71.655)</u>		2 million12	Comm	ents		<u>arte an Seri d</u>	<u></u>	en esta en esta en el esta en el esta en el esta en el esta en el esta en el esta en el esta en el esta en el e	
		G EFFIC									-	0.4 m po						

Site #	29	
ILP #	40314	ILP Map # 093L.089
Reach #	9.0	
Waters	hed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000

а



Direction of Photo:DCD #:1Image #:10Roll #:TC2Frame #:10Comment:100 metres upstream of confluence of ILP 40307.Roll #:TC2Frame #:10



Direction of Photo: U CD #: 1 Image #: 9 Comment: 100 metres upstream of confluence of ILP 40307. Roll #: TC2 Frame #: 9

## **FDIS Site Card**

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1220

(18)

		Reach # I	ILP Map #	ILP #	Site
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	00-000-000-000	1.0	093L.089	40403	30
	PROJECT				
Device Manage Device Laboratory in the Laboratory		er ing aktionalise			
Project Name: Babine Lake and Fulton Lake Tributarie Stream Name (gaz.): BABINE RIVER	S	Projec	ct Code:	1282	
Project Watershed Code: 480-000000-00000-00000-0000-0000-0000-0	00-000-000-000-000-000	1 10,00		,LOL	
	ATERSHED				
Gazetted Name:		Local Name: Ur	nnamed Creek		
Watershed Code: 000-000000-00000-0000-0000-000-000-000		: 46141 R	Reach #: 1.	0 S	ite #: 30
Field UTM (Z.E.N): Method:		te Lg: 100	Method: HC	Acces	s: H
GIS UTM (Z.E.N): 9.677803.6078986	Ref. N	-			
Date: 2001/08/23 Time: 14:46 Ad	19990//: C141 Crew	: RS NF	Fish Crd?:	✓ inc	complete:
			FISH Clur.		
	CHANNEL			Opdiarst of	
	width width width width width	dth width Av 1.2		Gadient %	Mtd Avg AL 0.00
	1.20	1.1			
Pool Depth (m): MS 0.20 0.10 0.10 0.20 0.10	0.10	0.1	No Vis.Ch.:		
Wb Depth: .3 .3 .4 Avg: 0.33 Me	thod: MS Stage	: L 🔽 M 🗌 H			ibs.:
COVER Total: M	-				
Type: SWD LWD B U DP	OV IV	CROWN CLOSU	JRE		
Amount: T T T T N	D N	1 1-20%			
		INSTREAM VEG	6: N 🗌 A 🖌 M	<i>I</i> <b>∨</b> □	
LWD: F DIST: E					
LB SHP: S		RB SHP: V			
Texture: F 🖌 G 🗌 C 🛄 B 🔤 R 🗌 A 📋		Texture: F	<b>∀</b> G □ C □	B 🗌 R 🗌	A 🗌
RIP: D		RIP: D			
STG: MF		STG: MF			
	WATER				
EMS:		Req #:			
Temp: 13 Method		Cond.: 140		Meth	od: S4
PH: 7.4 Method Flood Signs: none Method		Turb.: T	M 🗌 L 🗌 C 🛛	Meth	od: GE
		e jaga kanalar kanalar			
	<u>ORPHOLOGY</u>	O1 B1 B2	B3 D1 D2	2 D3	
Bed Material: Dominant: F Subdom: NA					
D95: 0.01 D (cm): 0.01 Morph: LC					64 OF
Pattem: ME Islands: N				S2 S3	S4 S5
Coupling: DC					
Confinement: UN	Bars:				
FSZ:					<u>י</u> ך ביי
HAB	ITAT QUALITY				
Name	Com	ments		an terri naziona e Al 128 mi	
Rearing Habitat Limited due to low flow, fine substrates a	-				
OverWinter Habitat None observed due to no deep pools and Spawning Habitat None observed					
<b>*</b>	PHOTOS				
Photo Foc Lg Dir		Com	ments	<u>ter (n ste i tele)</u>	e seten i e di inseriedi
	ximately 75 metres upstrea				
	ximately 75 metres upstrea	am of wetland rea	acn 2 of ILP 40314.		

## **FDIS Site Card**

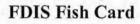
#### 1:20K Reconnaissance Stream Inventory 2001

10

Site

ILP Map # ILP # Reach # 093L.089 1.0 40403

Watershed Code: 000-0	000000-00000-0000-0000-000-000-000-000	80
Section	Comments	-
SURVEY LOCATION	Surveyed lower 200 m.	_
	COMMENTS	
Section	Comments	
SITE LOCATION	Approximately 75 m upstream of wetland reach 2 of ILP 40314.	
	COMMENTS	
Section	Comments	
RIPARIAN VEGETATION	5-20 m riparian band on both sides consisting of alder, some willow, horsetail, and twinberry	_
	COMMENTS	
Section	Comments	-
FISH PRESENCE	No fish captured, requires resampling to confirm fish absence.	_



1:20K Reconnaissance Stream Inventory 2001

													Rea	ch #	ILP Map		ILP #
wa	itershed C	ode:		000-	000000-00	0000-0000	0-000	0-000-000-000-	000-0	00-00	0-000-000	0	1.0		093L.08	9	40403
								WATER	во	DY					1		
Gaze	etted Nam	e:									Local:	Unna	amed Creek				
Pr	roject Cod	e: 480	-000000	-00000	-00000-00	00-0000-00	00-00	00-000-000-0	00-								
	WS Cod	e: 000	-000000	-00000	-00000-00	00-0000-0	00-00	00-000-000-0	00-00	00							
Wa	aterbody II							ILP Map #:	093L					40403	Reach		-
	Project II	0: 128	2							La	ke/Strear	n: S	3	Lake	From Date	э:	
Fis	sh Permit	#: _14	15013K		Date:	2001/08/23	3	To: 200	1/08/2	23	Agenc	y: C1	41	Crew: NF	F/RS	Resar	nple:
					-		S	ITE / M	ET	HO	D					-	
Site#	NID Map	NI	D#	UTM:	Zone/Eas	t/North/Mth	nd	MTD/NO	Tem	plo	ond T	urbid	1		Commen	t	
30	093L.089	46	141					EF 1	13	-	140	С					
	1. C	1					Α.	GEAR S	ET	TIN	GS	1					
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30	EF 1	1	2001	/08/23	14:33	2001/0	8/23	14:43			_			_			
	and the second				C.E	LECT	RO	FISHEF	S	PEC	IFIC	ATI	ONS				
Site#	MTD	NO	H/	P	Encl	Sec	L	ength	Widt	h	Voltage	e	Frequency	Puls	e N	lake	Mod
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30	EF	1	1	N	FC			0				1					
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	Section		T								Comment	S					
RCENT	HABITAT	SHOO	KED S	hocked	100% lar	ge channe	I mor	phology.		-							
2040-000	LING EFFI							d wetland (lim	ited a	access	) and sm	all an	ode ring				

Site #	30	
ILP #	40403	
Reach #	1.0	
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ILP Map # 093L.089



 Direction of Photo:
 U
 CD #:
 1
 Image #:
 77
 Roll #:
 TC4
 Frame #:
 21

 Comment:
 Approximately 75
 metres upstream of wetland reach 2 of ILP 40314.
 Frame #:
 21



Direction of Photo:DCD #:1Image #:78Roll #:TC4Frame #:22Comment:Approximately 75 metres upstream of wetland reach 2 of ILP 40314.Frame #:22



## 1:20K Reconnaissance Stream Inventory 2001

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			9.5.7		WA	TERS	HED					
Gazetted Name	:							Local Name:	Unnamed Creek			
Watershed Code											-	
1	: 093L.089		LP #: 403		ID Map #:	: 093L.089	NI	D #: 46136	Reach #:	1.0	Site #:	
Field UTM (Z.E.N) GIS UTM (Z.E.N)		80746	IVIE	ethod:			Re	Site Lg: 100 f. Name:	Method: H	10	Access: FT	
Da	te: 2001/07/	19 1	Time: 14:5	50	Acer	ncy: C141	C	rew: NF/ML	Fish C	rd?:	Incomp	loto □
	2001/01/		1110. 11.0			HANN			Tian o		meemp	
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Channel Width (m):									0.00 Metho		2.0 AL	3.00
Wetted Width (m):					-		1.5	1 m 1 m 1	0.00 Method	111:		
Pool Depth (m):	-	-		_	_	1.1			0.00 No Vis.	Ch.: 🗹 Ir	termittent:	
Wb Depth:	1		Avg:	0.00	Metho	od:	Sta	age: L 🗌 M [	] H 🗌	Dw:	Tribs.:	
COVER		Tota	al:									
Туре:	SWD	LWD	В	U	DP	OV	IV	CROWN CLC				
Loc: P/S/O:								3 41-	70%			
LOC. P/3/U.												
LWD: LB SHP Texture	:							INSTREAM V	/EG: N 🗌 A [			7
LB SHP	: : F 🗌 G   :C							INSTREAM V	reg: N ☐ A [ F ☐ G ☐ C C			
LB SHP Texture RIP	: : F 🗌 G   :C					WATE	R	INSTREAM V RB SHP: Texture: RIP: (	reg: N ☐ A [ F ☐ G ☐ C C			
LB SHP Texture RIP STG EMS:	: : F _ G : C : MF					WATE	R	INSTREAM V RB SHP: Texture: RIP: STG: I Req #:	reg: N ☐ A [ F ☐ G ☐ C C		R 🗌 A [	]
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LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs:	: : F 🗌 G : MF	_ C _	B R		Method: Method: Method:	WATE		INSTREAM V RB SHP: Texture: RIP: 0 STG: 1 Req #: Cond.: Turb.: T	YEG: N ☐ A [ F ☐ G ☐ C C MF	<u>в</u>	R A C	
LB SHP Texture RIP STG EMS: Temp: pH:	: F G : MF	C C	B R	i i Subdom:	Method: Method: Method:	RPHOL	DGY	INSTREAM V RB SHP: Texture: RIP: ( STG: I Req #: Cond.: Turb.: T	/EG: N _ A [ F _ G _ C C MF	с —	R A C	
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LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs: Bed Material:	: : F [] G : MF Domir D (	C C	B R	i i Subdom:	Method: Method: Method:	<b>R P H O L</b> DISTUR	BANCE	INSTREAM V RB SHP: Texture: RIP: 0 STG: 1 Req #: Cond.: Turb.: T	/EG: N _ A [ F _ G _ C C MF	C	R A C	
LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling:	: : F [] G : MF : MF Domir D (i	C C	B R	i i Subdom:	Method: Method: Method:	<b>R P H O L</b> DISTUR	BANCE	INSTREAM V RB SHP: Texture: RIP: 0 STG: 1 Req #: Cond.: Turb.: T [	F G G C C MF B2 B3 D1	C	R A C	
LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling: Confinement:	: : F _ G : MF : MF Domir D ( UN	C C	B R	i i Subdom:	Method: Method: Method:	R P H O L DISTUR INDICA	BANCE	INSTREAM V RB SHP: Texture: RIP: 0 STG: 1 Req #: Cond.: Turb.: T [	/EG: N A A	C	R A C	54 S5
LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling:	: : F _ G : MF : MF Domir D ( UN	C C	B R	Subdom: Morph:	Method: Method: Method: MO	R P H O L DISTUR INDICA	BANCE ATORS	INSTREAM V         RB SHP:         Texture:         RIP: 0         STG: 1         Req #:         Cond.:         Turb.:         Turb.:         T         C1         C1         C2         N         SIDE	/EG: N A A	C D2 D3 S1 S2	R _ A [ Method: Method:	54 S5
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LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling: Confinement: FSZ: Name Other	: : : : : : : : : : : : : :	C C C C C C C C C C C C C C C C C C C	B R S	Subdom: Morph: ied; no sui	Method: Method: MO MO HABI face wate	RPHOL DISTUR INDICA E TAT QI er. PHOTC riparian bar riparian bar	BANCE ATORS Bars: UALII C DS nd 40 metu nd 40 metu	INSTREAM V RB SHP: Texture: RIP: 0 STG: 1 Req #: Cond.: Turb.: T [ 01 B1 1 01 B1 1 01 C2 0 N SIDE TY roomments	reg:       N       A       A         F       G       C         C       M       L       C         M       L       C       C         B2       B3       D1       C         C3       C4       C5       C         DIAG       DIAG       C       C         omments       C       C       C	C D2 D3 S1 S2 MID 3.	R _ A [ Method: Method:	54 S5
LB SHP Texture RIP STG EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling: Confinement: FSZ: Name Other Photo TC2 F: 13	: F G G :C : MF Domir D ( DC UN DC UN Foc Lg STD	C C C C C C C C C C C C C C C C C C C	B   R s s	Subdom: Morph: ied; no sui	Method: Method: MO MO HABI face wate	RPHOL DISTUR INDICA E TAT QI er. PHOTC	BANCE ATORS Bars: U A L I 1 C D S and 40 metu N T S	INSTREAM V RB SHP: Texture: RIP: 0 STG: 1 Req #: Cond.: Turb.: T [ 01 B1 1 01 B1 1 01 C2 0 N SIDE TY roomments	reg:       N       A       A         F       G       C         C       M       L       C         M       L       C       C         B2       B3       D1       C         C3       C4       C5       C         OIAG       DIAG       C         OMments       ake ILP 40314, R6       C	C D2 D3 S1 S2 MID 3.	R _ A [ Method: Method:	

## **FDIS Site Card**

#### 1:20K Reconnaissance Stream Inventory 2001

ILP # Site Reach # ILP Map #

1.0	093L.089	40310

	COMMENTS
Section	Comments
SURVEY LOCATION	Started at lake ILP 40314, R6.
SURVEY LOCATION	Started at lake ILP 40314, R6.
SURVEY LOCATION	Started at lake ILP 40314, R6.
SURVEY LOCATION	Started at lake ILP 40314, R6.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed riparian band for 50 m upstream of lake; stream can then no longer be identified; line intersects at 75 m, 120 m and 220 m upstream of lake revealed nothing; entire forest has riparian undergrowth; several breaks in forest canopy.
SURVEY LOCATION	Surveyed riparian band for 50 m upstream of lake; stream can then no longer be identified; line intersects at 75 m, 120 m and 220 m upstream of lake revealed nothing; entire forest has riparian undergrowth; several breaks in forest canopy.
SURVEY LOCATION	Surveyed riparian band for 50 m upstream of lake; stream can then no longer be identified; line intersects at 75 m, 120 m and 220 m upstream of lake revealed nothing; entire forest has riparian undergrowth; several breaks in forest canopy.
SURVEY LOCATION	Surveyed riparian band for 50 m upstream of lake; stream can then no longer be identified; line intersects at 75 m, 120 m and 220 m upstream of lake revealed nothing; entire forest has riparian undergrowth; several breaks in forest canopy.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	Riparian band leaving lake is 15-25 m wide and consists of mountain alder, willow, horsetail, sedges, and grasses.
RIPARIAN VEGETATION	Riparian band leaving lake is 15-25 m wide and consists of mountain alder, willow, horsetail, sedges, and grasses.
RIPARIAN VEGETATION	Riparian band leaving lake is 15-25 m wide and consists of mountain alder, willow, horsetail, sedges, and grasses.
RIPARIAN VEGETATION	Riparlan band leaving lake is 15-25 m wide and consists of mountain alder, willow, horsetail, sedges, and grasses.

Site #	31	
ILP #	40310	ILP Map # 093L.089
Reach #	1.0	
Water	shed Code:	000-00000-0000-0000-0000-000-000-000-000-000-000



Direction of Photo: U CD #: 1 Image #: 13 Roll #: TC2 Frame #: 13 Comment: View in riparian band 40 metres upstream of Lake ILP 40314, R6.



Direction of Photo: D CD #: 1 Image #: 14 Roll #: TC2 Frame #: 14 Comment: View in riparian band 40 metres upstream of Lake ILP 40314, R6.

SKR Consultants Ltd.



## 1:20K Reconnaissance Stream Inventory 2001

							And in state									
Watershed Code	: 000-000	0000-00	000-000	000-000	0-0000-0	00-000-0	-			1.	0	C	93L.089	40	0307	32.
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Proje Stream Nan Project Watersh	ne (gaz.)	: BABI	NE RIV	ER	on Lake			0-000-00	00-000-0	00	Pr	roject Co	de:		1282	2
							WAT	ERSI	HED					-		
Gazetted Name:						in m				Loc	al Name	Unnam	ed Creek			
Watershed Code: ILP Map#:				000-0000 LP #: 40		00-000-0 NID Ma				ID #: 46	195	Reac		1.0		Site #: 32
Field UTM (Z.E.N):		55			lethod:	NID WA	ip #. 05.	52.005		Site Lo		Reaci	Method: H		100	ess: FT
GIS UTM (Z.E.N):		12.6081	334	IV.	lethou.				Re	of. Name			Method: F		ACCI	ess. FI
Dat	te: 2001	/07/19	T	Time: 13	10		Agency:	C141	-	rew:	ML		Fish C	d2.		Incomplete:
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Pool Depth (m):	-	-	-	-	_	-				-	-	0.00	No Vis.	Ch.: 🔽	Interm	nittent:
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COVER			Tota	al:												
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Amount:		-				1				4	71	-90%				
Loc: P/S/O:															The statement	
LWD: LB SHP: Texture: BIP:	F	G									RB SHP: Texture:	F	N □ A [ G □ C			
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LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material:	F C MF	ominant	¢ 🗌		Subdom	Metho Metho Metho	d: d: d: <b>ORP</b>	HOL	OGY BANCE	R	RB SHP: Texture: RIP: STG: eq #: ond.: urb.: T B1	F C MF	G _ C		R Me	A C
LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands:	F [] :C :MF	ominant	¢ 🗌		Subdom	Metho Metho Metho	d: d: d: <b>ORP</b>	HOL	OGY BANCE	Ri C T 01	RB SHP: Texture: RIP: STG: eq #: ond.: urb.: T B1	F C MF M [  B2 B [	G _ C		R Me	A C
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LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands:	F C MF D DC FC	ominant	¢ 🗌		Subdom	Metho Metho Metho	d: d: d: <b>ORP</b>	DISTURE	OGY BANCE	Ri C T 01	RB SHP: Texture: RIP: STG: eq #: ond.: urb.: T B1	F C MF  B2 B  C3 C 	G _ C		R Me Me 33 	A C
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LB SHP: Texture: RIP: STG: EMS: Temp: pH: Flood Signs: Bed Material: D95: Pattern: Islands: Coupling: Confinement: FSZ: Name Other	F C MF	ominant D (cm) None	¢ 🗌		Subdom Morph	Metho Metho Metho	d: d: IORP		OGY BANCE TORS ars: JALI C	R C T 01 C1 C1 C1 C1 C1 C1 C1 C1 C1 C1 C1 C1 C1	RB SHP: Texture: RIP: STG: eq #: ond.: urb.: T B1 C2 SIDE	F C MF M [  B2 B  C3 C  C3 C  C3 C  C3 C  C3 C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C C  C C  C C C  C C C C C C C C C C C C C C C C C C C C	G _ C		R Me Me 33 	A
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## **FDIS Site Card**

## 1:20K Reconnaissance Stream Inventory 2001

Site 32

	Reach #	ILP Map #	ILP #	
Watershed Code: 000-000000-00000-00000-0000-0000-000-0	1.0	093L.089	40307	

	COMMENTS
Section	Comments
SITE LOCATION	160 m upstream of confluence with ILP 40314.
SITE LOCATION	160 m upstream of confluence with ILP 40314.
SITE LOCATION	160 m upstream of confluence with ILP 40314.
SITE LOCATION	160 m upstream of confluence with ILP 40314.
	COMMENTS
Section	Comments
SURVEY LOCATION	Surveyed lower 300 m upstream reach.
SURVEY LOCATION	Surveyed lower 300 m upstream reach.
SURVEY LOCATION	Surveyed lower 300 m upstream reach.
SURVEY LOCATION	Surveyed lower 300 m upstream reach.
	COMMENTS
Section	Comments
SUVERY DESCRIPTION	Reach consisted of a distinct riparian band within a gully with no sign of alluvium of fluvial deposits; muddy patches were commonly observed throughout surveyed section.
SUVERY DESCRIPTION	Reach consisted of a distinct riparian band within a gully with no sign of alluvium of fluvial deposits; muddy patches were commonly observed throughout surveyed section.
SUVERY DESCRIPTION	Reach consisted of a distinct riparian band within a gully with no sign of alluvium of fluvial deposits; muddy patches were commonly observed throughout surveyed section.
SUVERY DESCRIPTION	Reach consisted of a distinct riparian band within a gully with no sign of alluvium of fluvial deposits; muddy patches were commonly observed throughout surveyed section.
	COMMENTS
Section	Comments
RIPARIAN VEGETATION	25-40 m band of alder, twinberry, willow, prickly rose and spruce.
RIPARIAN VEGETATION	25-40 m band of alder, twinberry, willow, prickly rose and spruce.
RIPARIAN VEGETATION	25-40 m band of alder, twinberry, willow, prickly rose and spruce.
RIPARIAN VEGETATION	25-40 m band of alder, twinberry, willow, prickly rose and spruce.

Site #	32	
ILP #	40307	ILP Map # 093L.089
Reach #	1.0	
Waters	shed Code:	000-00000-00000-0000-0000-000-000-000-000-000-000



 Direction of Photo:
 U
 CD #:
 1
 Image #:
 7
 Roll #:
 TC2
 Frame #:
 7

 Comment:
 210 metres upstream of confluence with ILP 40314.
 Frame #:
 7



Direction of Photo: D CD #: 1 Image #: 8 Comment: 210 metres upstream of confluence with ILP 40314. Roll #: TC2 Frame #: 8

# Appendix 2. Photodocumentation Forms 1 and 2. Negatives and digital images of photos (2 copies) were submitted to B.C. Environment.

#### **Photodocumentation Form 1 – Equipment Details**

Survey Start Date:	2001/07/18	Survey End Date:	2001/08/23
Agency:	C141		
Crew:	RS/ ML/ DM/ NF		

#### Camera:

Make and Model:	Canon Sureshot A1
Lense:	35 mm
Format:	135 mm, Kodak CD Rom

#### Roll and or Batches Detail:

Roll #	CD #	Output Medium	Film Type	ISO
TC1	1 (Tanglechain)	Negative / CD Rom	colour print	200
TC2	1 (Tanglechain)	Negative / CD Rom	colour print	200
TC3	1 (Tanglechain)	Negative / CD Rom	colour print	200
TC4	1 (Tanglechain)	Negative / CD Rom	colour print	200
TC5	1 (Tanglechain)	Negative / CD Rom	colour print	200

## Photo Documentation Report

WS Code	ILP MAP #	NID MAP #	Ph	oto		Photo CD	Reach Site UTM(Zone/East/North) Date Type For	Foc
Waterbody ID	ILP#	NID #	Roli	Frame	CD #	Image #	Comment	Dir
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.090	093L.090	TC1	1	1	26	1.0 24 9.680620.6082011 2001/07/18 SITE ST	υ
	40363	46132					View in Red Bluff Park approximately 40 metres upstream of Babine Lake.	
000-000000-00000-0000-0000-000-000-000-000-000-000	093L.090	093L.090	TC1	2	1	27	1.0 24 9.680620.6082011 2001/07/18 SITE ST	D
	40363	46132					View in Red Bluff Park approximately 40 metres upstream of Babine Lake.	
000-000000-00000-0000-0000-000-000-000-000-000-000	093L.090	093L.090	TC1	3	1	28	1.0 24 9.680472.6082010 2001/07/18 SITE ST	υ
	40363	46142					View at sample site approximately 40 metres downstream of Granisle Highv	ay
				<u></u>			(shows culvert).	
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000	093L.090	093L.090	TC1	4	1	29	1.0 24 9.680620.6082011 2001/07/18 SITE ST	
	40363	46132					View at sample site approximately 40 metres downstream of Granisle Highv	ay.
000-000000-00000-00000-0000-000-000-000-000-000-000	093L.090	093L.090	TC1	5	1	30	2.0 25 9.680037.6082081 2001/07/18 SITE ST	υ
	40363	46133					View at site location (approximately 1220 metres upstream from Babine Lak	e).
000-000000-00000-0000-0000-000-000-000-000-000-000	093L.090	093L.090	TC1	6	1	31	2.0 25 9.680037.6082081 2001/07/18 SITE ST	D
	40363	46133					View at site location (approximately 1220 metres upstream from Babine Lak	e).
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.090	093L.090	TC1	7	1	32	1.0 23 9.680299.6083606 2001/07/18 SITE ST	Jυ
	40356	46130		8		-	250 metres upstream of Babine Lake.	
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.090	093L.090	TC1	8	1	33	1.0 23 9.680299.6083606 2001/07/18 SITE ST	D
	40356	46130					250 metres upstream of Babine Lake.	
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.089	093L.089	TC1	9	1	34	1.0 19 9.678282.6084701 2001/07/18 SITE ST	πU
	40354	46128					250 metres upstream of confluence with ILP 40353.	
000-000000-00000-0000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00	093L.089	093L.089	TC1	10	1	35	1.0 19 9.678282.6084701 2001/07/18 SITE ST	J D
	40354	46128		•			250 metres upstream of confluence with ILP 40353.	<u>.</u>
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-	093L.089	093L.089	TC1	11	1	36	2.0 20 9.677981.6084611 2001/07/18 SITE ST	J Ü
	40354	46129					575 metres upstream of confluence with ILP 40353.	
000-000000-00000-0000-0000-0000-000-000-000-000-000-000	093L.089	093L.089	TC1	12	1	37	2.0 20 9.677981.6084611 2001/07/18 SITE ST	d D
	40354	46129					575 metres upstream of confluence with ILP 40353.	1
000-00000-00000-0000-0000-0000-000-000-000-000-000-000-000	093L.089	093L.089	TC1	15	1	40	3.0 17 9.677310.6083485 2001/07/18 SITE ST	1 U
	40353	46126	101	10			3250 metres upstream of Babine Lake.	1 4
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-00-000-000-00-000-00-00-00-000-00-00-00-000-00-000-000-00-00-00-000-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00			TC1	16	1	44		
	093L.089 40353	093L.089 46126	TC1	10		41	3.0         17         9.677310.6083485         2001/07/18         SITE         ST           3250 metres upstream of Babine Lake.	D
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000-000000-00000-0000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00	093L.089 40402	093L.089 46134	TC1	17	1	42	1.0         21         9.678207.6082414         2001/07/18         SITE         ST           50         patters upstream of coefficience with meinters         SITE         ST	<u>u</u> 1
					-		60 metres upstream of confluence with mainstem.	
000-00000-00000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-	093L.089	093L.089	TC1	18	1	43	1.0 21 9.678207.6082414 2001/07/18 SITE ST	D
	40402	46134				· · · · · · · · · · · · · · · · · · ·	60 metres upstream of confluence with mainstem.	

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WS Code	ILP MAP #	NID MAP #	Ph	oto		Photo CD	Reach Site UTM(Zone/East/North) Date	Туре Бо	oc Foc
Waterbody ID	ILP #	NID #	Roll	Frame	CD#	Image #	Comment	Le	en Dir
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000	093L.089	093L.089	TC1	19	1	44	1.0 22 9.677969.6082529 2001/07/18	SITE S	STD U
	40359	46131					iew of site 95 metres upstream of confluence with ILP 40402.		
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000	093L.089	093L.089	TC1	20	1	45	1.0 22 9.677969.6082529 2001/07/18	SITE S	STD D
	40359	46131					iew of site 95 metres upstream of confluence with ILP 40402.		
000-00000-00000-00000-0000-0000-000-000-000-000-000-000	093L.099	093L.099	TC1	21	1	46	1.0 1 9.673689.6091615 2001/07/18	SITE S	STD U
	40208	46109					20 metres upstream of Babine Lake.		
000-000000-00000-00000-0000-0000-000-000-000-000-000-000	093L.099	093L.099	TC1	22	1	47	1.0 1 9.673689.6091615 2001/07/18	SITE S	STD D
	40208	46109					20 metres upstream of Babine Lake.		
000-000000-00000-00000-0000-0000-000-000-000-000-000-000	093L.099	093L.099	TC1	23	1	48	1.0 4 9.674517.6090578 2001/07/18	SITE S	STD U
	40216	46112					50 metres upstream of Babine Lake.		
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.099	093L.099	TC1	24	1	49	1.0 4 9.674517.6090578 2001/07/18	SITE S	STD D
	40216	46112					50 metres upstream of Babine Lake.		
000-00000-0000-0000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-0000	093L.089	093L.089	TC2	1	1	1	1.0 12 9.675271.6084826 2001/07/19	SITE S	STD U
	40334	46121				<b>.</b>	view of site 570 metres upstream of take ILP 40327, R7.		_
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000-00000-0000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000	093L.089	093L.089	TC2	12	1	12	8.0 28 9.676007.6080939 2001/07/19	SILE	STD D
	40314	46139					00 metres upstream of lake in reach 6.		

Materia et al D		NID MAP #		oto		Photo CD	Reach Site UTM(Zone/East/North) Date Type Foc	Foc
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000-00000-0000-0000-0000-0000-000-000-000-000-000-000-000	093L.089	093L.089	TC2	13	1	13	1.0 31 9.675632.6080746 2001/07/19 SITE STD	υ
	40310	46136					View in riparian band 40 metres upstream of Lake ILP 40314, R6.	
000-000000-00000-0000-0000-0000-000-000-000-000-000	093L.089	093L.089	TC2	14	1	14	1.0 31 9.675632.6080746 2001/07/19 SITE STE	D
	40310	46136					View in riparian band 40 metres upstream of Lake ILP 40314, R6.	
000-000000-00000-0000-0000-0000-000-000-000-000-000-000	093L.089	093L.089	TC2	15	1	15	5.0 18 9.676642.6084224 2001/07/19 SITE STD	JU
	40353	46127					50 metres upstream of inlet to lake in reach 4.	1 -
000-00000-00000-0000-0000-0000-000-000-000-000-000-000	093L.089	093L.089	TC2	16	1	16	5.0 18 9.676642.6084224 2001/07/19 SITE STD	D D
	40353	46127		10			50 metres upstream of inlet to lake in reach 4.	1 0
000-000000-00000-0000-0000-0000-000-000-000-000-000	093L.089	093L.089	TC2	17	1	17	1.0 16 9.679525.6085002 2001/07/18 SITE STD	J U
	40353	46125	102	17			250 metres upstream of Babine Lake.	1 0
	093L.089		TC2	18	1	40		
000-000000-00000-00000-0000-000-000-000-000-000-000-000	40353	093L.089 46125	102	18	1	18	1.0         16         9.679525.6085002         2001/07/18         SITE         STD           250 metres upstream of Babine Lake.         500 metres         500 metres <td>D</td>	D
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.089	093L.089	TC2	19	1	19	1.0 16 9.679387.6085003 2001/07/18 SITE STD	U
	40353	46144					Culvert at Granisle highway road crossing.	
000-000000-00000-0000-0000-0000-000-000-000-000-000	093L.089	093L.089	TC2	20	1	20	1.0 14 9.678763.6086228 2001/07/20 SITE STD	U C
	40347	46123			-		60 metres upstream of Babine Lake.	
000-000000-00000-00000-0000-0000-000-000-000-000-000	093L.089	093L.089	TC2	21	1	21	1.0 14 9.678763.6086228 2001/07/20 SITE STD	D
	40347	46123					60 metres upstream of Babine Lake.	
000-00000-00000-0000-0000-0000-000-000-000-000-000-000	093L.089	093L.089	TC2	22	1	22	1.0 14 9.678742.6086208 2001/07/20 SITE STD	υ
	40347	46147					View of 0.7 metres hanging culvert.	
000-00000-00000-0000-0000-000-000-000-000-000-000-000	093L.099	093L.089	TC2	23	1	23	1.0 15 9.677882.6086416 2001/07/20 SITE STD	υ
	40351	46124					50 metres upstream of confluence with ILP 40347.	•
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.099	093L.089	TC2	24	1	24	1.0 15 9.677882.6086416 2001/07/20 SITE STD	D
	40351	46124					50 metres upstream of confluence with ILP 40347.	1
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-00-000-00-00-000-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-0	093L.099	093L.099	TC2	25	1	25	1.0 7 9.671940.6089591 2001/07/20 SITE STD	υ
	40219	46116	102	20		20	50 metres upstream of confluence with mainstern.	1. "
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-000-00-	093L.099	093L.099	TC3	1	1	50		1
10-00000-0000-0000-0000-0000-000-000-00	40219	46116	103	····	I	50	1.0         7         9.671940.6089591         2001/07/20         SITE         STD           50 metres upstream of confluence with mainstem.         50 metres upstream of confluence with m	D
			TOO					
000-000000-00000-0000-0000-000-000-000-000-000-000-000-000	093L.099	093L.099	TC3	2	1	51	3.0 5 9.671714.6089665 2001/07/20 SITE STD	U_U
	40216	46113					250 metres upstream of confluence of ILP 40219.	
000-000000-00000-0000-0000-0000-000-000-000-000-000-000	093L.099	093L.099	TC3	3	1	52	3.0 5 9.671714.6089665 2001/07/20 SITE STD	D
	40216	46113					250 metres upstream of confluence of ILP 40219.	
000-000000-00000-0000-0000-000-000-000-000-000-000	093L.099	093L.099	TC4	1	1	57	1.0 9 9.668201.6091768 2001/08/23 SITE STD	υ
	40223	46118					150 metres upstream of confluence with mainstem (ILP 40222).	
		0001 000	TC4	2	1	58	1.0 9 9.668201.6091768 2001/08/23 SITE STD	υ
000-000000-0000-0000-0000-0000-000-000-000-000-000-000	093L.099	093L.099	104		<u> </u>		1.0 9 9.008201.0091708 2001/06/23, SITE STD	1 ~

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Waterbody ID         ILP#         NID#         Roll         Frame         CD#           000-00000-00000-0000-000-000-000-000-0	to CD         Reach         Site         UTM(Zone/East/North)         Date         Type         Foc         Foc         In           Image #         Comment         Comment         Di         <
40223         46118           000-00000-0000-0000-000-000-000-000-00	150 metres upstream of confluence with mainstem (ILP 40222).           62         2.0         8         9.668116.6092069         2001/08/22         SITE         STD
000-00000-0000-0000-0000-000-000-000-0	62 2.0 8 9.668116.6092069 2001/08/22 SITE STD
40222         46117           000-00000-00000-0000-000-000-000-000-0	
000-000000-00000-0000-0000-000-000-000	
40222 46117	Approximately 1400 metres upstream of confluence with mainstem (ILP 40222).
40222 46117	63 2.0 8 9.668116.6092069 2001/08/22 SITE STD
	Approximately 1400 metres upstream of confluence with mainstem (ILP 40222).
000-000000-00000-00000-0000-000-000-00	66 1.0 3 9.670598.6092979 2001/08/23 SITE STD
40399 46111	150 metres upstream of confluence of mainstem (ILP 40208).
000-000000-00000-0000-0000-000-000-000	67 1.0 3 9.670598.6092979 2001/08/23 SITE STD
40399 46111	150 metres upstream of confluence of mainstem (ILP 40208).
000-000000-00000-0000-0000-000-000-000	68 3.0 2 9.670759.6093015 2001/08/23 SITE STD
	Approximately 50 metres downstream of tributary (ILP 40399).
000-000000-00000-0000-0000-000-000-000	69 3.0 2 9.670759.6093015 2001/08/23 SITE STD
40208 46110	Approximately 50 metres downstream of tributary (ILP 40399).
000-000000-00000-0000-0000-000-000-000	70 2.0 9.673209.6089518 1999/03/17 REACH STD B
40216 46145	Aerial view of 5 m falls located downstream in reach 2.
000-000000-00000-0000-0000-000-000-000	71 2.0 10 9.675826.6088040 2001/08/23 SITE STD
40327 46119	Approximately 1700 metres upstream of Babine Lake.
000-000000-00000-0000-0000-000-000-000	72 2.0 10 9.675826.6088040 2001/08/23 SITE STD
40327 46119	Approximately 1700 metres upstream of Babine Lake.
000-000000-00000-0000-0000-000-000-000	73 3.0 13 9.673478.6086440 2001/08/23 SITE STD
40334 46122	Approximately 200 metres upstream of lake in reach 2 of ILP 40334
000-000000-00000-0000-0000-000-000-000	74 3.0 13 9.673478.6086440 2001/08/23 SITE STD 1
40334 46122	Approximately 200 metres upstream of lake in reach 2 of ILP 40334
000-000000-00000-0000-0000-000-000-000	75 1.0 26 9.677621.6078717 2001/08/23 SITE STD
40314 46137	Approximately 1350 metres upstream of Babine Lake.
000-000000-00000-0000-000-000-000-000-	
40314 46137	76         1.0         26         9.677621.6078717         2001/08/23         SITE         STD         I           Approximately 1350 metres upstream of Babine Lake.         STD         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I         I
000-000000-00000-0000-000-000-000-000-	77 1.0 30 9.677803.6078986 2001/08/23 SITE STD 1
40403 46141	Approximately 75 metres upstream of wetland reach 2 of ILP 40314.
000-000000-00000-0000-0000-000-000-000	78 1.0 30 9.677803.6078986 2001/08/23 SITE STD 1
40403 46141	Approximately 75 metres upstream of wetland reach 2 of ILP 40314.
000-000000-00000-0000-0000-000-000-000	79 4.0 6 9.668528.6092262 2001/08/23 SITE STD U
40216 46114	View of site approximately 520 metres upstream of tributary ILP 40225.
000-000000-00000-0000-0000-000-000-000	80 4.0 6 9.668528.6092262 2001/08/23 SITE STD 0
40216 46114	View of site approximately 520 metres upstream of tributary ILP 40225.

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WS Code	ILP MAP #	NID MAP #	Ph	oto	Photo CD		Rea	ach	Site	UTM(Zone/East/North)	Date	Туре	Foc	Foc
Waterbody ID	ILP#	NID #	Roll	Frame	CD #	Image #	Comment			Len	Dir			
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.089	93L.089	TC5	3	1	81	3.0 27 9.677645.6078906 2001/08/23 SIT			SITE	STD	U		
	40314	46138					View of best defined braid approximately 70 metres upstream from wetland.							
000-000000-00000-0000-0000-000-000-000-000-000-000-000	093L.089	93L.089	TC5	4	1	82	3.0 27 9.677645.6078906 2001/08/23 SITE 5			STD	D			
	40314	46138				-	View of best defined braid approximately 70 metres upstream from wetland					land.		

Landscape	ILP	TRIM	Reach	Site	Date	Voucher	Species	Fork Length	Verified
Unit		map			Collected		ID	(mm)	ID
Nadina	21855		1	20	25-Jul-01	LSU1	LSU	LSU1	
Nadina	21855		1	20	25-Jul-01	LSU2	LSU	LSU2	
Nadina	21855		1	20	25-Jul-01	LSU3	LSU	LSU3	
Nadina	21855		1	20	25-Jul-01	RB2	RB	RB2	
Nadina	21855		1	20	25-Jul-01	RB3	RB	RB3	
Nadina	21855		1	20	25-Jul-01	RB4	RB	RB4	
Nadina	21855		1	20	25-Jul-01	RB5	RB	RB5	
Nadina	21855		1	20	25-Jul-01	CAS3	CAS	CAS3	
Nadina	21855		1	20	25-Jul-01	CAS4	CAS	CAS4	
Nadina	21855		1	20	25-Jul-01	CAS5	CAS	CAS5	
Nadina	21567		1	58	25-Jul-01	DV3	DV	DV3	-
Nadina	21567		1	58	25-Jul-01	DV4	DV	DV4	
Nadina	21567		1	58	25-Jul-01	DV5	DV	DV5	
Nadina	21763		1	41	25-Jul-01	RSC1	RSC	RSC1	
Nadina	21763		1	41	25-Jul-01	RSC2	RSC	RSC2	
Nadina	21763		1	41	25-Jul-01	RSC3	RSC	RSC3	
Nadina	21763		1	41	25-Jul-01	RSC4	RSC	RSC4	
Nadina	21763		1	41	25-Jul-01	RSC5	RSC	RSC5	
Nadina	21915		1	16	16-Jul-01	LNC1	LNC	LNC1	
Fulton	40208		1	1	18-Jul-01	DV1	DV	111	
Fulton	40208		1	1	18-Jul-01	DV2	DV	58	
Fulton	40208		1	1	18-Jul-01	CT4	CT	109	
Fulton	40208		1	1	18-Jul-01	RB1	RB	128	
Fulton	40356		1	23	18-Jul-01	CO1	CO	69	
Fulton	40356		1	23	18-Jul-01	CO2	CO	62	
Fulton	40356		1	23	18-Jul-01	CO3	CO	74	
Fulton	40356		1	23	18-Jul-01	CO4	CO	55	
Fulton	40356		1	23	18-Jul-01	CO5	CO	75	
Fulton	40356		1	23	18-Jul-01	CT1	CT	114	
Fulton	40356		1	23	18-Jul-01	CT2	CT	104	
Fulton	40356		1	23	18-Jul-01	CT3	CT	97	
Fulton	40356		1	23	18-Jul-01	CAS1	CAS	70	
Fulton	40356		1	23	18-Jul-01	CAS2	CAS	72	
Tahtsa	61775		7	14	02-Aug-01	BB1	BB	193	
Tahtsa	61773		1	11	31-Jul-01	MW1	MW	153	
Tahtsa	61778		3	18	31-Jul-01	LKC1	LKC	116	
Tahtsa	40208		1	1	18-Jul-01	DV1	DV	111	

Appendix 3.	List of Voucher S	Specimens submitted to	the Ministry	y of Sustainable Resources.
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SKR Consultants Ltd.

034

644



adult

August 21, 2001

To: Karen Campbell FRBC Co-ordinator, Houston Forest Products Ltd.

## RE: Quality assurance of phase 1-3 of the 1:20,000 reconnaissance fish and fish habitat inventory in the Morice Forest District.

#### Karen:

The stage 1 quality assurance (QA) review of the Morice fish and fish habitat inventory project has been completed. Resources Inventory Committee standard QA forms were filled-out during the audit and are included with this letter. These forms list objectives that were met and comments pertaining to any problems that were identified during the QA review.

As usual, I found no significant problems in the stream ILP designation, reach break analysis, or reach characteristics. There was a mis-match of NID numbers between the maps and databases, but as UTMs are already included in the database, this is a minor problem that SKR should be aware of. Reach forms had not been completed for sampled reaches. This will be checked during phase 5-6.

None of the lakes were labeled on the maps. ILP, waterbody ID, watershed code and NIDs for lakes were wither missing or wrong. With the exception of the Peter Aleck area lakes, which I was able to find using UTMs, I was unable to find most of the lakes in the database. This is an issue that must be addressed for the final maps.

As I discussed with SKR when they gave me the project, and as with previous years, I am unable to grant QA approval to the stream sampling plan. SKR's site selection methodology rejected 76% of the randomly selected sites with insubstantial justification. While I feel the resulting sampling plan will do a good job of describing fish distributions, the rejection of such a high proportion of the random sites is a glaring departure from RIC standards and cannot meet with QA approval. As with previous years, SKR will have to receive approval for this sampling plan outside the QA process.

With the exception of the lake map labels and the stream sampling plan, this project has passed QA evaluation. I will re-check the lakes during phase 5-6 and would ask SKR, as usual, to get an allowance from the contract monitor for their sampling plan. If you have any questions regarding the information presented in this memo or in the QA forms, please contact me by e-mail (schell@mail.bulkley.net) or by telephone (250-847-0180).

Sincerely,

Chris Schell QA/QC Monitor

cc. Regina Saimoto, SKR Environmental Consultants Ltd., BC

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM **Project name:** Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002 FRBC project number: 000108 MELP project number: HFP-SKR-001-2002

Submitted by:	SKR Environmer	ntal Consulting Ltd.	
QA review by:	Chris Schell	_Review date:	August 2001

#### **DELIVERABLE CHECKLIST FOR PRE-FIELD – PAGE 1 OF 1** FORM 1A

#### Check to ensure that a pre-field project planning report was received with all the associated deliverable products.

Deliverable	Hardcopy	Digital	Comments
1. Cover page	Y	Y	
2. List of digital products	Y	Y	no mention of ILP tables here.
3. Overview map	N	na	
4. FISS map	na	na	
5. Existing data review			
list of references	Y	Y	
list of contacts	Y	Y	
<ul> <li>new FISS information summary and products</li> </ul>	na	na	
6. ILP data*			
• ILP data sheets	Y	Y	
ILP maps	Y	Y	
• ILP information sent to ministry	not yet	not yet	
7. Interim maps*	Y	Y	
8. FDIS database	na	Y	
9. Sampling design sheets	N	Y	in FDIS
10. Aerial video record (optional)	na	na	
11. Project plan	Y	Y	

#### **Approved:** Yes

**Comments:** 

#### **Recommended actions:**

Have a nice day.

<sup>\*</sup> If ILP maps and ILP data sheets have been sent to the ministry for processing, ILPs must be shown on the interim maps to allow QA to proceed.

# FISH INVENTORY QUALITY ASSURANCE CHECK FORMHouston Forest Products - Fish and Fish Habitat Inventory 2001-2002000108MELP project number: HFP-SKR-001-2002

Project name:Houston Forest PrFRBC project number:000108MELP

Submitted by:	SKR Environmental Consulting Ltd	<u>d.</u>
QA review by:	Chris Schell Review date:	<u>August 2001</u>

## FORM 1B EXISTING DATA REVIEW – PAGE 1 OF 1

Deliverable	Deliverable check	Acceptable Y/N	Comments
List of contacts	Is list of contacts provided in acceptable format?	Y	Table 1 and table 2 are both titled "list of contacts"
	Have all relevant contacts for the project area in question been pursued?	Y	
	• If NO, report known important contacts not provided on list.		
Bibliography	Is bibliography provided in acceptable format?	Y	
	Does the bibliography adequately cover the information known to be available for the project area in question?	Y	
	<ul> <li>If NO, report known available information that was not provided in bibliography.</li> </ul>		
FISS information	Has FISS update information been provided for new sources of fisheries information that were not referenced in FISS as required in the contract:	na	FISS stuff is to be submitted with phase 5-6 deliverables
	FISS forms		
	clean NTS maps		
	• a copy of each new source provided		
	a reference to each new source     provided		
	If NO, report required information not provided.		

#### Approved: Y

#### Comments:

**Recommended actions:** 

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002 MELP project number: HFP-SKR-001-2002

FRBC project number: 000108

**Project name:** 

SKR Environmental Consulting Ltd.

Submitted by:	SKR Environmental Consulting Ltd.									
QA review by:	Chris Schell	_Review date:	August 2001							

#### COMBINED CHECK OF STREAM REACH DATA - PAGE 1 OF 6 FORM 1D

List of reaches checked (FDIS /maps/air photos) 1-3 Hay M., 4-5 Cliff, 6-9 Poplar, 10 Sweeney

	1	2	3	;		4		5		6		7		8	9	10
ILP	20800	20840	208	69	22	020	22	2097	12	2094	4	210	03	21034	21947	60649
Map	93e.097	93e.097	93e.(	096	93e	93e.096		93e.096		931.006		931.005		931.005	93e.096	93e.074
Reach #	10	2	2			1		1		1		2		2	1	1
F	for all reac	hes	-	1	2	3	4	5	6	7	8	9	10		Commen	ts
Watershed co ILP # and IL									x							n Marine Marine Marine Marine
ILP sheet, FI all match	DIS, ILP (o	r interim) ı	map													
NID # and N	ID map # 0	r		x	x	x	X	x	X	x	x	x	x	9)why	is UTM mi	ssing?
UTM (option do not includ							-									
TRIM map n	umber					·										·
Reach numbe																
Reach break	location															
Reach map sy	ymbol															
Map status	·															
Order						1			X							
Upstream/Do	wnstream	elevation				1								1		
Length																
Pattern	· · ·			<u> </u>	1											
Confinement																
AN/BR																
Basin type																
Total errors				1	1	1	1	1	3	1	1	1	1			
Shaded cell	errors			1	1	1	1	1	1	1	1	1	1			-
	Features	3		1	2	3	4	5	6	7	8	9	10	+	Commen	ts
NID and NID	) map num	ber										1	<u> </u>			
Map symbol					1		· · · · ·				<u> </u>	1	<u> </u>	1		
Total errors				1	1											
Shaded cell	errors	<u> </u>	C.										di se s			

-----

Note: Any error identified in a shaded cell constitutes a failure.

1-2) Record includes UTM but NID in FDIS and on map are different.

6) mouth of ILP is on 93e.096 the one in FDIS is 931.006.

## FISH INVENTORY QUALITY ASSURANCE CHECK FORM Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002

Project name: Houston FRBC project number: 000108

Submitted by:SKR EnvironQA review by:Chris Schell

Review date: August

August 2001

## FORM 1D CONTINUED – PAGE 2 OF 6

Reaches to be field sampled	1	2	3	4	5	6	7	8	9	10	Comments
BCG zone											
Setting											
Open water											
Coupling											
Valley flat											
Active floodplain											
Islands											
Bars											
Disturbance indicators											
Mass movement											
Riparian vegetation											
Exposed/Eroded											
Land use											
Total errors											

Comments:

**Recommended actions:** 

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002 Project name: MELP project number: HFP-SKR-001-2002 FRBC project number: 000108

Submitted by:	SKR Environmen	tal Consulting Ltd	÷
QA review by:	Chris Schell	_Review date:	<u>August 2001</u>

#### COMBINED CHECK OF STREAM REACH DATA - PAGE 3 OF 6 FORM 1D

List of reaches checked (FDIS /maps/air photos) 1-2 Sweeney, 3-4 Kasalka, 5-6 Cummins, 7-9 Tanglechain, 10 Bulkley

	1	2	3	4	5	6	7	8	9	10
ILP	60699	61778	51788	51913	51423	51464	40307	40314	40403	80004
Map	93e.075	93e.074	93e.065	93e.065	93e.055	93e.055	93L.089	93L.089	93L.089	931.038
Reach #	1	1	3	1	1	3	1	3	1	2

6.2

For all reaches	1	2	3	4	5	6	7	8	9	10	Comments
Watershed code or	1	1									
ILP # and ILP map #	X										
ILP sheet, FDIS, ILP (or interim) map all match											
NID # and NID map # or	x	X	x	x	x	X	X	X	x	X	je 
UTM (optional, but no errors allowed; do not include in marking scheme)											
TRIM map number									la de la del		
Reach number											
Reach break location	1			· · ·							
Reach map symbol							-				
Map status	1										
Order	1					Х					6) order should be 2
Upstream/Downstream elevation											
Length											
Pattern											
Confinement			1								
AN/BR											
Basin type											
Total errors	2	1	1	1	1	2	1	1	1	1	
Shaded cell errors	1	1	1	1	1	1	1	1	1	1	
Features	1	2	3	4	5	6	7	8	9	10	Comments
NID and NID map number		13			. <sup>1</sup>				a bata di K	- 14 - 14 - 1	
Map symbol											
Total errors	1										
Shaded cell errors											

Note: Any error identified in a shaded cell constitutes a failure.

1-10) all NIDs are different on FDIS than on the map

1) ILP map number is the map at the mouth of stream, which is on the next map.

## FISH INVENTORY QUALITY ASSURANCE CHECK FORM Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002

Project name: FRBC project number: 000108

MELP project number: <u>HFP-SKR-001-2002</u>

Submitted by: SKR Environmental Consulting Ltd. QA review by: Chris Schell

**Review date:** August 2001

#### Form 1D CONTINUED - PAGE 4 OF 6

Reaches to be field sampled	1	2	3	4	5	6	7	8	9	10	Comments
BCG zone											
Setting											
Open water											
Coupling											
Valley flat											
Active floodplain											
Islands											
Bars											
Disturbance indicators											
Mass movement											
Riparian vegetation											
Exposed/Eroded											
Land use											
Total errors	0	0	0	0	0	0	0	0	0	0	

Comments:

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM <u>Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002</u> : <u>000108</u> MELP project number: <u>HFP-SKR-001-2002</u>

FRBC project number: 000108

Project name:

Submitted by

SKR Environmental Consulting Ltd

Submitted by.	<b>DIGCEDIVITOIIIIOII</b>	ar consuming with	
QA review by:	Chris Schell	Review date:	August 2001

## FORM 1D COMBINED CHECK OF STREAM REACH DATA – PAGE 5 OF 6

List of reaches checked (FDIS /maps/air photos) 1-6 Buck, 7-10 Peter Aleck

	1	2	3			4		5		6			7	8	9	10
ILP	80048	80094	801	42	80	180	8	0208	3	8022	28	700	001	70018	70040	70056
Мар	931.038	931.037	93.0	27	931	.028	93	31.02	8	931.0	18	931.	006	931.006	931.006	931.006
Reach #	1	1	4			2		1		4		2	2	2	1	1
F	or all reac	hes		1	2	3	4	5	6	7	8	9	10		Comment	s
Watershed co	ode or						, ·						1	24.5		. 1
ILP # and IL	P map #			ľ				x						사용 (* 1975) 1975년		
ILP sheet, FI all match	DIS, ILP (o	r interim) r	nap												· · · · · · · · · · · · · · · · · · ·	
NID # and N	ID map # o	r		x	x	x	X	x	x	x	X	x	x			
UTM (option	-		ved;													
do not includ						- 										
TRIM map n	umber		:													
Reach number	T		<u></u>									1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1		-	
Reach break	location											1				
Reach map s	ymbol															
Map status																
Order																
Upstream/Do	wnstream	elevation														
Length																
Pattern													x	10) look	s straight t	to me
Confinement																
AN/BR																
Basin type																
Total errors				1	1	1	1	2	1	1	1	1	2			
Shaded cell	errors	-		1	1	1	1	1	1	1	1	1	1			
	Features			1	2	3	4	5	6	7	8	9	10		Comment	s
NID and NID	map numl	per			<b></b>					1						
Map symbol	<u> </u>									1						
Total errors										1						
Shaded cell (	errors									1						-

Note: Any error identified in a shaded cell constitutes a failure.

1-10) no NIDs on the maps

5) ILP map is supposed to be at the mouth, not the headwater. This is also a problem with 80207. Please check for other similar mistakes.

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM <u>Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002</u> <u>000108</u> MELP project number: <u>HFP-SKR-001-2002</u>

Project name: Houston FRBC project number: 000108

 Submitted by:
 SKR Environmental Consulting Ltd.

 QA review by:
 Chris Schell
 Review date:
 August 2001

## FORM 1D CONTINUED – PAGE 6 OF 6

Reaches to be field sampled	1	2	3	4	5	6	7	8	9	10	Comments
BCG zone	Γ										
Setting					[						
Open water											
Coupling											
Valley flat											
Active floodplain							ľ				
Islands											
Bars											
Disturbance indicators	Γ										
Mass movement											
Riparian vegetation											
Exposed/Eroded	T										
Land use											
Total errors	0	0	0	0	0	0	0	0	0	0	1

#### Comments:

7-10) coding as to which reaches are to be sampled do not follow the standards and the system of coloured stars is not noted in the legend.

#### **QA Summary**

	All r	eaches	Feature	s San	pled reaches			
Number of reaches sampled		30	0		0			
Number of marks (N reaches sampled × attributes)	N×15	450	N×2	N×13	351			
Maximum errors acceptable (12% of marks)		54			0			
Number of errors found		36			0			
Is the number of errors acceptable (Y/N)	1	Y			Y			
Number of errors in zero-tolerance attributes		30			0			

#### Approved: Y

#### **Recommended actions:**

Deal with this NID issue, if relevant. Otherwise correct the few errors I found. Please examine for a systematic problem with the ILP maps numbers. Make sure the map that the mouth is on is the ILP map.

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM <u>Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002</u> mber: <u>000108</u> MELP project number: <u>HFP-SKR-001-2002</u>

FRBC project number: 000108

Project name:

SKB Environmental Consulting Ltd

Submitted by:	SKR Environment	al Consulting Ltd.	
QA review by:	Chris Schell	Review date:	August 2001

	1	2	3		4		5	5		6		7	8	9	10
WBID or ILP	632 FRAN	581 FRAN	1568 UNR		165 UNF	- 1	16 UN		80	245	8	0248	01808 BULK	908 UNRS	890 UNRS
Reach #	3	20	2		2			4		2		2	3	2	4
Map #	931.006	931.006							93	1.037	93	31.027			
	Attribute		1	2	3	4	5	6	7	8	9	10		Comment	s
Official nam	e														
Alias or loca	l name														
WSC and wa	terbody identi	fier "or"	X	X	X	X	X	X	X	X	X	X			
ILP number	and ILP map n	umber		1.1				7944 							
NID # and N	ID map #														
Reach numb	er														
Basin type															
Group															
Class (P/S)															
Genesis															
Surface area															
Magnitude															
Biogeoclima	tic zone													-	
Wetland															
Total errors	for each lake		1	1	1	1	1	1	1	1	1	1			

Hereit

#### **QA Summary**

		Lakes
Number of lakes sampled	10	
Number of marks (N lakes sampled x attributes)	N×13	130
Maximum errors acceptable (12% of marks)	15.6	
Number of errors found	10	
Is the number of errors acceptable (Y/N)	no	
Number of errors in zero-tolerance attributes	10	

## Approved: N

#### Comments:

1-2) No lake labelling on the maps for these projects. The only way I found these lakes was by the UTMs. Buck, Whitesail, Tahtsa and others: None of the lakes are labeled with either ILPs or WSCs, there are no UTM grids on the map, the maps themselves are not labeled (Buck only), and there are no NIDs in the databases, so I can not find any of the lakes on the maps.

#### **Recommended actions:**

The lakes require map labels. I was unable to check most of these lakes.

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002

Project name:Houston Forest Products - Fish and Fish Habitat InvenFRBC project number:000108MELP project number:HFP-SKR-001-2002

 Submitted by:
 SKR Environmental Consulting Ltd.

 QA review by:
 Chris Schell
 Review date:
 August 2001

FORM 1G

## **STREAM SAMPLING DESIGN – PAGE 1 OF 1**

	Acceptable (Y/N)	Comment
Is the inventory watershed based (i.e., entire watershed)?	Y	
Are <b>random</b> reaches selected for sampling based on the FDIS statistical sampling design?	N	yes but 76% of the random sites are rejected for sampling
For low gradient or small/medium sized streams, is the sample size of reaches $\geq 8$ ?	Y	
For higher gradient (20–30%) or large sized streams, is the minimum sample size 2 and maximum 25?	Y	
Are discretionary reach samples included?	Y	
above or below barriers	Y	suspected barriers
adjacent to identified cutblocks	Y	
• major inlets and outlets to secondary lakes	Y	
• of inlets and outlets to primary lakes	Y	
• to achieve connectivity within sub-basins for fish distribution and identification of upstream limits.	Y	
Are proposed reach sample sites shown on TRIM maps with solid and dashed green lines?	Y	
Are planning tables complete with gear and voucher requirements indicated?	na	
Does the distribution of sample sites adequately represent all basin types and basin connectivities.	Y	as much as possible with the current sampling rates
Is the overall sampling rate (sample number vs total number of low gradient reaches) acceptable?	Y	
Does the sample design adequately cover the requirements for a reconnaissance inventory?	N	

Note: Any error identified in a shaded cell constitutes a failure.

#### Approved:

#### Comments:

The rejection of 76% of the randomly selected sites without sufficient justification is not acceptable under RIC standards.

#### **Recommended actions:**

Y

As with previous years, permission to proceed with a non-RIC standard sampling plan must be attained from the contract monitor or other appropriate Ministry representative.

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM <u>Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002</u> mber: <u>000108</u> MELP project number: <u>HFP-SKR-001-2002</u>

FRBC project number: 000108 MELP pr

 Submitted by:
 SKR Environmental Consulting Ltd.

 QA review by:
 Chris Schell
 Review date:
 August 2001

FORM 1H

Project name:

LAKES SAMPLING DESIGN – PAGE 1 OF 1

	Acceptable (Y/N)	Comment
Is the lakes planning table complete and accurate (including classification of lakes as primary, secondary or not sampled)?	Y	
Will all identified primary lakes be sampled?	N	
Is there at least one lake from each lake group identified that will be sampled?	N	
Will at least 20% of all identified secondary lakes be sampled?	na	
Is justification provided for those lakes that will not be sampled?	na	
Are lakes proposed for sampling outlined on TRIM maps with solid and dashed green lines?	Y	
Are planning tables complete with gear and voucher requirements indicated?	na	
Does the sample design adequately cover the requirements for a reconnaissance inventory? If no, the sampling design is rejected.	Y	Lake sampling is appropriate considering previously existing data for these areas.

Approved: Y Comments:

**Recommended actions:** 

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM Houston Forest Products - Fish and Fish Habitat Inventory 2001-2002

Project name:Houston Forest Products - Fish and Fish Habitat InvenFRBC project number:000108MELP project number:HFP-SKR-001-2002

 Submitted by:
 SKR Environmental Consulting Ltd.

 QA review by:
 Chris Schell
 Review date:
 August 2001

FORM 1

## **PROJECT PLAN – PAGE 1 OF 1**

	Acceptable (Y/N)	Comment
Does the project plan cover field inventory procedures?	Y	
Does the project plan cover data compilation?	N	
Does the plan cover reporting requirements?	N	
Does the plan include proposed staff for field phase?	N	
Has existing data been considered and used in the project plan?	Y	
Have sampling intentions of relevant WRP projects or other inventory project requirements been incorporated into the plan to avoid duplication?	Y	
Has the plan integrated the sampling of lake and stream habitats, in particular, with any aerial over flights and sampling of lake tributaries?	Y	
Have requirements for effective sampling methods in relation to stream reach and lake types been addressed?	Y	
Have requirements for biological and water samples been properly considered?	Y	
<ul> <li>water sampling particularly in primary lakes</li> </ul>	Y	
fish voucher specimens	Y	
• other samples.		
Does and should the plan incorporate any special fish species level inventory needs on a provincial or regional scale?	Y	
Are budget and schedule adequate to complete the project as planned?	na	
If the answer to any of the above is no, is this going to	N	project plan is accepted
have an impact on the inventory project? If so, the project plan is rejected.		

#### Approved:

Comments:

Usually a short paragraph or two outlining data entry methods and report formats is included.

#### **Recommended actions:**

Y

## rsaimoto

-15

From: To: Cc: Sent: Subject:	"Jessop, Mathew ELP:EX" <mojessop@envgate.env.gov.bc.ca> "SKR" <rsaimoto@bulkley.net> <karen_balkwill@weldwood.com> October 17, 2001 10:15 AM Meeting of October 10</karen_balkwill@weldwood.com></rsaimoto@bulkley.net></mojessop@envgate.env.gov.bc.ca>
Hello Ron a	
After writing	g up and reading my notes and discussing them with Paul these are the comments I have.
	e that we are in a difficult position now that the field work has been done without a pre-field meeting (which was not ence and I'm sure not yours either).
have provid date. It is i types of rea	elt that more attention could have been paid to assessing the smaller, first order, high elevation reaches. This would ded more data for not just the FHAT20 modelling tool, but any other modelling tool that might be developed at a later important to have all reach types represented during the initial sampling and data gathering phase, that way those ach (in this case - high gradient, higher elevation, likely poor fish habitat) will be represented in the output of any future fish habitat or production model. While you and I realise that based on experience, those reaches are likely dry, ned and probably don't contain fish, we need to prove it by sampling them.
nice if the h been more label indica unit, I can f	estion - I have been looking at the maps submitted as the deliverables from SKR's previous projects and it would be historical info could be more specific. Instead of referring the user to another report and set of maps it would have useful if the actual info could have been displayed. I've seen maps with a symbol denoting a historical site and a ating what fish, if any, were captured at that site. As newer maps come in for the same operational area or landscape file older, redundant ones in the archive (a dusty aisle behind Jeff Lough's desk). Now that you guys are doing your aps this can be more easily addressed.
	is the ILP label location goes, I like the way Ron described it - label at the u/s end of the stream except when the on more than one TRIM tile. I approve the use of this convention for the maps.
I hope thes	se comments help out with future work. Thanks for coming in and meeting with me.
If you have	e any questions or comments please call or email me.
Regards, M	Natt.
Ministry of Prince Rup	nventory Specialist Sustainable Resource Management pert Region
Bag 5000, Tel. (250) Fax (250)	

August 2, 2001

Chris Schell M.Sc., R.P.Bio Box 4695 Smithers BC V0J 2N0

Karen Campbell, FRBC Co-ordinator, Houston Forest Products Box 5000 Houston BC V0J 2Z0

#### Karen:

The stage 2 quality assurance (QA) audits of the 1:20k stream inventory field data collection performed by SKR Environmental Consultants Ltd. has been completed. Resources Inventory Committee standard QA forms were completed during the audit and are included with this letter. These forms list objectives that were met and comments pertaining to any problems that were identified during the QA evaluation.

The audit of stream sites went very well and the crew demonstrated an ability to collect data for the site card and fish collection card. I had discussions with different crew members concerning various aspects of data collection and was satisfied with their responses. The audit of the lake sampling also found no departures from RIC standards. All field QA requirements were met with no additional comments.

This letter concludes the stage 2 QA audit and reporting. If you have any questions regarding the information presented in this memo or in the QA forms please contact me by e-mail (schell@bulkley.net) or by telephone (250-847-0180).

Sincerely,

Chris Schell Quality Assurance Monitor Fish and Fish Habitat Inventory

cc. Ron and Regina Saimoto, SKR Environmental Consultants Ltd., Smithers, BC

#### FISH INVENTORY QUALITY ASSURANCE CHECK FORM HFP 1:20k Aquatic Inventory - 2000 Project name: FRBC project number: MELP project number: SKR Environmental Consultants Ltd. **Contractor:**

Field audit by:

Chris Schell

Site identifier: na Field audit date: July 2000

#### FORM 2A FIELD AUDIT: CREW INFORMATION, PERMITS AND SAFETY

**Crew** information

Crew members' names	Listed in contract or plan	Area of expertise (bio, geo, other)	Fi	rst aid	Electrofishing	
			Level 1	Transport- ation	Crew member	Crew leader
Ron Saimoto	Y	Bio	Y	Y		Y
Mark LeRuez	Y	Bio	Y	Y		Y
Neal Foord	Y	Bio	Y	Y		Y
Doug McKay	Y	Bio	Y	Y		Y

QA comments about crew and/or certifications:

#### Permits and safety equipment

		Acce	ptable	
Group	Item			Specify problem
		Y	N	
Permits	MELP fish collection permit	Y		
	DFO fish collection permit	Y		
Safety plan	Safety plan in place	Y		
	Is safety plan followed	Y		

QA comments about permits and safety:

Note: If any obvious WCB regulations are contravened, the QA team must immediately inform the responsible contract manager and the ministry representative.

Field Audit Confirmation Field audit leader: <u>Chris Schell</u> For field crew: <u>All</u>

<b>1</b> 0						<b>8</b>							
Project	nomo:	HEF	2 1.20L A	austic I	FISH I	RY QUA	LITY AS	SURANC	е Снеск	Form			
•	name. project num		1.20K A			P project	number:						
Contrac Field au			<u>R Enviro</u> is Schell		<u>Consultar</u> ite identif	 Field a	ıdit date:	July 200	2	_			

### FORM 2B FIELD AUDIT FOR STREAM SURVEYS: SITE CARD PROCEDURES CHECK – PAGE 1 OF 2

Materials present in field	Y	N	Notes
Site cards	Y		
Field reference materials	Y		
Field maps	Y		

List equipment used	Calibrated (Y/N)	Proper use (Y/N)	Notes
pH – electric meter (pH tester 3)	Y	Y	
Conductivity – electronic meter	Y	Y	
Temperature – alcohol therm.	na	Y	

		Accep	otable	
Group	Item	Tech.	Data	Notes
Site selection	Representative site	Y	Y	
Reference	Stream name (Gaz)	Y	Y	
	Alias	Y	Y	
	WSD code or	Y	Y	
	ILP # and ILP map #	Y	Y	
	Map NID and NID map #	Y	Y	
	Field UTM (and method)	Y	Y	
	Reach number	Y	Y	
	Site number	Y	Y	
	Site length (and method)	Y	Y	
	Access	Y	Y	
	Date, time	Y	Y	1
	Agency	Y	Y	1
	Crew	Y	Y	
	Fish form	Y	Y	
Channel	Equipment	Y	Y	
	Channel widths	Y	Y	
	Wetted widths	Y	Y	

Notes:	Notes:

Field audit leader: Chris Schell

For field crew: ALL

### FORM 2B CONTINUED – PAGE 2 OF 2

		Acce	ptable	
Group	Item	Tech.	Data	Note
Channel	Residual pool depth	Y	Y	
(continued)	Bankfull depth	Y	Y	
	Gradient	Y	Y	
	Stage	Y	Y	
	NVC; Dry/Int; DW; Tribs	Y	Y	
Cover	Total cover	Y	Y	
	Cover elements			
	• amount	Y	Y	{
	location	Y	Y	
	Crown closure	Y	Y	
	Large woody debris	Y	Y	
	function	Y	Y	
	distribution	Y	Y	
	Instream vegetation	Y	Y	
	Left and right bank shape	Y	Y	
	Texture	Y	Y	
	Riparian vegetation	Y	Y	
	Stage	Y	Y	
Morphology	Flood signs	Y	Y	
	Bed material	Y	Y	
	D95	Y	Y	
	D	Y	Y	
	Morhpology	Y	Y	
	Disturbance indicators	Y	Y	
	Channel pattern	Y	Y	

		Accer	otable	
Group	Item	Tech.	Data	Notes
Morphology	Islands	Y	Y	
(cont.)	Bars	Y	Y	
	Coupling	Y	Y	
	Confinement	Y	Y	
Water	Equipment	Y	Y	
	Temperature	Y	Y	
	рН	Y	Y	
	Conductivity	Y	Y	
	Turbidity	Y	Y	
Features	NID map #, NID	Y	Y	
	Туре	Y	Y	
	Height, length	Y	Y	
	Photo	Y	Y	
Habitat	Keywords	Y	Y	
quality	Relevant comments	Y	Y	
	FSZ	Y	Y	
Photodocu-	Roll #	Y	Y	
mentation	Photo #	Y	Y	
	Focal length	Y	Y	
	Direction	Y	Y	
	NID #, NID map #	Y	Y	
	UTM and method	Y	Y	
Wildlife	Group	Y	Y	
	Relevant comment	Y	Y	

Notes:

Field Audit Confirmation:
Field audit leader: <u>Chris Schell</u>
For field crew: <u>ALL</u>

Project name:	HFP 1:20k Aquatic Inventory - 2000
FRBC project number:	MELP project number:
Contractor:	SKR Environmental Consultants Ltd.
Field audit by:	Chris Schell Site identifier: na Field audit date: July 2000

## FORM 2C

## FIELD AUDIT FOR LAKE SURVEYS: LAKE SURVEY PROCEDURES CHECK – PAGE 1 OF 3

Materials present in field	Y	N	Notes
Lake survey forms	Y		
Field data reference	Y	[	
Lake outline maps	Y		
Field maps	Y		

List equipment used and available	Calibrated (Y/N)	Proper use (Y/N)	Notes
pH - pocket meter	Y	Y	
conductivity - pocket meter	Y	Y	
Temp/ oxygen (Oxyguard MK2)	Y	Y	

		Acce	Acceptable		
Group		Tech.	Data	Notes	
Waterbody	Class of wetland or lake	Y	Y		
	Fish collection form	Y	Y		
	Lake name (Gaz, local)	Y	Y		
	Watershed code or	Y	Y		
	ILP#, ILP map #	Y	Y		
	Waterbody ID	Y	Y		
	Reach #	Y	Y		
	Project ID	Y	Y		
	NID map #, NID #	Y	Y		
	UTM	Y	Y		
	Magnitude	Y	Y		
	Surface area, source	Y	Y		
	TRIM map #, year	Y	Y		
	Air photo reference	Y	Y		
	Elevation, source	Y	Y		
	Biogeoclimatic zone	Y	Y		
Terrain	Setting	Y	Y		
characteristics	Aspect	Y	Y		
	Hillslope coupling	Y	Y		

Notes:

Field Audit Confirmation:

Field audit leader: Chris Schell

For field crew: Ron S. and Mark L.

### FORM 2C CONTINUED – PAGE 2 OF 3

		Acce	Acceptable		
Group	Item	Tech.	Data	Notes	
Terrain	Lake basin genesis	Y	Y		
characteristics	Land use %	Y	Y		
Shoreline	Shoreline type %	Y	Y		
characteristics	Cover	Y	Y		
	Recreational features	Y	Y		
Inlets/Outlets	Inlets/outlets (#)	Y	Y		
	Inlet spawning	Y	Y		
	List of inlets/outlets	Y	Y		
	Watershed code or	Y	Y		
	ILP #, ILP map #	Y	Y		
Survey	Start, end dates	Y	Y		
information	Agency	Y	Y		
	Crew	Y	Y		
Access	Mode (air/road)	Y	Y		
	Auto within	Y	Y		
	Off road and distance	Y	Y		
	Trail, distance	Y	Y		
	Closest community	Y	Y		
	Comments	Y	Y		
Aquatic flora	Emergent vegetation	Y	Y	1	
	Dominant species	Y	Y		
	Submergent vegetation	Y	Y		
	Dominant species	Y	Y		
	Floating algae	Y	Y		

		Acce	Acceptable			
Group	Item	Tech.	Data	Notes		
Aquatic flora	Species list	Y	Y			
(continued)	Voucher specimens	Y	Y			
Lake	Equipment	Y	Y			
bathymetry	Bathymetry techniques	Y	Y			
	Bathymetric data recording	Y	Y			
	Type of survey	Y	Y			
	Littoral area	Y	Y			
	Maximum depth	Y	Y			
	Benchmark height	na	na			
	Benchmark type/location	na	na			
	Maximum water level	Y	Y			
Photodocu-	Roll #	Y	Y			
mentation	Photo #	Y	Y			
	Focal length	Y	Y			
	Direction	Y	Y			
	NID #, NID map #	Y	Y			
	UTM and method	Y	Y			
Aquatic	Group	Y	Y			
wildlife	Species/Comments	Y	Y			
Weather	Visual observations	Y	Y			
Limnological	Properly located	Y	Y			
station	Equipment	Y	Y			
	Station no.	Y	Y			
	Date, time	Y	Y			
	UTM			NID		
	EMS no.	Y	Y			

Notes:

Notes:

Field Audit Confirmation:

Field audit leader: Chris Schell

For field crew: Ron S. and Mark L.

#### FORM 2C

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#### 2C CONTINUED – PAGE 3 OF 3

Notes:

		Acce	ptable		
Group	Item	Tech.	Data	Notes	
Limnological station (cont.)	Secchi depth	Y	Y		
	Water colour	Y	Y		
	pH (surface and bottom)	Y	Y		
	Ice depth	Y	Y		
Water samples	Depth	Y	Y		
	Requisition #	Y	Y		
	Processing, labeling and transport to lab	Y	Y		
Profiles	Depth	Y	Y		
	Dissolved oxygen	Y	Y		
	Temperature	Y	Y		
	Conductivity	Y	Y		
	H <sub>2</sub> S presence	Y	Y		
Equipment used		Y	Y		

Field Audit Confirmation: Field audit leader: <u>Chris Schell</u>

For field crew: Ron S. and Mark L.

**Project name:** 

HFP 1:20k Aguatic Inventory - 2000

FRBC project number:

MELP project number:\_\_\_\_

SKR Environmental Consultants Ltd. **Contractor:** 

Chris Schell \_\_\_\_\_ Site identifier: \_\_\_\_\_ Field audit date: \_\_\_\_\_ 2000 Field audit by:

## Form 2D

#### FIELD AUDIT: FISH COLLECTION CHECK - PAGE 1 OF 3

Materials present in field	Y	N	Notes
Fish collection forms	Х		
Individual fish data forms	X		
Field data reference	X		
Field key to freshwater fishes of BC	x		
Approved electroshocker	x		
Ancillary fish capture equipment (buckets, dip nets, stop net)	x		
Measuring board/ruler	x		
Weigh scale	X		
Fish samples (e.g., scale envelopes, tissue vials)	х		
Voucher containers, preservative, labels	x		

		Acceptable			
Sa	mpling technique	Y	Ν	Notes	
Lakes	Number and duration of gill nets set	Y			
	Number and duration of minnow traps set	Y			
	Other	Y			
Streams	Site selection and length	Y			
	Number and duration of minnow traps set	Y			
	Other				
Electrofisher	Tilt/safety switch	Y			
function	Main power switch	Y		generator	
	Anode deadman's switch	Y			
	Quick release harness	Y			
	Anode clean	Y			
Electrofishing	Safe operation and signals	Y			
techniques	Site coverage – all habitats	Y			
	Effective fish capture	Y			
	Impact on fish	Y			
Fish handling	Impacts on fish	Y			

Notes:

Field Audit Confirmation: Field audit leader: \_Chris Schell For field crew: All  

FORM 2D	CONTINUED - PAGE 2 OF	3		
		Accept	table	
Sa	ampling technique	Y	N	Notes
Fish	Correct identification	Y		
identification	Correct use of fish key	Y		
	Unidentified fish procedure	Y		
Fish samples	Age sampling, labeling	na		
	Voucher storage, labeling	na		
		Acce	otable	
Group	Item	Tech.	Data	Notes
Header	Name	Y	Y	
	Stream/Lake/Wetland	Y	Y	
	Watershed code or ILP	Y	Y	
	Waterbody ID	Y	Y	
	ILP map #	Y	Y	
	Project ID	Y	Y	
	Reach #	Y	Y	
	MELP fish permit #	Y	Y	
	Date start, end	Y	Y	
	Agency, crew	Y	Y	
	Resample	Y	Y	
Site/Method	Site #	Y	Y	
	NID map #, NID #	Y	Y	
	Site UTM	Y	Y	
	Method, method no.	Y	Y	
	Temp, cond., turbidity	Y	Y	ł

		Accer	otable	
Group	Item	Tech.	Data	Notes
Fish summary	Site #	Y	Y	
	Method, method no.	Y	Y	
	Haul/Pass (H/P)	Y	Y	
	Species, stage, total #	Y	Y	
	Min. length	Y	Y	
	Fish activity	Y	Y	
Gear	Site #	Y	Y	
specifications	Method, method no.	Y	Y	
	Haul	Y	Y	
	Date, time in	Y	Y	
	Date, time out	Y	Y	
	Net type, length & depth	Y	Y	
	Mesh size	Y	Y	
	Set, habitat	Y	Y	
Electrofisher	Site #	Y	Y	
specifications	Method, method no.	Y	Y	
	Pass	Y	Y	
	Time in, time out	Y	Y	
	EF sec.	Y	Y	
	Length, width	Y	Y	
	Enclosure	Y	Y	
	Voltage, freq., pulse	Y	Y	
	Make, model	Y	Y	
Individual	Fish collection form #	Y	Y	
fish data	Site #	Y	Y	

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Notes:

Notes:

Field Audit Confirmation:

Field audit leader: <u>Chris Schell</u>

For field crew: \_All \_

## FORM 2D CONTINUED – PAGE 3 OF 3

Notes:

2

4

		Acce	otable	
Group	Item	Tech.	Data	Notes
Individual	Method, method no.	Y	Y	
fish data	Haul/Pass	Y	Y	
continued	Species	Y	Y	
	Length	Y	Y	
	Weight	na	na	
	Sex	na	na	
	Maturity	na	na	
	Age structure	na	na	
	Age sample #	na	na	
	Age	na	na	
	Voucher	na	na	
	Genetic structure	na	na	
	Genetic sample #	na	na	
	Photos	na	na	
	Number of fish sampled	na	na	

Notes:

100

Field Audit Confirmation: Field audit leader: <u>Chris Schell</u> \_\_\_\_\_ For field crew: <u>All</u> \_\_\_\_\_

.

February 22, 2002

Karen Balkwill Houston Forest Products Co. Box 5000 Houston, BC, V0J 1Z0

#### <u>Re: QA of phase 5-6 deliverables for Fish and Fish Habitat Inventory performed by SKR</u> <u>Consulting Ltd. for Houston Forest Products Co.</u>

Karen,

The stage 3 quality assurance (QA) review of the final deliverables for the 1:20k stream inventory performed by SKR Consulting Ltd. has been completed. Resources Inventory Committee standard QA forms were completed during the audit and are included with this letter. The forms list objectives that were met and comments pertaining to any problems that were identified during the QA evaluation.

The deliverables package was generally complete. I needed to contact SKR for the digital mapping proximity test. This identified a few errors which SKR has now dealt with. The site card and site fish collection and FDIS consistency check found very few errors, well within acceptable limits. However, the wrong lake summary symbol was placed for one of the lakes and this created an unacceptable number of errors lake cards. All quick fixes, and no systematic problems.

SKR had made a few changes to the FDIS database (fdisdat.mdb). I forwarded it Lynn Miers (MSRN, data management branch) to for her to review. She has stated that the database is OK as it is, but would ask SKR to contact her in the future if they change the database further. It is possible for them to change the database to the point that importing it into ministry would be very problematic.

The check of the lake and watershed reports found only a few errors, all of which are listed on the appropriate QA form. The photodocumentation package was complete and the FISS deliverables were to standards of content and format.

The project maps are well done considering it's SKR's first year doing their own maps. Never the less, both HFP and myself found errors that will require correction. These are mostly limited

to incomplete, or incorrect interpretive coding, a few missing site symbols, and reach breaks that required rotating. All in all though, relatively few errors, and they are all marked on the maps.

With one exception, the map is a mix of project and interpretive formats similar to that used by most inventory projects in the region now. The exception is that SKR only provides reach information for the sampled reaches. I would suggest that SKR puts at least gradient on each reach in the project area. A full reach data symbol is not required, simply a coloured number (the gradient) placed along the stream channel. This takes up very little space on the map, and adds a great deal of useful information to the interpretative product. M. Jessop and P. Giroux both support this suggestion, it's a similar format to most other maps being produced in the region, and it would make the maps a great deal more useful for all users, HFP included.

I would ask SKR to respond to the QA with a letter, addressing each comment point by point. Once we have agreed how each comment will be addressed, I can give QA approval and SKR can proceed to project completion. If you have any questions regarding the information in this letter or in the QA forms please contact me by e-mail (schell@bulkley.net) or by phone (847-0180).

Sincerely,

Chris Schell

cc. Ron and Regina Saimoto, SKR Consultants Ltd., Smithers, BC

Project name: FRBC project number:		01/2002 – Fish and Fish Habitat Inventory MELP project number: <u>HFP-SKR-001-2002</u>
Contractor: QA review by:	SKR Consultants Ltd	Review date: February, 2001

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## FORM 3A DATA COMPILATION AND REPORTING DELIVERABLES FOR QA – PAGE 1 OF 1

	Deliverable	Hardcopy	Digital	Comments
Watershed	Watershed report	Y	Y	Is the CD readable
reporting	Appendices			
	I. FDIS summary and photographs	Y	Y	
	II. Hardcopy maps	Y	Y	
	Attachments			
	I. Pre-field planning document	-	-	Submitted with phase 1-3
	II. Field notes and forms	Y	na	
	III. Fish aging structures	Y	na	
	IV. Fish samples and vouchers	N	na	
	V. Photodocumentation	Y	Y	
	VI. Digital data	Y	Y	
	VII. FISS update data	Y	Y	
	VIII. Aerial photography	na	na	
Individual lake	Lake report	Y	Y	
reporting	Appendices			
(for each lake)	I. Lake survey form	Y	Y	
	II. Water chemistry data	na	na	
	III. Fish collection forms	Y	Y	
	IV. Tributary summary	Y	Y	
	V. Photographs	Y	Y	
	VI. Bathymetric map	na	na	
	Attachments			
	I. Photodocumentation	Y	Y	
	II. Digital data	na	Y	
	III. FISS update data	Y	na	
	IV. Phase completion reports	Y	Y	
	V. Field notes and forms	Y	na	
	VI. Aerial photography	Y	ny	
	VII. Fish ageing structures	Y	na	
	VIII. Fish samples and vouchers	Y	na	

Project name:	Houston Forest Products Co 2001/2002 – Fish and Fish Habitat Inventory									
FRBC project number:	CON0001398	MELP project number: <u>HFP-SKR-001-2002</u>								
Contractor:	SKR Consultants Ltd.									
QA review by:	Chris Schell	Review date: February, 2001								

Form 3b

#### **DIGITAL DATA CHECKING – PAGE 1 OF 1**

#### For each FDIS file provided:

#### FDIS filename:

	Acceptable		
			Comments
	Y	N	
Conversions done:			
ILP to WSC	Y		not expected at this time
• NID-UTM	Y		GIS derived UTMs are in FDIS
Update bathymetry	na		
FDIS QA report attached			
Acceptable error report	Y		see comment below

#### For each FDIS file and digital map file set:

#### **ARCView fish QA tool**

		Acce	ptable	
	Filename			Comments
		Y	N	
Digital map files				
<ul> <li>Metadata table</li> </ul>	various	Y		
• Map attributes table	various	Y		
FDIS data check				
<ul> <li>Sequential reach numbering:</li> </ul>		Y		
<ul> <li>Point locations on TRIM streams:</li> </ul>		Y		
Copy of ARCView fish QA tool error report attached				
<ul> <li>Acceptable error report</li> </ul>		Y		

Whiting and Rhine CD data. Something is going on with this CD and/or my reader. A portion of the disk shows up as filled with data but it's blank in Windows explorer. Check and see if there's any problems at your end. The others CDs are all fine.

Project name: FRBC project number:		/2002 – Fish and Fish Habitat Inventory MELP project number: <u>HFP-SKR-001-2002</u>
Contractor: QA review by:	SKR Consultants Ltd	Review date: February, 2001

# Form 3c

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## CONSISTENCY CHECK: STREAM CARDS, FDIS, PROJECT, INTERPRETIVE MAPS PAGE 1 OF 6

1-3) Babine Lake, 6-10) Nadina

	1	2	3	4	5	6	7	8	9	10
Site #	5	17	30	9	17	23	34	42	52	69
NID map #	93L.99	93L.089	93L.089	93E.097	93E.096	93E.096	93E.096	93E.096	93E.095	93E.096
NID #	46113	46126	46141	6179	6191	6151	6141	6219	6118	6187

**Record errors below with an 'x.'** An error occurs if there is any inconsistency among: 1) field site cards, 2) FDIS, 3) project maps and 4) interpretive maps, as specified for each attribute.

Card		Where to											Error
section	Attribute	check	1	2	3	4	5	6	7	8	9	10	locations
Header	Stream name	1, 2, 3, 4											
	Watershed code or ILP map # and ILP #	1, 2, 3, 4											
	NID map # and NID #	1, 2											
	Reach #	1, 2, 3, 4											
	Site #	1, 2, 3, 4											
	Site length	1, 2											
	Access	1, 2											
	Survey date	1, 2, 3, 4											
	Agency conducting survey	1, 2, 3, 4											
	Time of survey	1, 2											
	Crew conducting survey	1, 2											
	Fish form completed	1, 2											
Channel	Channel width	1, 2, 3, 4											
	Wetted width	1, 2											
	Residual pool depth	1, 2											
	Gradient	1, 2, 3, 4											
	Bankfull depth	1, 2		X									
	Stage	1, 2											
	No Vis. Ch., DW, and Dry/Int.	1, 2, 3, 4											
	Tribs	1, 2, 3, 4											
Cover	Total cover	1, 2											
	Cover elements	1, 2											
	Functional LWD (amount, distribution)	1, 2								Χ			
	Crown closure	1, 2											
	Instream vegetation	1, 2			X								
	Bank shape, texture, riparian vegetation	1, 2											

Card section	Attribute	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Water	EMS #	1, 2, 3, 4											
	Temperature, pH	1, 2											
	Water chemistry requisition #	1, 2											
	Conductivity, turbidity	1, 2											
Channel -	Flood signs	1, 2											
morpho	Bed material	1, 2, 3											
logy	D95, D	1, 2		X							_		
	Morphology	1, 2, 3	X										
	Disturbance indicators	1, 2, 3											
	Pattern	1, 2, 3	Γ										
	Islands, bars, coupling	1, 2	Γ										
	Confinement	1, 2, 3	Γ										
Features	NID map # and NID #	1, 2	Γ										
	Type, height/length	1, 2, 3, 4	Γ									-	
	Photo, comments	1, 2, 3, 4	1										
	UTM	1, 2	$\square$										
Habitat	General comments	1, 2	Γ										
quality	Fisheries sensitive zones	1, 2	Γ										
Photo-	Roll #	1, 2								-			
documen-	Frame #	1, 2											
tation	Focal length	1, 2	Π										
	Direction	1, 2											
	Comments	1, 2	Π						X				
Wildlife	Group	1, 2	Π										
	Observations	1, 2											
Comments	General comments	1, 2							X				
Total errors	:		1	2	1	0	0	0	2	1	0	0	7

### FORM 3C CONTINUED – PAGE 2 OF 6

#### **Comments:**

1) morphology is LC on card and in FDIS but NS on map.

2) typo. Card says 0.15, FDIS has 0.5 for Wb Dp. D90 and D95, card has fines, FDIS has 10.0.

3) A & M on card, blank in FDIS.

7) card states site is 140m us of HT Creek, FDIS states HT-Lake. FDIS is wrong.

8) typo; cards has C, FDIS has E

Project name: FRBC project number:		/2002 – Fish and Fish Habitat Inventory MELP project number: <u>HFP-SKR-001-2002</u>
Contractor: QA review by:	SKR Consultants Ltd Chris Schell	Review date: February, 2001

## FORM 3C

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#### CONSISTENCY CHECK: STREAM CARDS, FDIS, PROJECT, INTERPRETIVE MAPS PAGE 3 OF 6

1-4 Nadina, 5-7 Peter Aleck, 8-10 Buck Creek

	1	2	3	4	5	6	7	8	9	10
Site #	74	86	93	105	6	18	25	2	11	22
NID map #	93E.096	93L.005	93L.095	93E.096	93L.006	93L.006	93L.006	93L.037	93L.038	93L.037
NID #	6208	6198	6241	6172	34022	34033	34046	91021	91076	91034

Card		Where to											Error
section	Attribute	check	1	2	3	4	5	6	7	8	9	10	locations
Header	Stream name	1, 2, 3, 4											
	Watershed code or ILP map # and ILP #	1, 2, 3, 4											
	NID map # and NID #	1, 2											
	Reach #	1, 2, 3, 4											
	Site #	1, 2, 3, 4											
	Site length	1, 2											
	Access	1, 2											
	Survey date	1, 2, 3, 4											
	Agency conducting survey	1, 2, 3, 4											
	Time of survey	1, 2											
	Crew conducting survey	1, 2											
	Fish form completed	1, 2								X			
Channel	Channel width	1, 2, 3, 4											
	Wetted width	1, 2											
	Residual pool depth	1, 2											
	Gradient	1, 2, 3, 4		X									
	Bankfull depth	1, 2											
	Stage	1, 2											
	No Vis. Ch., DW, and Dry/Int.	1, 2, 3, 4											
	Tribs	1, 2, 3, 4											
Cover	Total cover	1, 2											
	Cover elements	1,2											
	Functional LWD (amount, distribution)	1, 2											
	Crown closure	1,2											
	Instream vegetation	1, 2											
	Bank shape, texture, riparian vegetation	1, 2											

FORM 3C	CONTINUED PAGE 4 OF 6												
Card section	Attribute	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Water	EMS #	1, 2, 3, 4											
	Temperature, pH	1, 2					-						
	Water chemistry requisition #	1, 2	1				_						
	Conductivity, turbidity	1, 2											
Channel -	Flood signs	1, 2											
morpho	Bed material	1, 2, 3	Γ		X	_				_			
logy	D95, D	1, 2	Γ										
	Morphology	1, 2, 3	$\square$										
	Disturbance indicators	1, 2, 3										X	
	Pattern	1, 2, 3	Π	X									
	Islands, bars, coupling	1, 2	Π					_					
	Confinement	1, 2, 3	Π										
Features	NID map # and NID #	1, 2	Π										
	Type, height/length	1, 2, 3, 4	Π										
	Photo, comments	1, 2, 3, 4											<u></u>
	UTM	1, 2											
Habitat	General comments	1, 2										-	
quality	Fisheries sensitive zones	1, 2	П										
Photo-	Roll #	1, 2									_		
documen-	Frame #	1,2	Π										
tation	Focal length	1, 2							-				
	Direction	1, 2											
	Comments	1, 2											

1, 2

1, 2 1, 2

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#### FORM 3C **CONTINUED -- PAGE 4 OF 6**

#### **Comments:**

Comments

**Total errors:** 

Wildlife

2) typo, card has ST, FDIS has SI, gradient on map is wrong

3) Subom. blank on card, G in FDIS

Group

Observations

General comments

8) checked yes on site card, not checked in FDIS

9) thimbleberry omitted from the list of riparian vegetation

10) beaver dam checked in disturbance indicators, abandoned channel checked in FDIS

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Project name: FRBC project number:		/2002 – Fish and Fish Habitat Inventory MELP project number: <u>HFP-SKR-001-2002</u>
Contractor: QA review by:	SKR Consultants Ltd	Review date: February, 2001

#### FORM 3C CONSISTENCY CHECK: STREAM CARDS, FDIS, PROJECT, INTERPRETIVE MAPS – PAGE 5 OF 6

1-3 Buck Creek; 4-6 Kasalka & Cummins; 7-10 Whiting & Rhine

	1	2	3	4	5	6	7	8	9	10
Site #	33	45	52	6	15	25	3	16	23	33
NID map #	93L.027	93L.018	93L.028	93E.065	93E.065	93E.55	93E.075	93E.074	93E.074	93E.075
NID #	91044	91055	91062	26210	26206	26218	13025	13020	13002	13013

**Record errors below with an 'x.'** An error occurs if there is any inconsistency among: 1) field site cards, 2) FDIS, 3) project maps and 4) interpretive maps, as specified for each attribute.

Card section	Attribute	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Header	Stream name	1, 2, 3, 4	-					_					
	Watershed code or ILP map # and ILP #	1, 2, 3, 4	<u> </u>										
	NID map # and NID #	1,2											
	Reach #	1, 2, 3, 4	<u> </u>										
	Site #	1, 2, 3, 4	$\square$										
	Site length	1,2	<u> </u>										2
	Access	1,2											
	Survey date	1, 2, 3, 4											
	Agency conducting survey	1, 2, 3, 4	Γ										
	Time of survey	1, 2											
	Crew conducting survey	1, 2											
	Fish form completed	1, 2											
Channel	Channel width	1, 2, 3, 4											
	Wetted width	1, 2											
	Residual pool depth	1, 2											
	Gradient	1, 2, 3, 4											
	Bankfull depth	1, 2		X									
	Stage	1, 2	X										
	No Vis. Ch., DW, and Dry/Int.	1, 2, 3, 4											
	Tribs	1, 2, 3, 4											
Cover	Total cover	1, 2											
	Cover elements	1, 2											
	Functional LWD (amount, distribution)	1, 2											
	Crown closure	1, 2											
	Instream vegetation	1, 2											
	Bank shape, texture, riparian vegetation	1, 2											

Card section	Attribute	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Water	EMS #	1, 2, 3, 4											
	Temperature, pH	1, 2											
	Water chemistry requisition #	1, 2											
	Conductivity, turbidity	1, 2											
Channel -	Flood signs	1, 2											
morpho	Bed material	1, 2, 3											
logy	D95, D	1, 2	Π										
	Morphology	1, 2, 3	X										
	Disturbance indicators	1, 2, 3									X		
	Pattern	1, 2, 3	Π										
	Islands, bars, coupling	1, 2	Π										
	Confinement	1, 2, 3	Γ										
Features	NID map # and NID #	1, 2	Γ										
	Type, height/length	1, 2, 3, 4			X			Χ					
	Photo, comments	1, 2, 3, 4											
	UTM	1, 2	Π			_							
Habitat	General comments	1, 2								X			
quality	Fisheries sensitive zones	1, 2	Γ										
Photo-	Roll #	1, 2	Π										
documen-	Frame #	1, 2	Π										
tation	Focal length	1, 2	$\square$										
	Direction	1, 2	1										
	Comments	1, 2	$\square$										
Wildlife	Group	1, 2											
	Observations	1, 2											
Comments	General comments	1, 2	Π										
Total errors	S:		2	1	2	0	0	1	0	1	1	0	8

## FORM 3C CONTINUED – PAGE 6 OF 6

#### Summary of stream site information check:

Number of marks (# cards \* 52): <u>1560</u> Number of errors found: <u>21</u> Maximum number of errors acceptable (5%): <u>78</u> Is the number of errors acceptable: Yes

#### **Comments:**

1) stage L on card, M in FDIS; morphology missing in FDIS and on map

2) typo. 0.2 on card, 0.3 in FDIS

6) height and length are different on card and in FDIS

7) why is this card checked as incomplete?

8) only OW habitat has been entered into FDIS

9) C1 & C2 on card, C2 & C3 in FDIS.

Project name: FRBC project number		/2002 – Fish and Fish Habitat Inventory MELP project number: <u>HFP-SKR-001-2002</u>
Contractor:	SKR Consultants Ltd.	
QA review by:	Chris Schell	Review date: February, 2001

# FORM 3D CONSISTENCY CHECK: LAKE CARDS, FDIS, BATHYMETRIC MAP, LAKE OUTLINE MAP AND PROJECT MAP – PAGE 1 OF 4

Lake Name::two unnamed lakes

 Watershed code: various
 Waterbody ID: see below

 Record errors below with an 'x.' An error occurs if there is inconsistency among 1) lake cards, 2) FDIS, and/or 3) bathymetric maps, and/or 4) outline maps, and/or 5) project maps, as specified for each attribute.

	Attribute (max # errors)	Where to check	01168 FRAN	00672 FRAN	Comments
Waterbody	Type of wetland or lake	1, 2, 5			
	Fish collection form	1, 2			
	Lake name	1, 2, 3, 4			
	WSC or ILP map # and ILP #	1, 2, 3, 4			
	Reach #	1, 2, 4			
	Air photo reference	1, 2, 3, 4			
	Waterbody ID	1, 2, 3, 4			
	Project ID	1, 2, 3, 4			
	Magnitude	1, 2			
	NID map # and NID #	1, 2			
	UTM	1, 2, 3, 4, 5			
	Surface area	1, 2, 3, 4, 5	X		
	Elevation	1, 2, 3, 4			
	Biogeoclimatic zone	1, 2, 3, 4			
Terrain	Setting, aspect	1, 2			
characteristics	Coupling, genesis	1, 2	X		form = OL, FDIS = G
Shoreline	Shoreline type %	1, 2			
characteristics	Land use %	1, 2			
	Cover	1, 2			
	Recreational features	1, 2, 4	-		
Inlets/Outlets	# Inlets/Outlets	1, 2, 3, 4			
	Spawning present (2°)	1, 2, 4			
	WSC or ILP map # and ILP #	1, 2, 3, 4			
Survey	Start date	1, 2, 3, 4			
information	End date	1, 2			
	Agency, crew	1, 2, 3, 4			
Access	Mode (Air/Road/Off road/Trail)	1, 2			
	Auto within	1, 2			
	Distance from road	1, 2			
	Closest community, comments	1, 2			

Form	3D
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	Attribute (max # errors)	Where to check		Comments
Aquatic flora	Emergent and submergent	1, 2, 4		
	Dominant species	1, 2		
	Floating algae	1, 2, 4		
	Species list	1, 2		
Lake	Type of survey	1, 2		
bathymetry	Littoral area (%)	1, 2, 3, 5	X	
	Maximum depth	1, 2, 3, 5	X	
	Benchmark height	1, 2, 4		
	Benchmark type/location	1, 2, 4		
	Maximum water level	1, 2, 3, 4		
Photo	Roll #, frame #, direction	1, 2, 4		
documentation	Focal length	1, 2		
	NID map # and NID #	1, 2		
	UTM	1, 2		
Aquatic wildlife	Group	1, 2		
observations	Species/Comments	1, 2		
Water quality	Station no., UTM	1, 2		
	Date, time	1, 2		
	EMS no.	1, 2, 4		
	Secchi depth, colour	1, 2		
	pH (surface and bottom)	1, 2, 5	X	
Water sample	Depth	1, 2		
	Requisition #	1, 2		
Dissolved	Depth	1, 2	X	
temperature,	Dissolved oxygen, temp.	1, 2	X	
oxygen, and	Conductivity	1, 2, 5	X	
conductivity	Descend and ascend	1, 2		
profiles	H <sub>2</sub> S presence	1, 2		
Equipment	Equipment class	1, 2	X	Form and FDIS different
Total errors:			9	

#### **Comments:**

#### Summary of lake information check:

Number of marks (# cards \* 85): <u>170</u> Number of errors found: <u>9</u> **Comments:**  Maximum number of errors acceptable (5%):<u>8</u> Is the number of errors acceptable: N

01168 FRAN – there's a problem with the deepest two T/O2 profile measurements as entered into FDIS. Map summary symbol is for the other sampled lake (672FRAN).

Project name:	Houston Forest Products Co 200	1/2002 – Fish and Fish Habitat Inventory
FRBC project number	: <u>CON0001398</u>	MELP project number: <u>HFP-SKR-001-2002</u>
Contractor:	SKR Consultants Ltd.	
QA review by:	Chris Schell	Review date: February, 2001

# FORM 3E CONSISTENCY CHECK: STREAM FISH COLLECTION FORM, FDIS, PROJECT MAP, INTERPRETIVE MAP, – PAGE 1 OF 6

1-3) Babine Lake, 6-10) Nadina

	1	2	3	4	5	6	7	8	9	10
Site #	5	17	30	9	17	23	34	42	52	69
NID map #	93L.99	93L.089	93L.089	93E.097	93E.096	93E.096	93E.096	93E.096	93E.095	93E.096
NID #	46113	46126	46141	6179	6191	6151	6141	6219	6118	6187

**Record errors below with an 'x'.** An error occurs if there is inconsistency among 1) fish collection forms, 2) FDIS, 3) project maps, and 4) interpretive maps, and/or 5) lake outline maps, as specified for each attribute.

Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Header	Name	1, 2, 3, 4, 5				_		-		-			
	Stream/Lake/Wetland	1, 2, 3											
	Watershed code or ILP	1, 2, 3, 4, 5											
	Waterbody ID	1, 2, 5					-						
	ILP map #	1, 2											
	Reach #	1, 2, 3, 4, 5											
	MELP fish permit #	1, 2											
	Date start, end	1, 2											
	Agency, crew	1, 2											
	Resample	1, 2											
Site/Method	Site #	1, 2, 3, 4, 5											
	NID map #, NID #	1, 2											
	Site UTM	1, 2											
	Method, method no.	1, 2											
	Temp, turbidity	1, 2											
	Conductivity	1, 2, 3, 4											
Fish summary	Method, method no.	1, 2											
	Haul/Pass (H/P)	1, 2											
	Species	1, 2, 3, 4											
	Stage, total #	1, 2											
	Min. length	1, 2											
	Fish activity	1, 2											

FORM 3E	CONTINUED – PAGE 2	2 OF 6 Where to check	1	2	3		5	6	7	8	9	10	Error
Group			1	4	3	4	>	0	Ľ	•	9	10	locations
Gear specifications	Method, method no.	1,2											
	Haul	1, 2											
	Date, time in/out	1,2											
	Net type, lgth, dpth	1, 2			<b> </b>								
	Mesh size	1, 2											
	Set, habitat	1, 2											
Electrofisher	Method, method no.	1, 2				[							
specifications	Pass	1, 2											
	Time in, time out	1,2											
	EF sec.	1,2											
	Length, width	1,2											
	Enclosure	1,2											
	Voltage, freq., pulse	1,2											
	Make, model	1,2											
	·	Total:	0	0	0	0	0	0	0	0	0	0	0

Comments:

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Project name: FRBC project number:		/2002 – Fish and Fish Habitat Inventory MELP project number: <u>HFP-SKR-001-2002</u>
Contractor: QA review by:	SKR Consultants Ltd	Review date: February, 2001

# FORM 3E CONSISTENCY CHECK: STREAM FISH COLLECTION FORM, FDIS, PROJECT MAP, INTERPRETIVE MAP – PAGE 3 OF 6

1-4) Nadina, 5-7 Peter Aleck, 8-10 Buck Creek

	1	2	3	4	5	6	7	8	9	10
Site #	74	86	93	105	6	18	25	2	11	22
NID map #	93E.096	93L.005	93L.095	93E.096	93L.006	93L.006	93L.006	93L.037	93L.038	93L.037
NID #	6208	6198	6241	6172	34022	34033	34046	91021	91076	91034

**Record errors below with an 'x'.** An error occurs if there is inconsistency among 1) fish collection forms, 2) FDIS, 3) project maps, and 4) interpretive maps, and/or 5) lake outline maps, as specified for each attribute.

<u> </u>	T	Where to					_		_			10	Error
Group	Item	check	1	2	3	4	5	6	7	8	9	10	locations
Header	Name	1, 2, 3, 4, 5											
	Stream/Lake/Wetland	1, 2, 3											
	Watershed code or ILP	1, 2, 3, 4, 5											
	Waterbody ID	1, 2, 5											
	ILP map #	1, 2											
	Reach #	1, 2, 3, 4, 5											
	MELP fish permit #	1, 2											
	Date start, end	1, 2											
	Agency, crew	1, 2											
	Resample	1, 2											
Site/Method	Site #	1, 2, 3, 4, 5											
	NID map #, NID #	1, 2											
	Site UTM	1, 2											
	Method, method no.	1, 2											
	Temp, turbidity	1, 2											
	Conductivity	1, 2, 3, 4											
Fish summary	Method, method no.	1, 2											
	Haul/Pass (H/P)	1, 2											
	Species	1, 2, 3, 4											
	Stage, total #	1, 2											
	Min. length	1, 2											
	Fish activity	1, 2											

Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Gear specifications	Method, method no.	1, 2											
	Haul	1, 2	T										
	Date, time in/out	1, 2											
	Net type, lgth, dpth	1, 2											
	Mesh size	1, 2											
	Set, habitat	1, 2											
Electrofisher specifications	Method, method no.	1, 2											
	Pass	1, 2											
	Time in, time out	1, 2											
	EF sec.	1, 2											
	Length, width	1, 2									X		
	Enclosure	1, 2											
	Voltage, freq., pulse	1, 2											
	Make, model	1, 2	T										
	·····	Total:	0	0	0	0	0	0	0	0	1	0	1

#### Comments:

FORM 3E

CONTINUED - PAGE 4 OF 6

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9) length 150 on card, 100 in FDIS.

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Project name:	Houston Forest Products Co 2003	/2002 – Fish and Fish Habitat Inventory
FRBC project number:	CON0001398	MELP project number: <u>HFP-SKR-001-2002</u> _
Contractor:	SKR Consultants Ltd.	
QA review by:	Chris Schell	Review date: February, 2001

#### FORM 3E CONSISTENCY CHECK: STREAM FISH COLLECTION FORM, FDIS, PROJECT MAP, INTERPRETIVE MAP – PAGE 5 OF 6

1-3 Buck Creek; 4-6 Kasalka & Cummins; 7-10 Whiting & Rhine

	1	2	3	4	5	6	7	8	9	10
Site #	33	45	52	6	15	25	3	16	23	33
NID map #	93L.027	93L.018	93L.028	93E.065	93E.065	93E.55	93E.075	93E.074	93E.074	93E.075
NID #	91044	91055	91062	26210	26206	26218	13025	13020	13002	13013

**Record errors below with an 'x'.** An error occurs if there is inconsistency among 1) fish collection forms, 2) FDIS, 3) project maps, and 4) interpretive maps, and/or 5) lake outline maps, as specified for each attribute.

Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Header	Name	1, 2, 3, 4, 5											
	Stream/Lake/Wetland	1, 2, 3											
	Watershed code or ILP	1, 2, 3, 4, 5											
	Waterbody ID	1, 2, 5											
	ILP map #	1, 2									_		
	Reach #	1, 2, 3, 4, 5											
	MELP fish permit #	1, 2											
	Date start, end	1, 2											
	Agency, crew	1, 2											
	Resample	1, 2								_			
Site/Method	Site #	1, 2, 3, 4, 5											
	NID map #, NID #	1, 2											
	Site UTM	1, 2											
	Method, method no.	1, 2											
	Temp, turbidity	1, 2											
	Conductivity	1, 2, 3, 4											
Fish summary	Method, method no.	1, 2											
	Haul/Pass (H/P)	1, 2											
	Species	1, 2, 3, 4											
	Stage, total #	1, 2											
	Min. length	1, 2											
	Fish activity	1, 2											

Form <b>3</b> e	CONTINUED -	PAGE 6 OF 6	
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Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Gear specifications	Method, method no.	1, 2											
	Haul	1, 2											
	Date, time in/out	1, 2											
	Net type, lgth, dpth	1, 2	1										
	Mesh size	1, 2											
	Set, habitat	1, 2											
Electrofisher specifications	Method, method no.	1, 2											
	Pass	1, 2				<u> </u>							
	Time in, time out	1, 2											
	EF sec.	1, 2											
	Length, width	1, 2											
	Enclosure	1, 2											
	Voltage, freq., pulse	1, 2											
	Make, model	1,2			-								
	•	Total:	0	0	0	0	0	0	0	0	0	0	0

Number of marks (# cards \* 36): <u>1080</u> Number of errors found: <u>1</u> Maximum number of errors acceptable (5%): <u>54</u> Is the number of errors acceptable: Yes

#### Comments:

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Project name:	Houston Forest Products Co 200	1/2002 – Fish and Fish Habitat Inventory
FRBC project number	: <u>CON0001398</u>	MELP project number: <u>HFP-SKR-001-2002</u> _
Contractor:	SKR Consultants Ltd.	
QA review by:	Chris Schell	Review date: February, 2001

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# FORM 3E CONSISTENCY CHECK: LAKE FISH COLLECTION FORM, FDIS, PROJECT MAP, INTERPRETIVE MAP, LAKE OUTLINE MAP – PAGE 1 OF 2

	1	2	3	4	5	6	7	8	9	10
Lake	01168	00672								
WBID	FRAN	FRAN								

**Record errors below with an 'x'.** An error occurs if there is inconsistency among 1) fish collection forms, 2) FDIS, 3) project maps, and 4) interpretive maps, and/or 5) lake outline maps, as specified for each attribute.

Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Header	Name	1, 2, 3, 4, 5		-		-		Ŭ		-	-		
	Stream/Lake/Wetland	1, 2, 3		$\vdash$	-						-		
	Watershed code or ILP	1, 2, 3, 4, 5											
	Waterbody ID	1, 2, 5		-			-						
	ILP map #	1, 2			$\square$								
	Reach #	1, 2, 3, 4, 5		-									
	MELP fish permit #	1, 2											
	Date start, end	1, 2											
	Agency, crew	1, 2											
	Resample	1, 2											
Site/Method	Site #	1, 2, 3, 4, 5											
	NID map #, NID #	1, 2											
	Site UTM	1,2											
	Method, method no.	1, 2											
	Temp, turbidity	1, 2											
	Conductivity	1, 2, 3, 4	X										
Fish summary	Method, method no.	1, 2											
	Haul/Pass (H/P)	1, 2											
	Species	1, 2, 3, 4	X										
	Stage, total #	1, 2											
	Min. length	1, 2											
	Fish activity	1, 2											

Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Gear	Method, method no.	1, 2											-
specifications	Haul	1, 2		<b>—</b>									
	Date, time in/out	1, 2											
	Net type, lgth, dpth	1, 2	X										
	Mesh size	1, 2	X										
	Set, habitat	1, 2											
Electrofisher	Method, method no.	1, 2											
specifications	Pass	1, 2											
	Time in, time out	1, 2						_					
	EF sec.	1, 2											
	Length, width	1, 2											
	Enclosure	1, 2											
	Voltage, freq., pulse	1, 2											
	Make, model	1, 2											
	· · · · · · · · · · · · · · · · · · ·	Total:	4	0									4

Number of marks (# cards \* 36): <u>72</u> Number of errors found: <u>4</u> 

#### Comments:

FORM 3E

CONTINUED - PAGE 2 OF 2

1168FRAN) specifications of gill net are missing from FDIS printout. Lake summary symbol is for the 672FRAN.

Project name:	Houston Forest Products Co 200	1/2002 – Fish and Fish Habitat Inventory
FRBC project number:	_CON0001398	MELP project number: <u>HFP-SKR-001-2002</u>
Contractor:	SKR Consultants Ltd.	
QA review by:	Chris Schell	Review date: February, 2001

Form 3F	CONSISTENCY CHECK: INDIVIDUAL FISH DATA CARD, FDIS, LAKE OUTLINE MAP
	- PAGE 1 OF 1

	1	2	3	4	5	6	7	8	9	10
Site #	34	42	69	6	2	22	3	52	4	00(72
NID map #	93E.096	93E.096	93E.096	93L.006	93L.037	93L.037	93E.075	93E.095	93L.099	00672 FRAN
NID #	6141	6219	6187	34022	91021	91034	13025	6114	46112	

**Record errors below with an 'x'.** An error occurs if there is inconsistency among 1) individual fish data cards and 2) FDIS, as specified for each attribute.

Group	Item	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Individual	Site #	1, 2											
fish data	Method, method no.	1, 2											
	Haul/Pass	1, 2											
	Species	1, 2	1										
	Length	1, 2								X			
	Weight	1, 2										Χ	
	Sex	1, 2											
	Maturity	1, 2											
	Age structure	1, 2											
	Age sample #	1, 2											
	Age	1, 2	1										
	Voucher	1, 2											
	Genetic structure	1, 2				<b>—</b>							
	Genetic sample #	1, 2											
	Photos	1,2											
· · · · ·		Totals											

Number of marks (# cards \* 15): <u>105</u> Number of errors found: <u>2</u> Maximum number of errors acceptable (5%): <u>5</u> Is the number of errors acceptable: Y

#### **Comments:**

8) 72 mm on card and 95 mm in FDIS for DV5.

9) individual fish data is OK but the Fish Summary Section is missing length data on the printout.?

10) Weight data missing from FDIS printout.

Project name:	Houston Forest Products	ouston Forest Products Co 2001/2002 – Fish and Fish Habitat Inventory								
FRBC project number:	CON0001398	MELP project number: <u>HFP-SKR-001-2002</u>								
Contractor:	SKR Consultants Ltd.									

QA review by:

Chris Schell

Review date: February, 2001

FORM 3G INDIVI	DUAL LAKE REPORT – PAGE 1 (		r	- Report section	Attribute	Accept. (√/x)	Notes					
Report section	Attribute	Accept. (Y/N)	Notes	Introduction								
		· · ·	110105	<ul> <li>Project scope/objectives</li> </ul>		Y						
Title page	Proper title	Y		- Location	Description; map	Y						
	Watershed code below title	Y		- Access	Detailed description	Y	1					
	Prepared for	Y		Resource Information	First Nations	Y						
	Prepared by	Y										
	Signature of R.P.Bio	Y			Land use, logging, recreation,	Y	1					
Reference information	Project reference information	Y			Impacts and uses by wildlife	Y						
	Watershed information	Y			Existing water quality data	Y						
	Lake sampling summary	Y			Previous fish presence	Y						
	Contractor information	N	1	- Methods	Reference to RECCE standards	Y	+					
Disclaimer	Standard wording disclaimer	Y				Y	<b> </b>					
Acknowledgements		Y	2	- 	Reference to project plan							
Table of contents	Page numbering correct	Y		-	Deviations from standards	Y						
	Report outline follows standard	Y		-	Deviations from project plan	Y						
Lists	List of Tables	Y		<u> </u>	List of sampling equip. used	Y						
	List of Figures	Y		Results and Discussion	· · · · · · · · · · · · · · · · · · ·	•						
	List of Appendices	Y		Logistics	Problems encountered	Y	1					
	List of Attachments	N	3		- <b></b>	1	1					

Notes:	Notes:
1) GIS contractor	
2) You should probably give Karen some credit for her editing	
3) many of the attachments are with the project deliverables. A reference for the	
project should be given here.	

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FORM 3G CONTIN	IUED – PAGE 2 OF 3			Report section	Attribute	Accept. (Y/N)	Notes			
Lake Report Format				References	All sources in report listed	Y				
	T		T		According to CBE style manual	Y				
<b>Report section</b>	Attribute	Accept. (Y/N)	Notes	Lake Report Appendic	ces					
Immediate shoreline		Y			I		1			
Terrain		Y		<b>Report</b> section	Attribute	Accept. (Y/N)	Notes			
Aquatic flora		Y		Appendix I.	Attribute	Y	Notes			
Site summary	Lake outline map; description	Y		Lake survey form						
Bathymetry	Table of statistics; map	Y		Appendix II.		na				
Limnological sampling	Table of results; T/O <sub>2</sub> profile	Y	1	Water chemistry						
Inlets, outlets		Y		summary						
Fish age, size and life	Fish sampling summary	Y		Appendix III.		Y				
history	Fish capture summary	N	2	Fish data collection form						
	Summary of life history, etc	Y		Appendix IV.	In ascending order by WSC	na				
	Length-frequency histograms	na		FDIS tributary summary	Grouped by site	na				
	Summary of Length-at-age	Y			FDIS reach card printouts	Y				
	Data presented by species	Y			FDIS site card printouts	Y				
	Age classes appear correct	Y			Fish data collection form	N	missing			
Significant features and	Fish and fish habitat						missing			
fisheries observations	Critical habitats	Y			Photos (min. 1, max. 4)	Y				
	Special populations	na			All photos entered in FDIS	Y				
	Wild stocks	na			Explanatory photo captions	Y				
	Rare stocks or species	na			Photos in colour (final only)	Y				
	High value sport fishing	Y		Appendix V. Photos		Y				
	NO management recommend.	Y		Appendix VI.	Proper size ("C" or "D" size)	na				
	Habitat concerns	Y		Bathymetric map						
Wildlife observations		Y			Folded in pocket in report	na	1			

Notes: 1) table is missing for 1168FRAN	
2) MT were used in lake 672FRAN but are not listed in table 16	

#### FORM 3G CONTINUED – PAGE 3 OF 3

- 23

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FORM 3G CONTINU	UED – PAGE 3 OF 3			Report section	Attribute	Accept. (Y/N)	Notes
Attachment I.	Table: Photo summary report	Y		Attachment V.	Field book or facsimile	Y	
Photodocumentation	Colour thumbnail reference	Y	-	Field notes			
rnotodocumentation	Photo CD	Y		_	Lake survey forms	Y	
		Y Y			Fish collection forms	Y	
	CD image #s match digital				Individual fish data forms	Y	
	Negatives in plastic sleeves	Y	_	<u></u>	Field working maps	Y	
	Negatives labelled	Y	<b>_</b>		Site cards	Y	
	Negative #s match digital	na		Attachment VI.	Purchased aerial photos	na	
	Prints in plastic sleeves	na		Aerial photography			
	Prints labelled	na		<u> </u>	Aerial video tape	na	
Attachment II.	Budget breakdown by phase	na		Attachment VII.	Actual ageing structures	Y	
Digital data	Project sampling design	na	1	Fish ageing structures			ļ
	References, contacts list	na	1		Labelled photocopies	na	ļ
	Table of vouchers collected	Y	2		Age data is correct	na	
	Table of DNA collected	Y	2	<ul> <li>Attachment VIII.</li> <li>Voucher and DNA</li> </ul>	Table: Vouchers collected	?	were any
	Photo summary report	Y	2	samples			collecte
	Report tables, figures	Y		·	Table: DNA collected	?	??
	Report text	Y					
	FDISDAT.MDB	Y					
	Bathymetric map file	na					
Attachment III.	FISS data forms and maps	Y					
Reference material	Copies of reference material	Y					
	Data on forms match FDIS	Y					
Attachment IV. Phase completion reports	Hardcopy contract phase completion reports	Y					
Notes: 1) phase 1-3			<u> </u>	Notes:			-
2) contained in FDIS							
				na = not applicable, not required	<u>.</u>		-

|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Project name:	Houston Forest Products Co 2001	/2002 – Fish and Fish Habitat Inventory	
FRBC project number:	CON0001398	MELP project number: <u>HFP-SKR-001-2002</u>	
Contractor:	SKR Consultants Ltd.		
QA review by:	Chris Schell	Review date: February, 2001	

## FORM 31 OUTLINE MAP CHECK – PAGE 1 OF 1

#### Lake name: 01168FRAN, 00672FRAN

Section	Attribute	(Y/N)	Notes
Мар	"E" line is present	N	1
	Sounding transects perpendicular to "E" line	na	
	Sounding transects agree with bathymetric map	na	
	Inlet/outlet streams and direction of flow agree with bathymetric map and air photo	N	2
	Location of deepest point in each "major" basin	Y	
	Limnological station in each "major" basin	Y	
	Reach breaks and stream survey sites indicated	N	3
	Significant aquatic macrophyte beds indicated	Y	
	Prominent shoreline features	Y	
	Benchmark location agrees with bathymetric map and air photo	na	
	Location, direction of lake features photos	N	4

Section	At	tribute	(Y/N)	Notes
Map (cont.)	All symbols as outlin standards'	ed in 'bathymetric	Y	
	Fish sample sites		Y	
Header	Name of lake		Y	
block	Watershed code	•••••••••••••••••••••••••••••••••••••••	Y	
	Date of survey (mont	h, year, day)	Y	day missing
	Legend with all symb	ools used on map	Y	
	Bottom left-hand con contractor/organization	ner, on producing the map	Y	
No. marks (	# maps * 18): <u>162</u>	Max. no. errors acceptab	ole (5%): _	8.1
No. errors fo	ound:0	Is no. errors acceptable:	<b>√</b> Y	

Notes:	Notes:
1) e-line is present but it is not indicated what it is in the legend	
2) outlet arrow is pointing in the wrong direction	
3) site 81 and 82 should be shown on the outline map	
4) panorama photos only are shown	

Houston Forest Products Co. - 2001/2002 - Fish and Fish Habitat Inventory **Project name:** FRBC project number: CON0001398 MELP project number: <u>HFP-SKR-001-2002</u>

**Contractor: QA review by:**  SKR Consultants Ltd. Chris Schell

Review date: February, 2001

#### **ANNOTATED AIR PHOTO CHECK – PAGE 1 OF 1** FORM 3J

Lake name: 01168 FRAN, 00672FRAN

Attribute	Errors	Notes
Benchmark location agrees with bathymetric map and outline map	na	
High water mark	na	
Limnological station in each "major" basin	Y	
Fish sampling sites	Y	
Inlet/outlet streams and direction of flow agree with bathymetric map and outline map	Y	

No. marks (# maps \* 5): 27\_\_\_\_

No. errors found: 0

Max. no. errors acceptable (5%): \_1\_ Is no. errors acceptable:  $\sqrt{Y}$ 

ΠN

Notes:

Notes:

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Project name:	Houston Forest Products	Co 2001/2002 – Fish and Fish Habitat Inventory
FRBC project number:	CON0001398	MELP project number: <u>HFP-SKR-001-2002</u>
Contractor:	SKR Consultants Ltd.	
QA review by:	Chris Schell	Review date: February, 2001

WATERSHED REPORT - PAGE 1 OF 4 Accept. FORM 3K **Report section** Attribute (Y/N) Notes Introduction Accept. 1:20 000, 1:5000, lakes, etc. Ν 2 Project scope, objectives (Y/N)**Report section** Attribute Notes Location Y Title page Description Y Proper title 8.5 × 11" or 11 × 17" Y Overview map 3 Watershed code below title Ν 1 Y Outline of study area Y Prepared for... Inset map showing relation to BC Y Prepared by ... Y Y Sample site locations Signature of R.P.Bio Y Y 1:20 000 map grid Reference information Project reference information Y Y Major communities Watershed information N 1 TRIM/FC aquatic features Y Sampling design summary Y Y Access Description Y Y Contractor information **Resource Information** First Nations Y Land use, logging, recreation, etc. Disclaimer Standard wording disclaimer Y Impacts and uses by wildlife Ν missing Y Acknowledgements Existing water quality data Y Page numbering correct Y Table of contents Y Previous fish presence Report outline follows standard Y Methods Reference to RECCE standards Y Lists List of Tables Y Y Reference to project plan Y List of Figures Y Deviations from RIC standards Y lan Υ nt used

	List of Attachments	Y	—	Deviations from project pla
	List of Appendices	Y		List of sampling equipment
Notes: 1) I don't understa	and why you can't come up with a W	SC for Peter-Aleck Creek.	Notes:	
2) no mention of t	he lakes in the Nadina Project.			
3) Overview map	is missing from Whiting and Rhine r	eport		

## FORM 3K CONTINUED – PAGE 2 OF 4

Report section	Attribute	Accept. (Y/N)	Notes
<b>Results and Discussion</b>			
Logistics	Problems encountered	Y	
	Weather	Y	
	Access	Y	
	Water levels	Y	
	How was it addressed	Y	
	How did it impact the results	Y	
Stream Report Forma	it		
Report section	Attribute	Accept. (Y/N)	Notes
Summary of sub-basin	Table defining each sub-drainage	Y	
biophysical information	Sub-drainages not sampled but included in the planning document	Y	
	Previous sampling reference	Y	Sec. 1.1
Habitat and fish	Characteristics of fish habitats	Y	1
distribution	Pattern of fish distribution	Y	
	Location of significant fish pop.s	Y	
	Lakes treated as a reach of the stream	Y	
	Upstream limits of fish presence	Y	
	Obstructions influencing fish	Y	
	Table of all barriers present	Y	

## Stream Report Format – cont.

Report section	Attribute	Accept. (Y/N)	Notes
Fish age, size and life history	Summary of life stages, life history, etc.	Y	2
	Length-frequency histograms	Y	
	Histograms have the same x-axis	Y	
	Table: Summary of length-at-age.	Y	
	Data presented by species	Y	
	Data presented by sub-drainage	Y	
	Age classes appear correct	Y	
Significant features and	Fish and fish habitat		
fisheries observations	Critical habitats	Y	
	Special populations	Y	
	Wild stocks	na	
	Rare stocks or species	Y	
	High value sport fishing	N	missing
	NO management recommend.	Y	
	Habitat protection concerns		
	Fisheries sensitive zones	Y	
	Fish above 20% gradients	Y	
	Restoration opportunities	Y	
	Problem culverts	Y	
	Unstable slopes	Y	
Fish bearing status	Brief narrative section	Y	
	Table: Summary of fish bearing reaches	Y	

Notes:	Notes:
1) Figures in this section show the same data as the tables. Why have both?	
2) SKR uses a nomenclature for fish life history unique to them. "Lacustrine-	
adfluvial" does not exist in fish biology. A population has a "lacustrine" (lake	
resident) or an "adfluvial" (lake to stream migrations) life history.	

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## FORM 3K CONTINUED - PAGE 3 OF 4

### Stream Report Appendices - cont.

Stream Report Form		Accept.	N	Report section	Attribute	Accept. (Y/N)	Notes		
Report section	Attribute	(Y/N)	Notes	Appendix II.	Inset map box	Y			
Fish bearing status (cont.)	Table: Summary of non-fish bearing reaches	Y		Hardcopy maps –	Fish species box	Y			
	Table: Follow-up sampling			General (cont.)	100 m contour lines	Y			
	required	Y			WSCs or ILPs for all sampled streams	Y			
References	All sources in report listed	N	1		WSCs or ILPs for all 3 <sup>rd</sup> order or				
	According to CBE style manual	Y			higher streams	Y			
Stream Report Appe	endices	Accept			WSCs or ILPs for every other 1 <sup>st</sup> and 2 <sup>nd</sup> order stream	Y			
Report section	Attribute	(Y/N)	Notes		WBIDs for all lakes	N	4		
Appendix I.	In ascending order by WSC	na			Sample site locations	Y			
DIS summary and	Grouped by site	Y			-	<b>I</b>			
photographs	FDIS reach card printouts	N	missing	Project map	All site data symbols attached to sites	N	5		
	FDIS site card printouts	Y			Lake summary symbols	Y			
	Fish data collection form	Y				1			
	Photos (min. 1, max. 4)	Y			Reach data symbols on all reaches	s N			
	All photos entered in FDIS	Y			<30% gradient and all reaches containing sites		2		
	Explanatory photo captions	Y			Features, obstructions, etc.	Y			
	Photos in colour (final only)	Y							
Appendix II.	"E" size plots	Y			Reach breaks and numbers	Y			
Hardcopy maps –	Folded in pocket in report	Y		Interpretive map	Reach summary symbols for all	Y			
General	UTM projection	Y			reaches in the project area				
	1:20 000 map grid	Y			Features, obstructions	Y			
	1:20 000 scale	Y			Fish distribution limits	N	3		
	Complete title box	Y			Stream class	Y			
	Complete legend box	Y					1		
	Source information box	Y							
Notes:				, -	ches did not receive or received wrong	interpretive	coding.		
, .	ge 17 of the Whiting & Rhine report (M		-	These are marked on t	•				
2) You need to have a	a gradient shown for every reach in the	project. Jus	4) missing on the Nadina maps						
number placed along	the stream line (M. Jessop, P. Giroux)			5) A few sites without symbols are noted on the map.					

### FORM 3K CONTINUED – PAGE 4 OF 4

#### **Stream Report Attachments**

**60** 

Report section	Attribute	Accept. (Y/N)	Notes	Report section	Attribute	Accept. (Y/N)	
Attachment I.	Budget breakdown by phase	na	1	Attachment V.	Negative #s match digital	Y	
Planning document	Project sampling design	na	1	Photodocumentation	Prints in plastic sleeves	na	
-	Process of site selection	na	1	(cont.)	Prints labelled	na	
	Reach table	na	1	Attachment VI.	Budget breakdown by phase	na	
	Lake table	na	1	Digital data	Project sampling design	na	1
	Random sample table	na	1	8	References, contacts list	na	-
	References, contacts list	na	1		Table of vouchers collected	Y	-
Attachment II.	Field book or facsimile	Y				_	
Field notes	Site cards	Y			Table of DNA collected	Y	
	Fish collection forms	Y			Photo summary report	Y	
	Individual fish data forms	Y			Report tables, figures	Y	
	Field working maps	Y			Report text	Y	1
Attachment III.	Actual ageing structures	Y			FDISDAT.MDB	Y	1
Fish ageing structures	Labelled photocopies	N			Mapping files (plot files)	Y	
	Annuli identified with red	N			Mapping files (metadata and	Y	-
	Age data are correct	?			map features files)		
Attachment IV.	Table: Vouchers collected	N		Attachment VII.	FISS data forms and maps	Y	1
Voucher, DNA samples	Table: DNA collected	N		FISS update data	Copies of reference material	Ŷ	-
Attachment V.	Table: Photo summary report	Y		1155 update data	•		_
Photodocumentation	Colour thumbnail reference	Y			Data on forms match FDIS	Y	_
	Photo CD	Y		Attachment VIII.	Purchased aerial photos	na	
	CD Image #s match digital	Y	<u> </u>	Aerial photography	Aerial video tape	na	
	Negatives in plastic sleeves	Y					
	Negatives labelled	Y					

Notes

1 1 in FDIS in FDIS in FDIS

Notes:	Notes:
1) submitted with phase 1-3.	

    -

Comments. comment heading are of SKR's own creation, and not those in FDIS. 93e.097 - some reach summary symbols on this map

1136

15.64

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## **SKR Consultants Ltd.**

RR1, S11, C4 Smithers, B.C. V0J 2N0 Phone: (250) 847-4674 Fax: (250) 847-4684 E-mail: rsaimoto@bulkley.net

March 21, 2002

Chris Schell Smithers, B.C.\ V0J 2N0

## **RE:** QA of Phase 5-6 deliverables for Fish and Fish Habitat Inventory performed by SKR Consultants Ltd. for Houston Forest Products Co.

Dear Chris,

We have reviewed the stage 3 quality assurance (QA) for the Fish and Fish Habitat Inventory projects conducted by SKR Consultants during the 2001/2002 fiscal year. Ron and I have finished addressing the recommended changes and comments from the QA letter (dated February 22<sup>nd</sup>, 2002) and have completed the following:

- 1. All errors found in the FDIS consistency check were reviewed and corrected.
- 2. The wrong Lake Summary symbol was corrected on the Nadina map.
- 3. The proximity tests were run for reaches, sites, and feature points associated with the maps for all 6 areas, with 0 errors.
- 4. The Whiting/Rhine CD was reformatted and tested on a non-rewritable CD Drive.
- 5. All errors on the reports were addressed and corrected including:
  - all editorial comments,
  - a short section on "impacts and uses by wildlife" was added to each report, and
  - comments were added to each report regarding "High Value Sport Fishing".
- 6. All identified errors on the hard copy maps were corrected and
  - an italic grey number was inserted approximately 2000 metre downstream from each reach break to represent average reach gradient (%),
  - · the average reach gradient symbol was added to the map Legend, and
  - all of the \*.eps map files were replaced on each of the CD's
- 7. All map Attriibute files were corrected where necessary including
  - changes of point locations related to the proximity test were adjusted in the attribute table, and
  - the attribute files were replaced on each of the CD's.

We found all of the QA efforts extremely valuable toward standardizing and improving the quality of our final deliverables. If you have any further questions, please do not hesitate to contact us by e-mail (regina@skrsmithers.ca) or by phone (250-847-4674).

Yours truly,

Leguia Spance

Regina Saimoto (M.Sc., R.P. Bio.) Senior Biologist

cc. Karen Balkwill, Melissa Todd-MacMillan, Matthew Jessop

# Appendix 5. 1:20,000 Fisheries Project/Interpretive Maps for Sub-basin II and Sub-basin VII within the Fulton River watershed.

Fisheries Interpretive Maps

093L.089 093L.090 093L.099