Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

Upper Pinkut Creek Watershed 2001/02

General Watershed Code: 480-927700-****

Prepared for:

Babine Forest Products Co.

Box 4000 Burns Lake, BC V0J 1E0

Prepared by:

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March 31, 2002

Project Reference Information

FRBC Multi-Year Agreement Number 0000105

MELP Project Number BFP-C016-001-2002

FRBC Activity Number 10437
FDIS Project Code 1644
FDIS Project WSC 480-927700

FRBC Region Smithers Region MELP Region 06 - Skeena

FW Management Unit 6-6
DFO Sub-District 4D

Forest Region Prince Rupert
Forest District Lakes Forest District

Forest Licensee and Tenure # Babine Forest Products Company

Forest Licences A-16823

First Nations Claim Area Carrier-Sekani, Wet'suwet'en

Watershed Information

Watershed Group BABL (Babine Lake)

Watershed Name Pinkut Creek Watershed Code 480-927700

UTM at Mouth 10.325890.6034480 (UTM is of Pinkut Creek at lower project boundary)

Watershed Area (km²) 95.9 Total of all Stream Lengths (km) 163 Stream Order 4

NTS Maps 93 K/5, 93 K/12

TRIM Maps 93K.041, 93K.042, 93K.051

BEC Zone SBS, ESSF

Air Photos BCC98022 109-116

BCC98022 158-170 BCC98023 42-50 BCC98023 85-92 BCC98023 180-185

Sampling Design Summary

Total Number of Reaches262Random Sample Reaches12Discretionary Sample Reaches26Total Sample Reaches38% of Reaches Sampled14.5

Field Sampling Dates September 19 – September 24, 2001

Abbreviations Used in this Report

Avg	Average Average	M	Moderate flow, moderate turbid or medium size stream						
BB	Burbot (Lota lota)	MELP	Ministry of Environment, Lands and Parks						
BD	Stream bed, beaver dam	M/L	Mainline						
BFP	Babine Forest Products Company	MT	Minnow trap						
BGC	Biogeoclimatic zone	MW	Mountain whitefish (Prosopium williamsoni)						
BMC	Brassy minnow (Hybognathus hankinsoni)	NA NA	Not applicable						
C	Clear (not turbid)	NCD	Not classified drainage						
<u>C.</u>	Creek	NCD*	No drainage present at mapped location						
CAS	The state of the s	Neg	Film negative						
	Prickly sculpin (Cottus asper)	NFC	No fish captured						
CBC	Chub-general	NFP	No fish present						
CC	Sculpins -general	NS	Not sampled						
CD	Compact disc	NSC	Northern pike minnow (Ptycheilus oregonensis)						
CH	Chinook salmon (O. tshawytscha)								
co	Coho salmon (O. kisutch)	NTS	National Topographic Survey						
Cond.	Conductivity	NVC	No visible channel						
CPUE	Catch per unit effort	PCC	Peamouth chub (Mylocheilus caurinus)						
CSU	Largescale sucker (Catostomus macrocheilus)	pН	Acidity or alkalinity measurement unit						
CT	Cutthroat trout (O. clarki)	Ргор	Proposed						
CW	Channel width	PW	Electric pulse width						
D	Downstream	R.	River						
DFO	Department of Fisheries and Oceans	RB	Rainbow trout (O. mykiss)						
Dir	Direction	Rd	Road						
Dist.	Distance	Rip	Riparian						
d/s	Downstream	RSC	Redside shiner (Richardsonius balteatus)						
DV	Dolly Varden char (Salvelinus malma)	RSS	Regionally significant species						
EF	Electrofishing	S1 - S6	Riparian classes						
Ехр	Expected	sec	Seconds						
FDIS	Field Data Information System	S	Small size stream						
FISS	Fisheries Information Summary System	SBS	Sub-Boreal Spruce BGC						
FPC	Forest Practices Code	SK	Sockeye salmon (O. nerka)						
FRBC	Forest Renewal of British Columbia	S/S/I	Straight, sinuous or irregular wandering channels						
Freq	Electric current frequency	Spp.	Species						
FRIM	Reconnaissance (1:20,000) Fish and Fish Habitat	STD	Standard						
I KLIVI	Inventory: Standards and Procedures (Version 1.1)								
Grad	Slope gradient	ST/SI/IR	Straight, sinuous or irregular wandering channels						
H	High flow	Т	Turbid						
Hz	Hertz	Temp	Temperature						
ILP	Interim Locational Point	TRIM	Terrain Resource Information Management						
I/M/T	Irregular meandering, meandering or tortuous	Turb	Turbidity						
IM/ME/TM	meandering channels Irregular meandering, meandering or tortuous meandering channels	U	Upstream						
Info.	Information	u/s	Upstream						
km	Kilometer	X	Across						
KO		UTM	Universal Transverse Mercator coordinates						
L	Kokanee (O. nerka) Lamprey - general (Lampetra spp.)	V	Volts						
	Lamprey – general (Lampetra spp.) Low flow, lightly turbid or large size stream	Volt	Voltage						
L		Wb	Bankfull depth						
L.	Lake	WCB	Workers Compensation Board						
LKC	Lake chub (Couesius plumbeus)		Watershed code						
LNC	Longnose dace (Rhinichthys cataractae)	WSC							
LSU	Longnose sucker (Catostomus catostomus)	W1-W5	FPC wetland classes						
LT	Lake trout (S. namaycush)	μs	Microseconds						
LW	Lake whitefish (Coregonus clupeaformis)	μS	Microsiemens						
LWD	Large Woody Debris	°C	Temperature						
m	Meter	%	Slope gradient						
	Millimeter								

Contractor Information

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Disclaimer

This product has been accepted as being in accordance with approved standards within the limits of 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.

Acknowledgments

Forest Renewal B.C provided funding for this project. We would also like to give special thanks to those people who made this project possible, tolerable and even fun. Matt Jessop, who helped throughout the project and maintained the "common sense" approach; Lynn Miers, whose quick responses to our frequent requests still amaze us, Sam Buchanan, for her prompt and timely QA deliveries throughout the project, and Karen Grainger for, above all else, putting up with us throughout the field portion of the project.

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List of Attachments Available at Regional MELP Office in Smithers

The following material is supplemental to this report and is available at the MELP office in Smithers, B.C. The attachments provide information for all watersheds as defined in Schedule A (i.e., Endako tributaries, Tchesinkut Lake tributaries and the Upper Pinkut watershed)

Attachment I Planning Document

- i) Phase Completion Report
- ii) Project budget break-down by phase
- iii) FDIS Project sampling design plan
- iv) Hardcopy and digital Reach Table
- v) Hardcopy and digital Lake Table
- vi) Hardcopy and digital copy of the random sample table
- vii) List of air photographs

Attachment II Hardcopy FISS Update Data Forms and Maps

Attachment III Photodocumentation

- i) Photodocumentation Form 1
- ii) FDIS Photodocumentation Export File
- iii) Indexed Album of all negatives
- iv) 2 Indexed Copies of Photo CD's

Attachment IV Field Data

- i) site cards, fish collection forms, individual fish data forms and field notes
- ii) field working maps

Attachment V Digital Data

1. Introduction

1.1 Project Scope and Objectives

The objective of this project was to conduct a Reconnaissance (1:20,000) Fish and Fish Habitat Inventory in several watersheds within the Francois Lake (FRAN) high-level watershed group. Specifically, left-bank tributaries to the Endako River east of the Village of Burns Lake, B.C. This is a continuation of a multi-year FRBC project commenced in 1996 for Babine Forest Products Company (BFP).

These inventories have a multi-phased approach with a total of six phases required to complete the inventory. Phases I through III are known as the pre-field phases and consist of 1) existing data review, 2) classification and sampling design and, 3) project plan. Phase IV consists of field data collection where site level fish and fish habitat data is collected for pre-determined reaches and lakes, although no lakes were surveyed as part of this project. Phases V and VI embody data compilation, mapping and reporting for the inventory. This report encompasses Phases V and VI and is one of three reports produced under the scope of this project. However, the pre-field deliverables and project-planning document (available at the MELP Regional office in Smithers) are essential references for this report.

1.2 Location

The Upper Pinkut Creek watershed is located approximately 22km north-northeast of the Village of Burns Lake, B.C. in the Upper Pinkut sub-unit within Babine Forest Products Co. operating area. The area covered by this project includes the entire Pinkut Creek watershed upstream from the Augier mainline crossing, approximately 1km downstream from the Pinkut Lake outlet.

The project overview map (Figure 1) on the following page provides the general location of the study area.

1.3 Access

Most of the project area watersheds were located within well-roaded areas, with vehicle access being the predominant method of access for reach sampling. No helicopter or boat access was required. Access to Pinkut Creek from Burns Lake is as follows:

- 1. From Burns Lake, drive north on the Old Babine Lake road for approximately 18km to the Augier mainline junction,
- 2. Turn left onto the Augier mainline and drive to 42.5km on this road, at which point it crosses Pinkut Creek in reach 1.

Sampled reaches from this location were accessed via the Augier, North, Taman and Lower Pinkut roads, in addition to the numerous branch and spur roads that stem from these roads.



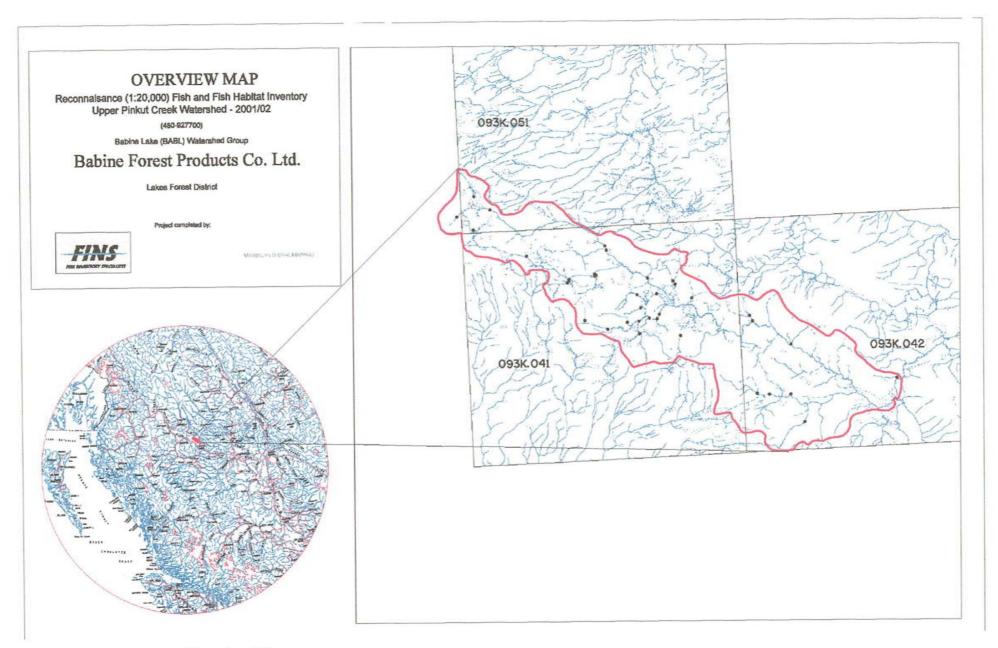


Figure 1: Project Area Overview Map.



2. Resource Information

Resource use within the area is almost exclusively forest management for timber extraction in BFP's operating area. Recreation opportunities exist in Pinkut and Augier Lakes in the vicinity, but these are not located within the Upper Pinkut Creek watershed. The project area is located within Carrier-Sekani and Wet'suwet'en land. No significant wildlife use or impacts were noted within this area

Historical information regarding fish presence was collected and presented in the planning report (FINS, 2001), and the results were incorporated into the interpretive maps for this project. Table 1 below summarizes historical fish presence within the watershed. This table does not include documented fish presence outside of the project area.

Table 1: Historical information on fish presence within the Upper Pinkut Creek watershed

WBID and/ or Watershed Code	Waterbody Name	Fish Species	Source/Comments
480-927700	Pinkut Creek	CT KO RB SU	Wildstone, 1997. Documents species presence/absence in various streams in the watershed, as mapped on interpretive maps.
480-927700-****		RB	FINS, 2001. FINS, 2002. Documents species presence/absence in various streams in the watershed, as mapped on interpretive maps.

[•] FISS = Fisheries Information Summary System

3. Methods

3.1 Project Plan and Alterations

Initial work, such as review of all existing information, preparation of fisheries information maps, location of stream features and selection of sample sites was completed during Phase 1-3 by FINS (Aug, 2001). The original planning report identified 38 reaches for sampling (14 random and 24 discretionary) within 261 total reaches in the study area. Upon completion of Phase 4, the actual number of sample sites was 38 (12 random and 26 discretionary) within 262 reaches. The differing numbers are generally the result of obstructions to fish passage whereby originally planned reach sampling above the obstructions was abandoned in favour of confirming the fish-bearing status upstream, as per the Guidelines for Local Area Agreement Preparation (June 1999). This also explains the difference in total reach number as several reaches were broken into separate reaches based on the presence or absence of fish. Additional discretionary sample reaches were chosen from a list of contingency sample reaches so that all reach categories remained appropriately represented.

3.2 Reconnaissance Standards

Methodology used throughout this project was consistent with the standards and methods as defined in the "Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures (April 2001)" manual and all standards referenced therein.

Fish Sampling

Electrofishing and visual observation were the primary methods used for fish sampling throughout the field portion of this project. These methods were to be supplemented by the use of minnow traps, when logistically feasible, when electrofishing was not effective or potentially harmful to fish (i.e. deep wetland channels, low water temperatures) and sampling results were inconclusive, but these circumstances did not occur.

Measurements

Stream channel and wetted widths were determined using a meter tape. When possible, a minimum of six channel width measurements were made along each site at a distance of approximately one channel width apart. Stream depth measurements were determined using a meter stick. Stream gradient measurements were determined using an Abney level along several sections of the site. Site lengths were determined either by hip chain or by ground estimate. Measurements of falls were based on ground estimates or calculated using the following formula:

H=Ho (gradient (%) to top of falls)/(gradient (%) to bottom of falls) + Ho

Where H = Height of falls (in m) And Ho = Eye height of observer (in m)

The above formula is accurate provided the observer is at the same elevation as the base of the falls (i.e., standing at the edge of the plunge pool). Cascade heights and lengths were determined using a hip chain and Abney level. Vertical cascade height was calculated using the gradient and slope distance according to the formula:

Height (m) = $sin(tan^{-1}(gradient (\%)) \times slope distance (m)$

Stream water temperatures were determined using an alcohol thermometer while pH and conductivity measurements were made using Oakton portable meters, which were calibrated daily using standardized solutions.

Site Numbering Convention

Site numbers for this project have been assigned in an upstream ascending order for all sampled reaches under the scope of this project. Site numbers have been included in all tables that provide specific reach sampling information and on all photographs and photodocumentation indices.

Usage of ILP Numbers

A naming convention for all ILP's has also been used in order to simplify stream referencing for this project for streams requiring watershed codes. All 5-digit ILP numbers that have been assigned are unique within the entire project area. This was done to avoid confusion in ILP



referencing throughout the project and having to reference the ILP map number each time the ILP is referenced.

Every ILP created uses the last two digits of its ILP map, combined with its number on the map. That is, the first ILP on TRIM mapsheet 93K.015 would be ILP 15001. All streams in this report are referred to by their ILP or watershed code (last two sets of non-zero numbers), or by their stream name, as identified in the Subdrainage Reference Information at the beginning of this report.

NVC (No Visible Channel) Reaches

There were three types of situations in which site assessment in the field revealed no visible channel. They include reaches where no drainage was present, reaches that were not a stream by FPC definition, or wetland-type reaches where there was no defined channel present. These different types of NVC reaches were noted in the comments on the site cards and are summarized in the "Fish-Bearing Status" section of this report. It is expected that NVC reaches would receive a "Non Classified Drainage" (NCD) FPC classification.

Appendix Layout - FDIS Reach/Site Summaries, Photographs and Maps

FDIS reach site summaries for sampled reaches have been included in Appendix I. In addition to the standard FDIS reach site summary, comments from the corresponding site and fish cards have been extracted from the cards and provided on the bottom of the page. Photodocumentation references for each site have also been included on this summary page. The reach/site summaries are arranged by site number. The photographs are included in Appendix II and are arranged by roll and frame number. The photographs have been reduced in size so that multiple photos can be presented on one page. Each photo is labeled with roll, frame, watershed code/ILP, reach and site numbers so that each photo can be easily cross-referenced in the index, report, the FDIS database, the negative binder and the photo CD's. All photos are available in Kodak photo CD format, included in Attachment III. Fisheries and Interpretive maps have also been produced and are included as a rolled attachment for this report. Phase Completion Reports and QA reports are provided in Appendices IV and V, included only for the submission to the MELP office in Smithers.

Field Equipment

All sampling equipment specifications are listed below:

- 2 Smith-Root model 12B P.O.W. Backpack Electrofishers
- 50 Gee-type minnow traps
- 2 Oakton pHTestr2 pH meters (with pH 7 & 10 buffer solutions)
- 2 Oakton TDSTestr3 conductivity meters (with 1413µS/cm solution)
- 2 Abney Levels, alcohol thermometers, Silva compasses
- 2 Pentax Zoom 90WR cameras
- assorted other equipment including tight chains, hip chains, dip nets, fishing rods, magnifying lenses, meter sticks, meter tapes
- 2 4X4 trucks equipped with Level 1 First Aid kits and 4 personal First Aid kits, as per WCB requirements



4. Results and Discussion

The following sections present fish and fish habitat information for the Upper Pinkut Creek watershed, as identified earlier in this report. Biophysical information for this area is provided in the Watershed Information section at the beginning of this report. Summarized information for sampled reaches is presented in tabular format in the "Fish Bearing Status" section of this report while detailed site-specific information is available in the appendices.

Presence of barriers that influenced fish migration and distribution in the project area are summarized in Table 2 below. Barriers located in confirmed non fish-bearing reaches have not been included in this table.

Table 2: Summary of historic and new barriers to fish migration found in the Upper Pinkut watershed

Watershed Code/ILP	TRIM MAP	Reach	Site	Barrier Type	Height (m)	Length (m)	Verified in Field	Comments
480-927700-69200	093K.041	7	158	Beaver Dam	1.5	17	Y	Temporary barrier which blocks seasonal fish passage into u/s reaches. Located 3.8km u/s from mouth.
41013	093K.041	4	171	Cascade	2.5	6		Blocks all fish passage and marks upper fish distribution limit. Located 2.2km u/s from mouth.

4.1 Logistics

No logistical problems were encountered throughout the course of sampling in the project area.

4.2 Fish Distribution and Habitat

4.2.1 Fish Presence and Distribution

Lake chub and rainbow trout were the only fish species encountered within the 38 reaches sampled in this area. All lake chub were captured in three reaches, all within the -927700-85400 system. Rainbow trout were present in low numbers in all 7 of the 38 reaches sampled. They were found in Pinkut Creek and in just 3 of the 13 sampled tributaries. Specifically, they were captured in reaches 10 and 14 of Pinkut Creek, reach 7 of -927700-69200, reaches 5, 6 and 11 of -927700-90000 and in reach 1 of -927700-91300. The relatively low densities of rainbow trout in these reaches may explain the overall low rainbow trout use in this watershed, especially given the availability of habitat. Although no permanent physical barriers to fish were identified, the existence of wetlands and beaver dams are likely further limiting rainbow trout use, especially given the low fish abundance in the watershed. Of the fish-bearing streams, no extents of fish use were determined and it is expected that rainbow trout likely reside throughout all available habitat. Fish absence in other streams in the watershed were generally the result of an overall lack of fish habitat.

Cutthroat trout and longnose sucker have also been historically documented to reside in the upper Pinkut watershed (Wildstone, 1997) but their absence in this inventory indicates that juvenile



rainbow trout and lake chub were likely misidentified as cutthroat trout and longnose sucker, respectively.

4.2.2 Habitat

The best rainbow trout habitat within sampled fish-bearing reaches in this watershed is provided in Pinkut Creek, -927700-90000 and -927700-91300. Good to excellent rearing habitat is available in reaches 10 and 14 of Pinkut Creek, reaches 5, 6 and 11 of -927700-90000 and in the first reach of -927700-91300. This habitat is provided predominantly in deep pool and cutbank type cover in riffle-pool morphology. With the exception of reach 5 of -927700-90000, these reaches also all provide good to excellent spawning habitat. Suitable rounded gravels and sufficient holding areas are abundant in these reaches, providing excellent spawning opportunity. In addition, good spawning habitat was also observed in reach 5 of -927700-69200, although this reach was not sampled in this inventory. The best overwintering habitat is present in reaches 10 and 14 of Pinkut Creek and in reaches 5, 6 and 11 of -927700-90000, which provide excellent opportunity in abundant very deep pools.

4.3 Fish Stage, Size and Life History

Fork length and maturity level of all fish sampled were recorded on the individual fish data forms. The life stage (fry, juvenile, or adult) for each fish was determined in the field based on length measurements, physical characteristics, and the habitat in which each fish was found. All captured fish appeared healthy and did not exhibit any external signs of disease.

Lake chub within this watershed were sampled only in the -927700-85400 system. They likely reside throughout similar low gradient systems.

A total of 17 rainbow trout were sampled within this area and both the juvenile and adult life stages were represented (Table 3). Although insufficient numbers of rainbow trout were sampled within this area to provide any meaningful interpretation of their life history, abundant and diverse perennial habitat and the presence of small adult rainbow trout suggests presence of a fluvial population. In addition, this watershed is likely utilized by rainbow trout populations from Pinkut Lake. However, this use may only occur below reach 10, since rainbow trout abundance upstream was very low. The lower portion of the Upper Pinkut watershed is possibly important for rainbow trout recruitment for fish populations from Pinkut Lake. Incidental observation of a large rainbow trout spawning pair (~35-40cm) in June, 2001 in reach 5 of -927700-69200 indicates that rainbow trout use from Pinkut Lake is probably occurring.

Table 3 presents data for fish species encountered in this watershed. The CPUE column in the table indicates the number of fish captured per second of electrofishing. This data is extracted only from those reaches where the species were sampled by electrofishing (324 of the 329 LKC juveniles were captured in minnow traps). Estimated age classes for rainbow trout are included in the table.

Table 3: Summary of life stage, length and CPUE data from fish sampled within the Upper Pinkut watershed

Stream Name	Watershed Code	Spp.	Stage	Estimated Age Class	Number of Fish	Mean Length (mm)	Range of Lengths (mm)	CPUE (# of fish/sec electrofishing)
		LKC	F		7	25.3	22-28	0.028
		LKC	J		329	65.1	32-124	0.012
Pinkut	480-927700	RB	J	0+	2	55.0	52-58	0.002
Creek	400-921700	RB	J	1+	8	68.5	63-78	0.015
		RB	J	2+	6	115.8	104-138	0.008
		RB	A	3+	3	151.0	150-153	0.001

Figure 2 below provides general information on frequency of occurrence of RB within different length classes for the Upper Pinkut Creek watershed for all fish captured in this inventory.

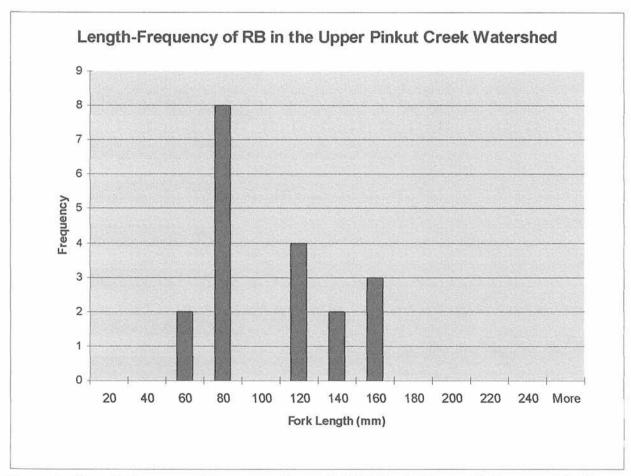


Figure 2: Length-frequency histogram of sampled RB in the Upper Pinkut watershed, September 19 to September 24, 2001.

4.4 Significant Features and Fisheries Observations

4.4.1 Fish and Fish Habitat

- Historical documentation of cutthroat trout and longnose sucker presence in this
 watershed in a report submitted by Wild Stone Resources Ltd. in 1997 were likely
 misidentified rainbow trout and lake chub, respectively. This report also contains mapping
 errors of other fish and fish habitat information.
- Confirmed relatively low abundance of rainbow trout in the watershed.

4.4.2 Habitat Protection Concerns

4.4.2.1 Fisheries Sensitive Zones

No fisheries sensitive zones were identified in this inventory.

4.4.2.2 Fish Above 20% Gradients

No fish were captured in gradients greater than 20% in this inventory.

4.4.2.3 Restoration and Rehabilitation Opportunities

No restoration or rehabilitation opportunities were identified in this inventory.

4.5 Fish Bearing Status

The following three sections summarize the fish-bearing status for all surveyed reaches within the entire project area. The first section summarizes all surveyed reaches, the second section presents information for all non fish-bearing reaches and the third section identifies reaches where follow-up sampling should be conducted. An overview of the process used in determining fish-bearing status is presented in a flowchart in Figure 3 on the following page.

4.5.1 Summary of all Surveyed Reaches

Table 4 on the following pages summarizes all surveyed reaches in the project area. In addition to confirmed fish-bearing reaches, non fish-bearing reaches and reaches requiring follow-up sampling have also been identified and summarized in this table. They are also discussed in further detail in the "Non Fish-bearing Reaches" and "Follow-up Sampling Required" sections of this report.



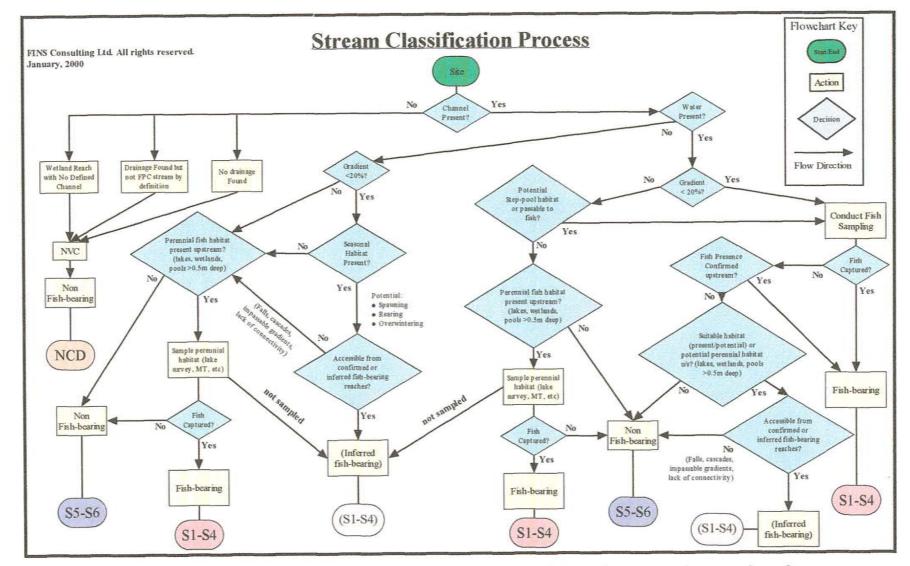


Figure 3: Flowchart of the stream classification process used in determining fish-bearing status of surveyed reaches



Table 4: Summary of data from all surveyed reaches in the Upper Pinkut watershed

Stream Name	Watershed Code	ILP	Reach	Site	Species	Avg CW (m)	Avg Grad (%)		Follow-up Sampling?	Comments
Pinkut C.	480-927700		10.0	154	RB	3.8	2.8	S3	N	Confirmed fish-bearing.
Pinkut C.	480-927700		14.0	155	RB	1.6	4.3	S 3	N	Confirmed fish-bearing.
Pinkut C.	480-927700		16.0	156	NFC (RB)	2.4	0.7	(S3)	N	Assumed fish use - fish habitat present and potentially accessible.
		42001	1.0	157	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
	480-927700-69200		7.0	158	RB	15.0	0.0	W5	N	Confirmed fish-bearing.
	480-927700-69200		8.0	159	NFC (RB)	1.8	5.3	(S3)	N	Assumed fish use - fish habitat present and potentially accessible.
	480-927700-69200-38200		2.0	160	NFC	2.6	9.3	S 6	N	Confirmed non fish-bearing
	480-927700-69200-72600		1.0	161	NFC	0.0	2.5	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
		42025	1.0	162	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
	480-927700-78100		1.0	163	NFC	0.7	7.3	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
	480-927700-78100		2.0	164	NFC	1.0	3.0	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
		41006	2.0	165	NS	0.0	30.0	NCD*	N	No stream/drainage present at mapped location.
		41009	1.0	166	NFC	0.8	5.3	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
	480-927700-85400		2.0	167	LKC	3.5	0.0	(S5)	Y	Suspected fish absence (FPC species). Resample to confirm.
	480-927700-85400		3.0	168	NFC	1.1	7.0	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
	480-927700-85400		5.0	169	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
		41013	2.0	170	NFC	1.4	1.3	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
		41013	4.0	171	NFC	1.0	4.0	\$6	N	Confirmed non fish-bearing
	480-927700-85400-27100		1.0	172	NFC	1.1	1.7	S6	N	Confirmed non fish-bearing
		41019	1.0	173	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
		41020	3.0	174	NFC	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
	480-927700-85400-48400		1.0	175	LKC	2.7	0.0	S 6	N	Confirmed non fish-bearing
	480-927700-85400-48400-2600		1.0	176	LKC	2.0	0.5	S 6	N	Confirmed non fish-bearing
		41023	2.0	177	NS	0.8	1.5	S 6	N	Confirmed non fish-bearing
		41027	1.0	178	NFC (RB)	1.2	0.7	(S4)	N	Assumed fish use - fish habitat present and potentially accessible.
		41028	1.0	179	NS	0.0	0.0	NCD*	N	No stream/drainage present at mapped location.
		41034	1.0	180	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
	480-927700-90000	_	5.0	181	RB	3.0	3.8	S3	N	Confirmed fish-bearing.
	480-927700-90000		6.0	182	RB	2. i	2.8	S3	N	Confirmed fish-bearing.



Table 4: Summary of data from all surveyed reaches in the Upper Pinkut watershed

Stream Name	Watershed Code	ILP	Reach	Site	Species	Avg CW (m)	Avg Grad (%)		Follow-up Sampling?	
	480-927700-90000		11.0	183	RB	1.9	3.5	S3	N	Confirmed fish-bearing.
	480-927700-90000		19.0	184	NFC	0.9	8.5	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
	480-927700-90000-17200		1.0	185	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
	480-927700-90000-31000		0.1	186	NFC	1.2	0.8	S6	N	Confirmed non fish-bearing
<u> </u>	480-927700-90000-31000		1.0	187	NS	0.0	0.0	NCD	N	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches.
		41039	1.0	188	NS	0.0	0.0	NCD*	N	No stream/drainage present at mapped location.
 	480-927700-91300	_	1.0	189	RB	1.4	4.0	S4	N	Confirmed fish-bearing.
		51006	3.0	190	NFC	1.0	4.3	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.
		51009	1.0	191	NFC	1.0	1.0	(S6)	Y	Suspected fish absence (FPC species). Resample to confirm.



4.5.2 Non Fish-bearing Reaches

This section summarizes all sampled reaches within this project area that have been designated as non fish-bearing. This has been based on interpretations and conclusions from the synthesis of data collected during Phases I through IV of this inventory. In addition, historic fish sampling results from numerous watersheds (Babine Forest Products Co. 1997 through 2001 Reconnaissance and Operational Inventories) have also been incorporated into this section to provide comparisons between reaches with similar channel characteristics. Specifically, fish sampling results (% of reaches with fish captured) in reaches within the same size, gradient and pattern classes, as defined in FRIM. Each site has been placed into a specific gradient, channel pattern and size class (based on reach and site data) in order to compare it to the historical inventory results. This is by no means an absolute indication of fish presence, but rather a useful tool to provide a general comparison among the differing reach types. It has been used only as further supporting evidence for the non fish-bearing designation. Table 5 below summarizes this categorized information.

Table 5: Fish sampling results for categorized reach classes (from 1997 through 2001 inventory data)

Reach	Reach				Reac	h Size C	ass					
Gradient	Pattern		Small		1 .	Viedium		Large				
Class	Type	(1	st order)		(2 nd a	nd 3 rd or	der)	(4 th and	higher	order)		
		Total # of Reaches	# of Reaches with Fish Capture	%	Total # of Reaches	# of Reaches with Fish Capture	%	Total # of Reaches	# of Reaches with Fish Capture	%		
1	ST/SI/IR	270	4	1.48%	554	127	22.92%	99	77	77.78%		
(≤4%)	IM/ME/TM	34	3	8.82%	119	26	21.85%	24	11	45.83%		
2	ST/SI/IR	172	1	0.58%	322	66	20.50%	29	19	65.52%		
(>4% and ≤8%)	IM/ME/TM	8	0	0.00%	2	1	50.00%	0	0	0.00%		
3	ST/SI/IR	144	2	1.39%	148	20	13.51%	9	4	44.44%		
(>8% and ≤20%)	IM/ME/TM	0	0	0.00%	0	0	0.00%	0	0	0.00%		
4	ST/SI/IR	45	0	0.00%	25	0	0.00%	1	0	0.00%		
(>20% and ≤30%)	IM/ME/TM	0	0	0.00%	0	0	0.00%	0	0	0.00%		
5	ST/SI/IR	9	0	0.00%	4	0	0.00%	0	0	0.00%		
(>30%)	IM/ME/TM	0	0	0.00%	0	0	0.00%	0	0	0.00%		

Sampled reaches where fish absence is suspected but not confirmed are not included in this section. They are discussed in the "Follow-up Sampling Required" section of this report.

Determining whether or not any fish use occurs in a specific reach is a complex process, involving much more than applying fish sampling results on a site-specific basis. Specifically, when applying a non fish-bearing recommendation when fish are not captured in a sampling event, a more systematic process is required in order to provide an adequate rationale to support a conclusion of fish absence. Biological evaluation is used which factors in such considerations as known fish distributions and behavior, barriers, gradients, invertebrate presence, habitat quality, and



presence/absence of headwater lakes. This process is summarized in the flowchart in Figure 3 above.

As a general rule, two conditions must usually exist in order for fish to inhabit a specific stream reach; 1) presence of fish habitat and 2) accessibility to that habitat. There are exceptions to this, such as presence of resident or adfluvial populations above barriers which otherwise block access, but these situations are considered on an individual basis when appropriate sampling can be undertaken to accurately determine fish presence under these circumstances.

Determining presence of fish habitat requires biological judgment but is based on many tangible factors. A "snapshot" method is used to determine presence of fish habitat at the time of sampling, but this is not sufficient when lack of water limits available habitat. Under these circumstances, a temporal approach is required which factors in the potential for fish habitat presence during a different flow period. In this manner, different habitat requirements for suspected fish species are also considered, such as potential seasonal use for rearing (i.e., higher flow rearing or refuge habitat) or spawning (i.e. suitable gravels, gradient and potential flow). Again, biological judgment is required to recognize this potential habitat, bearing in mind how the different flow regimes may affect the availability of this habitat. Moreover, the presence of potential overwintering or perennial habitat upstream in the watershed (i.e. lakes, wetlands, pools >0.5m deep) is also taken into account and has influence on the fish-bearing status of a specific reach. Existence of habitat or potential habitat, if present, is noted and described in the comments on the site cards.

Once presence of fish habitat has been established, it must be determined whether fish are capable of accessing this habitat. The presence of obstructions to fish in the form of falls, cascades, impassable gradients and lack of connectivity within a watershed may limit fish distribution within a watershed and must be evaluated. When questionable obstructions or soft barriers (i.e., beaver dams, wetlands, NVC reaches) are present, the process for determining the presence of fish habitat upstream must be undertaken and combined with adequate sampling in order to determine fish use.

The fish-bearing status of a specific reach is dependent on the presence of fish habitat, the accessibility to that habitat and is supported by the results of fish sampling. The above process for determining fish presence is an overview of the variables evaluated before fish-bearing status can be accurately ascertained. This entire process is always supplemented by existing fisheries information and interpretations from map and air photo analysis.

Table 6 on the following pages is a summary of all surveyed reaches within this project area that have been recommended for a non fish-bearing designation. It includes relevant site-specific data, some historical information and comments that provide a brief rationale to support the interpretation. The table is simply a summary of the interpretation, and not meant to be a reiteration of the data it summarizes. This data is available in the appendices included in this report.



Once a non-fish bearing conclusion has been established for a sampled reach, all reaches located upstream from that location are considered to be non fish-bearing and no further sampling is required to confirm this conclusion. This is inherent in the process used to determine the non fish-bearing status. Accordingly, only those reaches that were sampled and confirmed to be non fish-bearing are included in this section.

Interpretive mapping of non fish-bearing streams mirrors this procedure, using a solid blue line to denote fish absence, both in the sampled reach and in all reaches upstream. In the case of non classified drainages, a solid green line has been used. A dashed green line on the interpretive maps denotes that no drainage was present as mapped at 1:20,000. These are still referred to as non fish bearing and all reaches upstream are coloured solid blue.

Table 6: Summary of data from surveyed non-fish-bearing reaches in the Upper Pinkut watershed

Watershed Code/	Reach	Site	Date	Avg CW (m)	Avg Grad (%)	Avg Wb Depth (m)	Exp FPC Spp.	FPC Class	Method	EF Dist (m)	EF Time (s)	Flow Stage	Water Temp(°C)	Conductivity (uS/cm)	Turbidity	Voltage (V)	Frequency (Hz)	Pulse Width (uS)	Gradient Class	Pattern Class	Size Class	% of reaches with fish captured	Comments
42001	1.0	157	2001-09-24	0.0	0.0	0.00	RB	NCD											1	S/S/I	S	1.48	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Dry, runoff/seepage. Channelized for 15m near "mouth" then wide 4-5m mucky collection pools, disconnected with no fluvium, vegetated by moss and willows.
480-927700-69200-38200	2.0	160	2001-09-24	2.6	9.3	0.50	RB	S 6	EF	200	252	L	6	40	М	600	90	6	3	S/S/I	s	1.39	Moderately steep and seasonal stream with poor instream cover. During spring, water rages (frequent overhanging banks). Scales of dried algae indicates seasonality. No spawning or overwintering habitat.
480-927700-69200-72600	1.0	161	2001-09-23	0.0	2.5	0.00	RB	NCD	EF	100	149		9	110	С	500	80	6	2	S/S/I	М	20.5	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae. Sampled isolated water puddles.
42025	1.0	162	2001-09-23	0.0	0.0	0.00	RB	NCD											1	S/S/I	М	22.92	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Meadow adjacent to Pinkut Creek with squishy ground and no sign of channel, fluvium etc.
41006	2.0	165	2001-09-19	0.0	30.0	0.00	RB	NCD*											3	S/S/I	s	1.39	No stream/drainage present at mapped location. Not any kind of drainage present or within 150m radius. Just forest on 25-40% slope.
480-927700-85400	5.0	169	2001-09-19	0.0	0.0	0.00	RB	NCD											3	S/S/I	s	1.39	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Seepage with only intermittent channel, no fluvium, no continuous banks or stream bed.
41013	4.0	171	2001-09-19	1.0	4.0	0.30	RB	\$6	EF	60	98	L	6	50	С	700	90	6	1	S/S/I	М	22.92	Some good RB rearing and moderate spawning and overwintering habitat present, especially right below cascade, but still NFC in good sampling conditions. Extensive wetlands d/s likely preclude fish use. No FPC fish species captured in 11 sampled reaches in -927700-85400 watershed. LKC present in 3 reaches, but no potential LKC habitat is isolated above barriers. LKC therefore not regionally significant.
480-927700-85400-27100	1.0	172	2001-09-22	1.1	1.7	0.17	RB	S 6	EF	100	105	М	8	40	L	600	60	6	1	S/S/I	S	1.48	No salmonid habitat - stream filled with orange algae, likely seasonal, flows after intense 2 day rainfall. 2-3cm deep water over algae. No FPC fish species captured in 11 sampled reaches in - 927700-85400 watershed. LKC present in 3 reaches, but no potential LKC habitat is isolated above barriers. LKC therefore not regionally significant.
41019	1.0	173	2001-09-22	0.0	0.0	0.00	RB	NCD											1	S/S/I	s	1.48	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Seepage - no water, no channel, no fluvium - just isolated mudholes - dry, no sign of water even after 2 days of heavy rain.
41020	3.0	174	2001-09-22	0.0	0.0	0.00	RB	NCD	EF	100	127		9	40	С	500	90	6	1	S/S/I	S	1.48	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Seepage - isolated puddles of water after heavy rain. No flow, no fluvium, no channel.



Table 6: Summary of data from surveyed non-fish-bearing reaches in the Upper Pinkut watershed

Watershed Code/ IL.P	Reach	Site	Date	Avg CW (m)	Avg Grad (%)	Avg Wb Depth (m)	Exp FPC Spp.	FPC Class	Method	EF Dist (m)	EF Time (s)	Flow Stage	Water Temp(°C)	Conductivity (uS/cm)	Turbidity	Voltage (V)	Frequency (Hz)	Pulse Width (uS)	Gradient Class	Pattern Class	Size Class	% of reaches with fish captured	Comments
480-927700-85400-48400	1.0	175	2001-09-22	2.7	0.0	0.70	RB	\$6	EF	200	251	Н	10	40	L	900	120	6	1	S/S/I	М	22.92	No salmonid habitat - channel filled with instream vegetation, very slow flow. Vegetation mat around 40-50cm thick in channel. No FPC fish species captured in 11 sampled reaches in -927700-85400 watershed. LKC present in 3 reaches, but no potential LKC habitat is isolated above barriers. LKC therefore not regionally significant.
480-927700-85400-48400- 2600	1.0	176	2001-09-22	2.0	0.5	0.17	RB	\$6	EF	150	129	Н	9	40	C	600	100	6	1	S/S/I	М	22.92	No salmonid habitat - acidic water, drains wetland, no spawning, rearing or overwintering habitat. Cyprinids not abundant in this reach either. Flows through wetland with shallow channel and no distinct banks. No FPC fish species captured in 11 sampled reaches in -927700-85400 watershed. LKC present in 3 reaches, but no potential LKC habitat is isolated above barriers. LKC therefore not regionally significant.
41023	2.0	177	2001-09-19	0.8	1.5	0.17	RB	S 6		•		L							1	S/S/I	S	1.48	No fish habitat - seasonal and inaccessible from parent stream. Channel dissipates approximately 30m u/s from lower boundary - no channel at this point. No access from parent stream. No FPC fish species captured in 11 sampled reaches in -927700-85400 watershed. LKC present in 3 reaches, but no potential LKC habitat is isolated above barriers. LKC therefore not regionally significant.
41028	1.0	179	2001-09-21	0.0	0.0	0.00	RB	NCD*											2	S/S/I	M	20.5	No stream/drainage present at mapped location or within 100m radius.
41034	1.0	180	2001-09-21	0.0	0.0	0.00	RB	NCD											3	S/S/I	М	13.51	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Meltwater channel with no fluvium or continuity. Does not reach Pinkut Creek anyway.
480-927700-90000-17200	1.0	185	2001-09-21	0.0	0.0	0.00	RB	NCD											1	S/S/I	М	22.92	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. Drains wetland - no channel in wetland. Channelized near mouth for 20m.
480-927700-90000-31000	0.1	186	2001-09-22	1.2	0.8	0.83	RB	S6	EF	100	156	Н	7	40	С	600	80	6	1	S/S/I	М	22.92	No suitable rainbow trout habitat - wetland reach with stagnant water or flowing very slowly. Full of orange algae and thick detritus. Water acidic, likely depletion of oxygen in summer and winter.
480-927700-90000-31000	1.0	187	2001-09-22	0.0	0.0	0.00	RB	NCD											1	S/S/I	M	22.92	Not an FPC stream. No fish habitat present, no connectivity to u/s reaches. No channel present in bog.
41039	1.0	188	2001-09-22	0.0	0.0	0.00	RB	NCD*											1	S/S/I	s	1.48	No stream/drainage present at mapped location. No fish habitat - no drainage, no connection to parent stream.



4.5.3 Follow-up Sampling Required

Table 7 below summarizes the need for follow-up sampling in sampled reaches where fish absence is suspected (i.e., marginal fish habitat at any time of year or habitat is isolated by an obstruction with insufficient sampling to confirm a non fish-bearing status). It is anticipated that follow-up sampling in these circumstances will result in a confirmation of fish absence. It also identifies where follow-up sampling could be conducted that would provide important additional fish distribution information. All suspected non fish-bearing reaches have been identified with a dashed blue line on the interpretive maps.

The table does not include sampled reaches where fish use is likely (i.e., fish habitat available or potentially available and easily accessible from confirmed or inferred fish-bearing reaches) and presence has been inferred. It is expected that further sampling in these situations would not affect fish-bearing status. These reaches are assumed to be fish-bearing and are displayed on the interpretive maps with a dashed red line.

Table 7: Follow-up sampling required for confirmation of fish-bearing status for the Upper Pinkut watershed

	PP-					· · · · · · · · · · · · · · · · · · ·
Watershed Code	ILP	Reach	Site	Timing	Method	Comments
480-927700-78100		1.0	163	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
480-927700-78100		2.0	164	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
	41009	1.0	166	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
480-927700-85400		2.0	167	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
480-927700-85400		3.0	168	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
	41013	2.0	170	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
480-927700-90000		19.0	184	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
	51006	3.0	190	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.
	51009	1.0	191	July	EF	Determine extent of fish use (if any) in this watershed and confirm FPC classification in this reach. Suspect fish absence (FPC species). Resample to confirm.

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6. Appendices

Appendix I: FDIS Reach/Site Summaries

Appendix II: Photographs

Appendix III: Hardcopy Maps

Appendix IV: Phase Completion Reports (Ministry submission only)

Appendix V: QA Reports (Ministry submission only)

Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

Upper Pinkut Creek Watershed 2001/02

• Appendix I: FDIS Reach/Site Summaries

FDIS Reach/Site Summary Key Sheet

BFP FFHI 2001 - Upper Pinkut Watershed

Disturbance Indicators Key

O1 - Beaver dams	D2 - Large woody debris	C4 -Multiple channel or braids	S4 - Extensive bars
B1 - Abandoned channels	D3 - Recently formed LWD jams	C5 - Disturbed stone lines	S5 - Extensively scoured zones
B2 - Eroding banks	C1 - Extensive riffles or cascades	S1 - Homogeneous bed texture	
B3 - Avulsions	C2 - Minimal pool area	S2 - Sediment fingers	
D1 - Small woody debris	C3 - Elevated mid channel bard	S3 - Sediment wedges	

Cover Key (Type)

SWD - Small woody debris	
LWD - Large woody debris	
B - Boulders	
U - Undercut	
DP - Deep pools	
OV - Overhanging vegetation	
IV - Instream vegetation	

Cover Key (Amount)

D - Dominant	
N - None	
NS - Not Specified	
S - Sub-dominant	
T - Trace	

Cover Key (Location)

P - Primary	
S - Secondary	
O - Off channel	

FSZ - Fisheries Sensitive Zone

Fish Capture Method Key

AG - Angling	EF - Electrofishing	SW - Swimming / snorkeling
AR - Angler report	GN - Gill netting	TN - Trap net
CR - Creel census	MT - Minnow trapping	UN - Unknown Method
DC - Dead capture	SN - Seining	VO - Visual Observation
DN - Dip netting		

Fish Species Key

	pecies Key	T	y		T
ABT	Anadromous Bull Trout	CT/RB	Fish are either RB or BT, suspect CT	RB/CT	Fish are either RB or CT, suspect RB
AC	Arctic Char	DV	Dolly Varden	RDC	Northern Redbelly Dace
ACT	Cutthroat Trout (Anadromous)	DV/BT	Fish are either DV or BT, suspect DV	RL	River Lamprey
	Dolly Varden (Anadromous)		Verified DV BT hybrid	RSC	Redside Shiner
AEB	Brook Trout (Anadromous)	EB	Brook Trout	RSM	Rainbow Smelt
	Brown Trout (Anadromous)	ESC	Emerald Shiner	RW	Round Whitefish
AL	Arctic Lamprey	EU	Eulachon	SB1	Balkwill Lake Benthic Stickleback
AS	Atlantic Salmon	FDC	Finescale Dace	SB12	Paxton Lake Benthic Stickleback
ASM	Arctic Smelt	FHC	Flathead Chub	SB13	Paxton Lake Limnetic Stickleback
BB	Burbot	FM	Fathead Minnow	SB2	Balkwill Lake Limnetic Stickleback
BCB	Black Crappie	GAM	Mosquitofish	SB3	Charlotte Unarmoured Stickleback
BKH	Black Bullhead	GB	Brown Trout	SB4	Emily Lake Benthic Stickleback
BL	Western Brook Lamprey	GC	Goldfish	SB5	Emily Lake Limnetic Stickleback
BMC	Brassy Minnow	GE	Goldeye	SB6	Enos Lake Benthic Stickleback
BNH	Brown Builhead	GPW	Giant Pygmy Whitefish	SB7	Enos Lake Limnetic Stickleback
BSB	Brook Stickleback	GR	Arctic Grayling	SB8	Giant Stickleback
BSU	Bridgelip Sucker	GSG	Green Sturgeon	SBB	Priest Lake Benthic Stickleback
BT	Bull Trout	GT	Golden Trout	SBP	Priest Lake Limnetic Stickleback
BT/DV	Fish are either DV or BT, suspect BT	IN	Inconnu	SDC	Speckled Dace
BW	Broad Whitefish	KO	Kokanee	SFL	Starry Flounder
CA	Arctic Cisco	LDC	Leopard Dace	SH	American Shad
CAL	Aleutian Sculpin	LKC	Lake Chub	SK	Sockeye Salmon
CAS	Prickly Sculpin	LL	Lake Lamprey	SMB	Smallmouth Bass
CB	Bering Cisco	LMB	Largemouth Bass	SP	Unidentified Species
CBA	Mottled Sculpin	LNC	Longnose Dace	SPK	Splake
CCA	Sharpnose Sculpin	LSM	Longfin Smelt	SQ	Squanga Whitefish
CCG	Slimy Sculpin	LSU	Longnose Sucker	SSM	Surf Smelt
CCL	Cultus Lake Sculpin	LT	Lake Trout	SST	Steelhead (Summer-run)
CCN	Shorthead Sculpin	LW	Lake Whitefish	SSU	Salish Sucker
CCT	Coastal Cutthroat Trout	MSU	Northern Mountain Sucker	ST	Steelhead
СН	Chinook Salmon	MW	Mountain Whitefish	STC	Spottail Shiner
CL	Lake Cisco	NDC	Nooksack Dace	TC	Tench
CLA	Staghorn Sculpin	NFC	No Fish Caught	TP	Troutperch
CM	Chum Salmon	NP	Northern Pike	TR	Unidentifiable Trout - only fry <70mm
CMC	Chiselmouth Chub	NSB	Ninespine Stickleback	TSB	Threespine Stickleback
CMT	Deepwater Sculpin	NSC	Northern Pikeminnow	UDC	Umatilla Dace
CO	Coho Salmon	PCC	Peamouth Chub	WCT	Westslope (Yellowstone) Cutthroat Trout
COM	Tidepool Sculpin	PDC	Northern Pearl Dace	WP	Walleye
CP	Carp	PK	Pink Salmon	WSG	White Sturgeon
CRH	Torrent Sculpin	PL	Pacific Lamprey	WST	Steelhead (Winter-run)
CRI	Spoonhead Sculpin	PLS	Pygmy Longfin Smelt	WSU	White Sucker
CS	Least Cisco	PMB	Pumpkinseed	XDC	Northern Redbelly Dace Finescale Dace
CSU	Largescale Sucker	PW	Pygmy Whitefish	ΥP	Yellow Perch
CT	Cutthroat Trout	RB	Rainbow Trout	1	
			<u> </u>	-	

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map # II P# 10.0 STREAM REFERENCING Gazetted Name: PINKUT CREEK Local Name: ILP Map #: ILP#: Reach #: 10.0 UTM(Zone/East/North): 10.309945.6043395 Sample Type: Length (km): 3.21 Coupling: Partially Coupl Magnitude: 11 **BGC Zone:** ESSF Gradient (%): 2.6 Confinement: Frequently Confin Order: 3 Open water: Not Specified US Elev (m): 1164 Islands: None Visible Riparian Vegetation: Coniferous Bars: None Side 🗹 Diagonal Mid-channel Span Braid Landuse: None/natural SITE Site #: 154 Field UTM 10.312468.6042108 Agency: C016 Crew MUMG Date: 2001-09-21 Site Length (m): 100 GIS UTM .. Agency Name: FINS Consulting Ltd. CHANNEL Intermittent: No Vis.Ch.: Avg Min Max # Avg Min # Channel Width (m): 3.78 3.200 Dewatered: Tribs: 4.6 6 Gradient % 2 75 2 4 Wetted Width (m): 2.58 1.8 3.1 Pool Depth (m): 0.49 | 0.330 5 6 Low Bankfull Depth (m): 0.3 0.5 Med 🗸 Turbidity.: Turbid [Low Temp (C): 7 High 🗌 pH: 7.3 Conductivity: 60 Moderate Clear 🗸 MORPHOLOGY Bed Material: Dominant: Gravels D95 (cm): 16.00 Side Diagonal Span Subdominant: Cobble D (cm): 6.00 Braid ___ Channel Pattern: Irregular, Wandering Islands: Occasiona DISTURBANCE INDICATORS Coupling: Partially Coupled Confinement: Occasionally Confine **C4** C5 **S1** Morphology: RP Riffle Pool COVER Total Cover: Abundant Type: SWD LWD В DP ΟV IV D Amount LWD: Few Location: P/S/O: \checkmark V LWD Dist: Evenly Distributed FSZ: Texture: Fines ☑ Gravel ☑ Cobble ☐ Boulder ☐ Rock ☐ Manmade ☐ Crown Closure Right Bank: Shape: Sloping (Texture: Fines ♥ Gravel ♥ Cobble Boulder Rock Manmade 1-20% Left Bank: Shape: Undercut Right Bank: Rip.Veg: Shrubs Stage: Not Applicable Instream Veg: None ☐ Algae ☐ Moss ✔ Vascular ☐ Left Bank: Rip.Veg: Stage: Not Applicable FISH Site Number Capture Number of ength fished Total Voltage Total Minimum Maximum Species Method Events Fish Length (mm) Time Length (mm) (m) 100 168 sec RB 52 138 FF 5 Roll# 2 , Frame# 1 , CD# 1 , Image# 26 , Direction: U , SCALE/COMMENT: Mac Roll#2, Frame#2, CD#1, Image#27, Direction: D, SCALE/COMMENT: Mac SITE CARD: site=UTM MORPHOLOGY: Flows through 15-40m wide valley, sparsely forested by conifers. OTHER HABITAT: Many deep pools suitable for holding and overwintering habitat. Gravels are uniform in pool crests and channel sides COVER: Excellent rainbow trout habitat in overall diverse and abundant cover. Pools every 10-15m, many LWD-dependant.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

14.0

			STR	EAM	REF	EREI	ICII	N G		45.37	# Sy		
Gazetted Na	me: PINKUT (CREEK				1	Local	Name:					
Watershed C	ode: 480-927	700-00000	-00000-0000-0000-0	00-000-0	00-000	-000-000		ILP N	lap #:		ILF	°#:	
					REA	C H							
Reach #: 1	4.0		UTM(Zone/East/N	orth): 10	.30694	8.604439	6			Sample	Туре:	Biase	ď
Length (km):			Coupling: Coupled		Ma	gnitude:			_		Zone: I		
Gradient (%): 3.9 Confinement: Frequently Confin Order: 3 Open water: Present US Elev (m): 1265 Islands: None Visible Riparian Vegetation: Coniferous													
Bars: None		Diagonal		_	_ `	Braid 🗌	•	duse: Non					
						E	Star St			0 3. G. (A.	1568 S	5 E S E S S S S S S S S S S S S S S S S	
Site #:	155	Field I	JTM 10.307201.604	4279	. Y. 144	() () () () ()	cv: C	:016	Crew: M	J/MG	Date:	2001-09	
Site Length			UTM	.2.0			•		Consulting Lt		50.0.	2007 00	. 20
				Ç	HAN	INEL				(viga	1.00		
No Vis.Ch.:	Intermitte	ent:		Avg	Min	Max	#]		Avg	Min	Max	#
Dewatered:	Trib	vs.: 🔲 📙	Channel Width (m):		1.4	1.9	6] [_	Gradient %		3	5	4
Stage: Low		F	Wetted Width (m): Bankfull Depth (m):	+	1.4 0.5	1.9 0.6	- 6 3	┦ <u>└</u> ^	ooi Depth (m)	·	0.310	0.83	6
Med High	==	 тр (С): 8	pH: 5.9	4		Conductiv	rity: 60		Turb	idity.: Ma	Turbid [oderate	==	Low
9			,	MOR		OLOG				ili.	Sanary.		
Bed Material	: Dominant:	Gravels	D95 (cm): 14			Bars: No			Diagonal	✓ Mid-	channel	□s	pan 🗌
9	Subdominant: (Cobble	D (cm): 8				_		- •				raid 🗌
Channel Pa	ttern: irregular	r, Wanderir	ng Islands: Od	casiona			0	1 B1	B2 B3	D1	D2 D	3	
	pling: Partially	-				CATORS					ÜП	1	
l .	ment: Frequer ology: RP	niy Contine Riffle Pool	a	-	C1	C2 (C3	C4 C5	\$1 S2		\$4	S5	
Contractor of Colors			ade i o regarno alla s	- -759.0 v to 2	للسا		-11.	<u>ليا السا</u> مواضع مرقم	4		. 5/040	. 77 55% 56	So Care Car
					OV		<u> </u>		DD [04 I	0.4	(46)	
Total Cover:			Type:	SWD	LW		3	U S	DP (T T	T		
LWD:	None Not Applicable	. [Location: P/S/O:	V								FSZ	z: 🗍
Right Bank:	Shape: Ur	_	exture: Fines 🗹 Gr	avel	Cobble	Boul	der	Rock	Manmade	7	Cn	own Clos	_
Left Bank:	Shape: Ur		exture: Fines 🗸 Gr						Manmade	=		71-9	
Right Bank:	Rip.Veg: Sh	rubs	•	ge: Not Ap	•				—		1 1	.	
Left Bank:	Rip.Veg:		Stag	ge: Not Ap	pplicab)le 	Ins	stream Veg	: None	Algae L	Moss	V Vas	cular 💟
	w 1844. B			933	FIS	H .,,,,					1835	145.00 147.70	
Site Number	Capture Method	Number Events	, -	Tota Time		Voltage		Species	Total Fish	Minin Length	. 1		mum h (mm)
155	EF	1	300	676 s	ес	800		RB	2	58		1	53
Rol# 4 , Frai SITE CARD: MORPHOLO WATERBOD	me# 23 , CD: site=UTM IGY: Flows to IY: Very scar IITAT: Excell	# 1 , Imag hrough sh ce fish.	ge# 95 , Direction: ge# 96 , Direction: grubby 15m wide v pw trout habitat - a	U , SCA alley.	LE/C	OMMEN	F: mg		n scarce.				

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

16.0

			STR	EAM	REFE	REN	LNC					
Gazetted Nam	e: PINKUT CI	REEK				Lo	cal Na	me:				
Watershed Co	de: 480-9277	00-00000-000	00-0000-0000-00	0-000-00	0-000-00	000-000		ILP M	ap #:		ILP	#:
100	REACH											
Reach #: 16	.0	U	TM(Zone/East/No	orth): 10.	306353.6	045501				Sample	Туре:	Random
Length (km):	.65	Cou	pling: Decoupled	l •	Magn		2				Zone: E	
Gradient (%):			ment: Unconfine	d		Order: 2		141 - 41		Open w	ater: Pres	ent
US Elev (m):			lands: Frequent	1 . 1		ian Veg						
Bars: None	Side	Diagonal 📙	Mid-channel	Span			Landu	se: Non	e/natural	.m.s	at wreat	
					SITE	Catharan St. o				MJ/MG	Onto:	2001-09-23
Site #: 1 Site Length (Field UTM GIS UTN	10.306461.6045 A	022		Agenc			Crew: Consulting		Date.	2001-09-23
				, C	HANN	EL:	17.37	x 32				
No Vis.Ch.:	Intermitte	nt: 🗌		Avg	Min	Max	#			Avg	Min	Max #
Dewatered:	Tribs		annel Width (m):	2.42	1.600	3.3	6		Gradien			1 3
Stage: Low	7		Vetted Width (m):	2.42	1.600	3.3	6 3	P	ool Depth	(m): 0.00		
Med			ankfull Depth (m):	0.90	0.8	1	لـــــا		7	urbidity.:	_Turbid Moderate	Low Clear 🗸
High	/ Ten	np (C): 8	pH: 5.9	24 0.70		nductivit			Japan Milit		woodrate [
			005 ()		PHO	ars: Nor		Side	Diagon	al Mi	d-channel	Span
	Dominant: F ubdominant: N		D95 (cm): 0. D (cm): 0.		ь	ars: Nor		Side [_ Diagon	aı 🗀 ivii	Q-GHAIIIIOI	Braid
_	tem: Regular	• •	Islands: Fre		DISTUR	BANCE	01	B1	B2 B	3 D1_	D2 D	3_
	ding: Decouple		isiands. 1 id	,400,111	INDICA		V					
•	nent: Unconfin				C1 (C2 C	3 C4	4 C5	S 1	S2 S3	S4	S5
Morpho	logy: LC I	Large Channe	d	-								
,		200 X 3 3 7			COVE	R.		1481.78				
Total Cover: /	Abundant	<u> </u>	Туре:	SWD	LWD	В		U	DP	OV	IV	
LWD: I	None	,	Amount:	T	N	N		D	S	T	T]
LWD Dist:	Not Applicable	· L	Location: P/S/O:						<u> </u>			FSZ:
Right Bank:	Shape: Un		ture: Fines 🗹 Gr	=======================================	Cobble	Bould	=	Rock	Manmad	_	Cr	own Closure 1-20%
Left Bank:	Shape: Un		ture: Fines 🗸 Gr	avel ge: Not A	Cobble _	Bould	er[_]	Rock _	Manmad	ж []		1-2076
Right Bank: Left Bank:	Rip.Veg: We Rip.Veg:	HISTIC		ge: Not A			instr	eam Ve	g: None	Algae	✓ Moss	Vascular 🔽
Paramanana Paramanan da	THE PARTY WARRE	ASSESSMENT OF THE PARTY.		Merce Park	FISI	144-3-404		V65/4/8		SEREST	(2) (2) (# <u>)</u> (2)	
Site Number	Capture	Number of	Length fished	Tota	Maria Para San	√oltage	Sp	ecies	Total	Mir	imum	Maximum
Oile Namber	Method	Events	(m)	Tim	e	-			Fish	Leng	pth (mm)	Length (mm)
156	EF	1	150	114 s	ec	800	<u> </u>	NFC	0			
Rol# 4 , Fran SITE CARD: MORPHOLO	me# 20 , CD: site=UTM GY: Flows t Y: Electrofis SITAT: Excel	# 1 , Image# hrough sub-	\$ 92 , Direction: \$ 93 , Direction: alpine meadow y effective in thing habitat and	U, SCA in deep is deen	incised	channe	: mg I.	wning -	all fines.	Only gra	veled in	1-2m sections

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

1.0

093K.042

42001

	STREAM	REFERENCING										
Gazetted Name: Local Name:												
Watershed Code: 000-000000-000	00-00000-0000-0000-000-000-00	00-000-000-000	ILP Map #: 093K.042	ILP#: 42001								
	, , , , , , , , , , , , , , , , , , ,	(EACH										
Reach #: 1.0	UTM(Zone/East/North): 10.	324980.6034605	Sample Typ	e: Biased								
Length (km): .79	Coupling: Decoupled	Magnitude: 1	BGC Zon									
Gradient (%): 2.9 C US Elev (m): 938	onfinement: Unconfined Islands: NONE	Order: 1 Riparian Vegetation:	Open water:	Absent								
Bars: None V Side Diagonal Mid-channel Span Braid Landuse: None/natural												
Site #: 157 Field UTM 10.352682.6034518 Agency: C016 Crew: MJ/MG Date: 2001-09-24												
Site Length (m): 100 GIS UTM Agency: CD16 Crew: MJ/MG Date: 2001-09-24 Site Length (m): 100 GIS UTM Agency Name: FINS Consulting Ltd.												
	C)	HANNEL										
No Vis.Ch.: Intermittent:	Avg	Min Max #		in Max #								
Dewatered: Tribs.:	Channel Width (m): 0.00 Wetted Width (m): 0.00	0 0 0		0 0 0								
Stage: Low	Bankfull Depth (m): 0.00	0 0 0		toid Low								
Med ☐ Temp (C):	pH:	Conductivity:	Moder	= =								
	MOR	PHOLOGY										
Bed Material: Dominant:	D95 (cm):	Bars: Non S	Side Diagonal Mid-cha	nnel 🗌 Span 🔲								
Subdominant:	D (cm):			Braid								
Channel Pattern:	Islands:	DISTURBANCE 01 INDICATORS	B1 B2 B3 D1 D2	D3								
Coupling: Confinement:		C1 C2 C3 C4	C5 S1 S2 S3 S	1 1 1 4 S5								
Morphology:	-											
	- • • • • • • • • • • • • • • • • • • •	OVER										
Total Cover:	Type: SWD		U DP OV IV									
LWD:	Amount											
LWD Dist:	Location: P/S/O:			FSZ:								
Right Bank: Shape:	Texture: Fines Gravel (Cobble Boulder Ro	ock Manmade	Crown Closure								
Left Bank: Shape:		Cobble Boulder Ro	ock Manmade									
Right Bank: Rip.Veg: Left Bank: Rip.Veg:	Stage: Stage:	Inetras	am Veg: None Algae M	oss Vascular								
	,											
Roll# 6 , Frame# 3 , CD# 1 , Ima Roll# 6 , Frame# 4 , CD# 1 , Ima	ge# 125 , Direction: U , SCAI ce# 126 . Direction: D . SCAI	LE/COMMENT: cam ba LE/COMMENT: cam ba	ag aα									
SITE CARD: site=UTM			•	Į								
MORPHOLOGY: Drains ~10m w OTHER HABITAT: No fish habit:			mouth" then wide 4-5m muci	ky collection								
pools, disconnected with no fluvi				.,								
				1								
L												

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

7.0

							STR	EAM	REF	ERE	A C I	NG						
Gazetted Na	me:										Local	Name:						1
Watershed (ode	: 480-	92770	0-6920	0-0000	00-0000-	0000-00	0-000-0	00-000	-000-000		ILP	Map #:			ILF	#:	
				Var.					REA	CH	i de la compania Esta de la compania							
Reach #:	.0				UT	M(Zone/	East/No	orth): 10	.31994	6.603413	39			S	ample 1		Rando	m
Length (km)						ling: De			Ma	gnitude:				_			SBS	1
Gradient (%) US Elev (m)				Co		nent: Ur ands: Oc			Rin	Order: arian Ve		ion: Wet	land	Op	en wat	er: Pres	een	
Bars: None			Пг	Diagonal	$\overline{}$	Mid-cha	_	Span		raid	•		one/natural					Ì
pars. None		5.850	Wha.e	inagona in lite	e de de la	an ive		William I. M				Park and		を記る	4-54E/6	· ******	GOVERNO SE	140 KG
Site#	151	``````````````````````````````````````		Field	UTM	10.3206	19.6034	100000000		and Market A	ncy: C	016	Crew:	MJ/	MG	Date:	2001-09	-24
Site Length					UTM					-	•		S Consulting	g Ltd.				
ALLE WEST			ine			Congress	15,54	, C	HAN	NEL		549.5				13.5		
No Vis.Ch.:														#				
Dewatered:			Tribs.	:□[nnel Wi		15.00	15	15	1	4 F	Gradier	-	0.00	0	0	2
Stage: Low				}		etted Wid okfull De		15.00 3.00	15 3	15	1	┥└	Pool Depth	`	0.00	0	<u></u>	
<i>M</i> ed High	=		Tom	1 p (C): 9			l: 6.6		L	Conducti	vitv: 5			Turbic	•	Turbid oderate	=	Low
1.11911		o sana d	273.53	p (0). 0	23574	بر مرازه الم		MOF		OLOG		an Ind	State of the S	H a lithi.			Živos te	454,494,04
Bed Materia	d: [lomina	ant: Fi	nes	Service service	D95 (cm): 0.			Bars: N		Side	Diagor	nai 🗌	Mid-	channe	. □ s	pan 🗌
Coo maion				ot Applic	cable	,	cm): 0.					-	_ •				В	raid 🗌
Channel P	atte	n: Irre	gular I	Meande	rs	Isla	nds: No	ne		JRBANC		1 B1	B2 B	3	D1	D2 [23	
	•	_	couple							CATORS	ىد				Щ.			
Confin		nt: Und ly: LC		ed arge Ch	annal				C1	C2	C3 □ □ □	C4 C	5 S1	S2	S3	- 5 4 	S5	
MOIDI	ioios	,y. LC		arge Cir	(a) () (O)				للل	الساب معاشمة	<u> </u>	<u> </u>		السا				This is a second
		, 16 Y			12.7%	mav.			COV				l pp	Γο	. I	(V	1	
Total Cover	Abı	undani	t			A	Type: mount:	SWD	LW		B N	U	DP N	۳		D	1	
LWD LWD Dist			rahla		L	ocation:								~			FS	z: 🗌
Right Bank		• • •	e: Slo	nina (Texts	re: Fines	. ✓ Gr	avel	Cobble	Bou	ider	Rock	Manma	de		Cı	own Clo	sure
Left Bank			e: Slo			re: Fines					lder	Rock	Manma	de 🗌			0	%
Right Bank	: 1	Rip.Ve	g: We	liand			-	e: Not A					/eg: None	п.	.	7		autar 🌌
Left Bank	: 1	Rip.Ve	g:		- Fig	. a. 10 20 12	Stag	e: Not A					/eg: None	LJ F	vgae <u>v</u>	Z) WOSS	vas	the second
15 % (F)				进制			25.00		Sec. 34.23	FEAT	性摄影	5		irPhol			117	M (ZÆN)
93K.041	_		Type BD	Hgt 1.5		lethod GE	Lg 17	Met		E 6	noto	10 L:		iir iio	#:		0.	
Commen	Щ.								L_				1		Lk			
Z		2004	ol awa	(1) (1) (1)	2. J.	90/30	Si Libi	×1.30	FIS	H	a de la composição de l				(Port			
Site Numbe	7	Captu	re	Numbe	er of	Length		Tot	al	Voltag	e	Species			Minir		(imum
	\bot	Metho		Ever	nts	·	n)	Tin	-	900	_	NFC	Fish 0		Length	ı (mm)	Leng	th (mm)
158 158	╁	EF VO		1		100		173 10 r			+	RB	2			50		150
Rol#: 6, F Rol#: 6, F SITE CARI SITE CARI WATERBO OVERWIN OTHER HA reaches.	ram D:s D:w DY	e# 11 ite=U rater l : Obs	I, CD TM level r erved	#1, In recently I rainbo	nagei risei ow tro	‡ 133 , l n due to ut jump n deen	Direction newly- ing in p	n: U , S built Bl ond. bitat.	SCALE D over	old one	IENT:	trees -	wetland re	ach.				ır
L																		

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

8.0

ILP#

W-0000-000-000-000-000-000

			STI	REAM	REF	EREN	ICI	NG				
Gazetted Na	me:					1	_ocai	Name:				
Watershed C	ode: 480-927	700-69200-00	1000-0000-0000-0	0-000-0	00-000-	000-000		ILP :	Map #:		ILI	P#:
					REA	H 2						
Reach #: 8	.0	(TM(Zone/East/N	iorth): 10	.31940	6.603427	5			Samp	ofe Type:	Random
Length (km):	.68	Co	upling: Partially	Coupl	Mag	jnitude:	8			BG	iC Zone:	SBS
Gradient (%):			ement: Occasion	•		Order:			_	Open	water: Pre	sent
US Elev (m)			slands: None Vis	_	_		getati	ion: Conif	erous			
Bars: None	✓ Side _	Diagonal	Mid-channel	Span		raid 🔲	Lan	duse: No	ne/naturai			
					SIT	 - material 						
Site #: Site Length		Field UTA GIS UT	Л 10.319565.603 М	14322		•	cy: C cy Na		Crew: Consulting	MJ/MG Ltd.	Date:	2001-09-23
		1.504		C	HAN	NEL						
No Vis.Ch.:	Intermitte	ent: 🔲 🔔		Avg	Min	Max	#] _		Αv	g Min	Max #
Dewatered:	Trib		hannel Width (m)	-	1.4	2.200	6	J L	Gradien			6 4
Stage: Low			Wetted Width (m) ankfull Depth (m)		0.600	1.3 0.3	<u>6</u> 3	┨└	Pool Depth	(m): 0.2	4 0.19	0.310 3
Med High		mp (C): 10	рН: 6.7	0.50		Conductiv			7	urbidity.:	Turbid Moderate	= =
91			Production and the	MOR		LOG				100 m 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Bed Material	: Dominant:	Cobble	D95 (cm): 3			Bars: No		Side	Diagon	ai 🗌 t	fid-channe	Span
1	Subdominant: (D (cm): 4				<u></u> ,			(^-		Braid [
Channel Pa	ttem: Sinuous		Islands: N	one	DISTU	RBANCE	_0	1 B1	B2 B:	3 D1	D2 E	03
Cou	oling: Partially	Coupled			INDIC	CATORS	V					
1	nent: Frequen	tly Confined		_	C1	C2 C	3	C4 C5	S1	S2 S	3 S4	S5
Morpho	ology: SP	Step Pool		-								
		14 TO 18			COV	E R	(Cr		16011184	gering i		
Total Cover:	Abundant		Type:	SWD	LWE			U	DP	OV	IV	}
LWD:	Few	_	Amount: Location: P/S/O:	T	T			N	S	T	N	
LWD Dist:	Evenly Distrib	uted	LOCATION. P/3/O.								لللل	FSZ:
Right Bank:	Shape: V	•	ture: Fines 🗹 G						Manmad	=	Сг	own Closure
Left Bank:	Shape: V		ture: Fines 📝 G			_	ler 🗸	Rock	j Manmad	e		21-40%
Right Bank: Left Bank:	Rip.Veg: Sh Rip.Veg:	rubs		ge: Not A ge: Not A			Ins	stream Ve	g: None	✓ Algae	Moss	Vascular
Collèges son explisionest d	o de Pero atra o Sueces de C	or distriction are en	etrolinaverin, palitarinavez nivelina	on the section of			GET WAY	News Colors	ac somewhat	Monte of the State	er or a substitution of	
			I	5- 3-3-3	FIS	erus Republica de Tella	27		1			
Site Number	Capture Method	Number of Events	Length fished (m)	Tota		Voltage	1	Species	Total Fish		nimum gth (mm)	Maximum Length (mm)
159	EF	1	100	187 s	ec	600		NFC	0			
	me#1,CD		123 , Direction	n: U , SC	ALE/C	OMMEN		am bag		<u>'</u>		
SITE CARD		,	,	,				_				
			ow and small g		picture	sque st	eps a	ınd small	cascades	5.		
			and angular sung habitat for ra		out.							
OVERWINTE	RING HABI	TAT : Likely	in many BD po	ends.								
OTHER HAB	HAT : Likely	not utilized	due to extensi	ve wetlaı	nd d/s i	n reach	7. M	any BD's	in lower :	section (of this rea	ch.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

Watershed Code: 480-927700-69200-38200-0000-0000-000-000-000-000-000

2.0

			STI	REAM	REF	EREN	CII	۷G .	$H(X_{\mathcal{A}})$			
Gazetted Na	me:					L	ocal	Name:				
Watershed C	ode: 480-927	700-69200-38	200-0000-0000-0	00-000-0	00-000-0	000-000		ILP I	Wap #:		ILP	#:
					REAC	H		-10 3 3 3 3 3		15 m		
Reach #: 2	.0	U	TM(Zone/East/N	lorth): 10	.320290	.6032384			· <u>- · · · · · · · · · · · · · · · · · ·</u>	Sample Ty	pe:	Biased
Length (km):	1.18	Cou	pling: Coupled		Mag	nitude:	1			BGC Zo	ne: E	SSF
Gradient (%):			ement: Confined			Order:				Open water	: Abse	ent
US Elev (m):	: 1119 	. Is	lands: NONE	_	Ripa	rian Veg	jetatio	on: Conif	erous			
Bars: None	✓ Side	Diagonal	Mid-channel	Span		aid	Land	duse: Log	ging, with re	eserves		
					SIT		5. V	4		Service Control		
Site #: Site Length		Field UTM GIS UTI	I 10.321138.603 M	2845		Agend Agend	•		Crew: Consulting		ate:	2001-09-24
				* C	HAN	NEL	# X		in contract			
No Vis.Ch.:	Intermitte	ent: 🗌		Avg	Min	Max	#]		Avg 1	Vlin	Max #
Dewatered:	Trit		nannel Width (m)		2.200	2.900	6] [Gradient	%: 9.25	7	13 4
Stage: Low	✓	<u> </u>	Vetted Width (m)		0.600	1.3	6	IJ Lff	Pool Depth (r	n): 0.39 0	.360	0.41 2
Med		B	ankfull Depth (m)	0.50	0.5	0.5	3		Τι	irbidity.: Tu	ırbid [Low
High	Te	mp (C): 6	pH: 7.0		С	onductivi	ty: 40			Mode	erate	✓ Clear
				MOR	PHO	LOGY				的人的意思		5.2.5.6
Bed Material: Dominant: Cobble D95 (cm): 35.00 Bars: Non 🗹 Side 🗌 Diagonal 🗌 Mid-channel 🗍 Span 🗍												
1	Subdominant:		D (cm): 1	5.00								Braid
ì	ttem: Straight		Islands: No	one		RBANCE ATORS	01	B1	B2 B3	D1 D2	D:	3
1	pling: Coupled ment: Confine								Y	2 62 1) SE
		u Cascade Pool			C1	C2 C:	י נ ור	C4 C5	S1 S	32 S3 :	S4	\$5
		62 (43 G-63 S) X	7682557334773674A	Sevēnisaisti	COVE	D 72 30	an in i					
Total Cover:	Trace		Type:	SWD	LWD	В	2349.6.3	U	DP	ov I	v 7	
LWD:	Mono		Amount:	N	N	D		N	T	s	Г	
1	Not Applicable	•	Location: P/S/O:									FSZ:
Right Bank:	Shape: Ov	erhano Text	ure: Fines 🗹 G	ravei 🗸	Cobble	Bould	er 🗸	Rock	Manmade		Crr	own Closure
Left Bank:	Shape: O	•	ure: Fines 🗸 G		=	===			_	=	0.0	41-70%
Right Bank:	Rip.Veg: Sh			ge: Not A					-	_		
Left Bank:	Rip.Veg:		Sta	ge: Not A	pplicable)	Ins	tream Ve	g: None	Algae 🗹 N	Moss [Vascular _
					FIS							
Site Number	Capture	Number of Events	Length fished	Tota		Voltage	S	Species	Total	Minimur		Maximum
160	Method EF	1	(m) 200	252 s	- 1	600		NFC	Fish	Length (n	1111)	Length (mm)
		L	# 134 , Direction				NT: c		1 0	.1	l	
		D# 1 , Image	# 135, Direction	on:D,S	CALE/C	OMME	VT: b	inder				
SITE CARD:		through steer	n aully									
			and angular su	bstrate,	lacks h	olding pl	aces	i.				
			- 2 pools found									honeine
			onal stream wit s seasonality.	n poor ir	istream	cover. L	חמטכ	ig spring	, water rag	es (irequent	over	nanging
′		-	,-									

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

1.0

Gazetted Name: Local Name: Watershed Code: 480-927700-69200-72600-0000-000-000-000-000-000-000 ILP Map #: ILP #	
R E A C H Reach #: 1.0 UTM(Zone/East/North): 10.318875.6034508 Sample Type: F	
Reach #: 1.0 UTM(Zone/East/North): 10.318875.6034508 Sample Type: F	!
,	
Length (km): .30 Coupling: Decoupled Magnitude: 2 BGC Zone: SF	Random
	3S
Gradient (%): 4.3 Confinement: Unconfined Order: 2 Open water: Preser	nt
US Elev (m): 1020 Islands: None Visible Riparian Vegetation: Coniferous	
Bars: None V Side Diagonal Mid-channel Span Braid Landuse: Logging, with reserves	
SITE	
Site #: 161 Field UTM 10.318985.6034366 Agency: C016 Crew: MJ/MG Date: 20 Site Length (m): 100 GIS UTM Agency Name: FINS Consulting Ltd.	001-0 9 -23
CHANNEL	
No Vis.Ch.: ✓ Intermittent: Avg Min Max # Avg Min N	Max #
Dewatered: Tribs.: Channel Width (m): 0.00 0 0 Gradient %: 2.50 2	3 2
Stage: Low Wetted Width (m): 0.00 0 0 Pool Depth (m): 0.00 0	0 0
Med Bankfull Depth (m): 0.00 0 0 Turbidity.: Turbid	Low
High Temp (C): 9 pH: 7.1 Conductivity: 110 Moderate MORPHOLOGY	Clear ✔
	7 c □
Bed Material: Dominant: D95 (cm): Bars: Non Side Diagonal Mid-channel Subdominant: D (cm):	Span Braid
Channel Pattern: Islands: DISTURBANCE 01 B1 B2 B3 D1 D2 D3	٦
Coupling: INDICATORS	J
Confinement: C1 C2 C3 C4 C5 S1 S2 S3 S4 S	5
Morphology:	
COVER	
Total Cover: Type: SWD LWD B U DP OV (V	
LWD: Amount:	
Amount	FSZ:
LWD: Amount: LWD Dist: Location: P/S/O: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow	FSZ: n Closure
LWD: LWD Dist: Right Bank: Shape: Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade	
LWD: LWD Dist: Right Bank: Shape: Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Right Bank: Rip.Veg: Stage:	n Closure
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss	
LWD: LWD Dist: Right Bank: Shape: Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Right Bank: Rip.Veg: Stage:	n Closure
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Number of Length fished Total Voltage Species Total Minimum	Vascular Maximum
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Number of Length fished Total Voltage Species Total Minimum	n Closure
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag	Vascular Maximum
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Rip. Veg: Stage: Left Bank: Rip. Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag	Vascular Maximum
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM	Vascular Maximum
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles.	Vascular Maximum
LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss Fish Rethod Events (m) Time Fish Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag ROLL#: CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles. OTHER HABITAT: Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae - not a	Vascular Maximum
LWD: LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles.	Vascular Maximum
LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss Fish Rethod Events (m) Time Fish Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag ROLL#: CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles. OTHER HABITAT: Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae - not a	Vascular Maximum
LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles. OTHER HABITAT: Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae - not a	Vascular Maximum
LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles. OTHER HABITAT: Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae - not a	Vascular Maximum
LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss Fish Rethod Events (m) Time Fish Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag ROLL#: CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles. OTHER HABITAT: Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae - not a	Vascular Maximum
LWD Dist: Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Crow Left Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss Fish Rethod Events (m) Time Fish Length (mm) 161 EF 1 100 149 sec 500 NFC 0 Roll#: 4 , Frame# 24 , CD# 1 , Image# 97 , Direction: U , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag Roll#: 4 , Frame# 25 , CD# 1 , Image# 98 , Direction: D , SCALE/COMMENT: cam bag ROLL#: CARD : site=UTM MORPHOLOGY: Drains willow shrub corridor. WATERBODY: Sampled isolated water puddles. OTHER HABITAT: Seepage with no continuous channel, no fluvium. Isolated mudholes filled with orange algae - not a	Vascular Maximum

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

093K.042

	STREAM:R	EFERENCING		
Gazetted Name:		Local Nan	ne:	
Watershed Code: 000-000000-000	00-00000-0000-0000-000-000-000	-000-000-000	ILP Map #: 093K.042	ILP #: 42025
	RI	EACH		
Reach #: 1.0	UTM(Zone/East/North): 10.32	20825.6036627	Sample	Type: Biased
Length (km): .07	Coupling: Decoupled	Magnitude: 2		Zone: SBS
Gradient (%): 2.9 C US Elev (m): 972	onfinement: Unconfined Islands: NONE	Order: 2 Riparian Vegetation:	•	ater: Absent
Bars: None ✔ Side ☐ Diagor			e: None/natural	
		SATE		
Site #: 162 Fiel	d UTM 10.320790.6036583	Agency: C016	Crew: MJ/MG	Date: 2001-09-23
Site Length (m): 200 G	IS UTM	Agency Name:	FINS Consulting Ltd.	
	CH.	ANNEL		
No Vis.Ch.: Intermittent:		Min Max #	Avg	Min Max #
Dewatered: Tribs.:		0 0 0	Gradient %: 0.00 Pool Depth (m): 0.00	0 0 0
Stage: Low Med		0 0 0	Turbidity.:	Turbid Low
High Temp (C):	pH:	Conductivity:		loderate Clear
	MORP	HOLOGY		
Bed Material: Dominant:	D95 (cm):	Bars: Non S	ide Diagonal Mic	i-channel Span
Subdominant:	D (cm):			Braid
Channel Pattern: Coupling:		ISTURBANCE 01	B1 B2 B3 D1	D2 D3
Confinement:	C	C1 C2 C3 C4	C5 S1 S2 S3	S4 S5
Morphology:	<u></u>			
	C (OVER		
Total Cover:	Type: SWD	LWD B L	J DP OV	IV
LWD:	Amount:			
LWD Dist:	Location. P13/O.			FSZ:
Right Bank: Shape:	= =	bble Boulder Ro bble Boulder Ro	= =	Crown Closure
Left Bank: Shape: Right Bank: Rip.Veg:	Texture: Fines Gravel Co Stage:	obble Boulder Ro	ck Manmade	
Left Bank: Rip.Veg:	Stage:	Instrea	m Veg: None 🗌 Algae [Moss Vascular
Roll#:6,Frame#9,CD#1,Im	age# 131 , Direction: U , SCAL	.E/COMMENT: no sca	ale - meadow.	
SITE CARD : site=UTM MORPHOLOGY : meadow adjac	cent to Pinkut Creek with cause	hy around and no sion	of channel fluvium etc	Not an EDC stream
OTHER HABITAT : No fish habi		ny ground and no sigi	1 Of Chairner, hoviding etc.	. Not all 11 O Stream.
				ĺ

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

n

			S1 1	REAM	REFE	REN	ΙÇΙ	NG		3,444			
Gazetted Na	me:					1	.oca	l Name:					
Watershed 0	ode: 480-927	700-78100-00	000-0000-0000-0	0-000-0	00-000-0	000-000		ILP I	Map#:		HL	P #:	
				1500	REAC	H	9477.18 5707.18					2.0	
Reach #: 1	.0	U	TM(Zone/East/N	lorth): 10	.319014.	503808	5	. The state of the	in som november	Sam	ple Type:	Rando	om
Length (km)	: .30	Cou	upling: Coupled	-	Magn	itude:	1				GC Zone:	SBS	
Gradient (%)			ement: Frequent	ly Confin		Order:				Open	water: Abs	ent	
US Elev (m)	: 1015 —	is	lands: NONE		Ripa	rian Ve	getal	tion: Conit	erous				
Bars: None	✓ Side	Diagonal	Mid-channel	Span	Bra	id 🗌	La	nduse: No	ne/natural				
					SITE	4.46			900 W.		# 15 A.		高麗鏡
Site #:		Field UTM GIS UTI	i 10.319111.603 Vi	7853		Agen Agen	•	C016 lame: FINS	Crew: Consultin	MJ/MG g Ltd.	Date:	2001-0	9-24
				C	HANN	EL	ÇVÎ ÇA ÇTÂV	36 VE	ici ya				
No Vis.Ch.:	ntermitt	ent: 🔲		Avg	Min	Max	#]		A	/g Min	Max	#
Dewatered:	[] Tril		nannel Width (m)	4	0.5	0.9	6		Gradier		25 5	9	4
Stage: Low	¥		Vetted Width (m)		0.200	0.5	6	⊣ └⁵	Pool Depth	(m): 0.	14 0.090	0.21	5
Med			ankfull Depth (m)	0.27	0.2	0.3	3		•	Turbidity.			Low
High	☐ 1 6	mp (C): 7	pH: 7.4			nductiv		U Legis de Listado	SACTION CONTRACTOR	Sinoan meet	Moderate		Clear 🗹
					PHO			deS didio ■					
ì	: Dominant: Subdominant:		D95 (cm): 1 D (cm): 3		8	ars: No	n 🔯	Side	_ Diagor	nal 🔛 1	Mid-channe	-	pan
	ittem: Sinuous		Islands: No		DISTUR	RANCE	_)1 B1	B2 B	13 D1	D2 I	12	
l .	pling: Coupled		isialius. N	Ji i G	INDICA		Г			5			
Į.	ment: Confine				C1 (22 C	3	C4 C5	S1	S2 5	3 S4	S5	
Morph	ology: CP	Cascade Pool		-									
					COVE	R	405 2 446		N. F. C.				
Total Cover:	Trace		Туре:	SWD	LWD	В		U	DP	OV	IV]	
LWD:	Few	_	Amount:	T	T	T		S	D	Ţ	N]	
LWD Dist:	Evenly Distrib	uted	Location: P/S/O:							V		FS	z: 🗌
Right Bank:	Shape: V	-shape Text	ure: Fines 🗹 G	ravel 🗸 (Cobble	Bould	ler 🗌	Rock	Manmad	de 🗌	Cr	own Clo	sure
Left Bank:	Shape: V		ure: Fines 🗹 G	ravel 🗹	Cobble	Bould	ler 🗌	Rock	Manmad	de 🗌		21-	40%
Right Bank:	Rip.Veg: Co	oniferous		ge: Matur					1		г.	Π.,	
Left Bank:	Rip.Veg:		Sta	ge: Matur	e forest		ln	stream Ve	g: None (V Alga	e Moss	∐ Vas	cular
20 X					FISH							10 m	
Site Number	Capture Method	Number of Events	Length fished (m)	Tota Time		oltage		Species	Total Fish	1	inimum igth (mm)		imum h (mm)
163	EF	1	100	38 se		600		NFC	0		iger (min)	Lengi	()
Rol#:6,Fr			127 , Direction 128 , Direction	: U , SC	ALE/CO	MMEN		am bag	0	<u> </u>			<u> </u>
SITE CARD	: site=UTM			5 , 50				am bay					
MORPHOLO													
			ant gravels, bu · too shallow - ;				s ha	itch.					
			al stream, hab				ı (if a	any). Like	ly too fas	t flow at	that time.	Stream	1
			xhibits signs of					• •	•				
													İ
L	·										· · · · · ·		

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

2.0

ILP#

			STR	EAM!	REFE	REN	:ING					1.0
Gazetted Nan	ne:					Lo	cal Nan	ıe:				Ì
Watershed Co	ode: 480-9277	00-78100-000	000-0000-0000-00	00-000-00	0-000-0	00-000		ILP M	ap #:		ILP	#:
				<i>0.</i> /2. ■ R	EAC	H,						
Reach #: 2.	0	ט	TM(Zone/East/N	orth): 10.	318823.	6038365			One of the same of	Sample	Туре:	Random
Length (km):			pling: Decouple	•		itude:	1			BGC	Zone: S	SBS
Gradient (%):			ement: Unconfine	ed		Order: 1		.		Open w	ater: Abse	nt
US Elev (m):			lands: NONE	ر ٦		rian Vege						
Bars: None	Side	Diagonal	Mid-channel _	∫ Span i			Landus	e: Non	e/natural	ASSESS THE STATE OF		1 - 0 - 2 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
				表表示的	SITE	a entire since the a			44.74[10.97]	toka Aly	_	
Site #:			10.318977.603	B127			C016	FINS	Crew: Consulting	MJ/MG	Date: 2	2001-09-24
Site Length (m). 100	GIS UTI	n Ostativatens	ंड. <u>े</u>	DAME		y Ivaille.	-1.10	Cata Add Ca	with series	verenici.	
[Avg	HANN Min	Max	#	MET AT SALE	SECTION AND AND ADDRESS.	Avg	Min	Max #
No Vis.Ch.: Dewatered:	Intermitte	=	annel Width (m):	1.02		1.600	6		Gradient			5 4
_	_		Vetted Width (m):	0.78	0.300	1.5	6	Po	ool Depth (m): 0.31	0.280	0.35 4
Stage: Low Med	=	Ba	ankfull Depth (m):	0.37	0.3	0.4	3		To	urbidity.:	Turbid [Low
High [Ten	np (C): 7	pH: 7.4		Co	onductivit	y: 40			1	Moderate _	_ Clear ✓
				MOR	PHO	LOGY	建锑					
Bed Material: Dominant: Fines D95 (cm): 20.00 Bars: Non 🗹 Side 🗌 Diagonal 🗌 Mid-channel 🗀 Span 🗍 Braid												
1	Subdominant: C		D (cm): 2					5 4	DO DO	. 54	D0 D	o Blaid
	ttern: Irregular. oling: Decouple		Islands: No	one	DISTUR	ATORS	01	<u>B1</u> ☐	B2 B3	D1 	D2 D:	
ł .	ment: Occasio				C1 ·	C2 C	C4	C5	S1 :	S2 S3	S4	S5
}		Riffle Pool		-								
		18 March 1940			COVE	R						
Total Cover:	Moderate		Type:	SWD	LWD	В	T	U	DP	OV	IV	
LWD:	Few		Amount:	T	T	S		s	D	T	T	
	Evenly Distribu	uted	Location: P/S/O:	Y	Y							FSZ:
Right Bank:	Shape: Un		ure: Fines 🗹 G					ock 🗀	Manmade	\equiv	Cro	own Closure
Left Bank:	Shape: Un		rure: Fines 🗹 G				er∐ R	ock	Manmade	e[_]		21-40%
Right Bank: Left Bank:	Rip.Veg: Sh Rip.Veg:	rubs		ge: Not A ge: Not A			Instre	am Ve	g: None	Algae	✓ Moss	▼ Vascular 🗌
Lon Dania.	Tup. Tog.	William was a single feet for	es de disensi de de de la comunicación	d de Product à			લાંગાના કે છે.	ar fares.	200000000000000000000000000000000000000	###555	0.000	
04 N	64	Number of	Length fished	Tota	FISI	Voltage	Sno	cies	Total	Min	imum	Maximum
Site Number	Capture Method	Events	(m)	Tim	1	• oimge	0,00		Fish		th (mm)	Length (mm)
164	EF	1	100	77 se	ЭС	600	N	FC	0			
Rol#:6.Fr	ame#7,CD	#1, Image#	129 , Direction	n: U , SC	ALE/CO	OMMEN	T: cam	bag				
Roll#: 6, Fra		#1, Image#	130 , Direction	1: D , SC	ALE/CC	JMMEN	i: cam	bag				
MORPHOLO	GY : Flows	over organic	steps through	shrubby	сопідо	r within :	shallow	gully	sparsely f	orested	by conife	rs.
SPAWNING			suitable substr	ate.								
OVERWINT	ERING HABI	TAT : none	- too shallow.						h A			
OTHER HAE	BITAT : Smal	I seasonal s	tream indicated	t by strai	nots of d	ned alga	e and	ueimiu	s. Mucky	hoor ou	janic sieț	ю.
1												

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

2.0

093K.041

	ST	REAMR	EFERI	NCIN	G					
Gazetted Name:				Local Na	ame:					
Watershed Code: 000-000000-000	000-00000-0000-0000-0	000-000-000	-000-000-0	00	ILP	Map #: 093K.0-	41	ILP	# : 410	06
		. R∣	EACH						- 6	
Reach #: 2.0	UTM(Zone/East/	iorth): 10.3	15524.6037	148	37-127-43		Sample 1	Type:	Random	Cut a beautiful
Length (km): .72	Coupling: Decouple		Magnitud	e: 1			BGC Z	one: E	SSF	
	onfinement: Occasion	nally Con	Orde				pen wat	er: Abse	nt	
US Elev (m): 1153	Islands: NONE		Riparian '	,						
Bars: None ✓ Side ☐ Diagor	al Mid-channel	_ Span _	」Braid L	Landu	ise: Oth	ner	alian de la	A 188 188 188 188	4 Tel (1700)	esterates.
Site #: 165 Fiel	d UTM 10.315639.603		AND SHAPE OF SHAPE				(April 1995)	90(230)89 -		F446
	IS UTM	17482	-	ency: C01 ency Nam		Crew: MJ Consulting Ltd	/MG I.	Date: 2	2001-09-19	'
		CH	ANNEL	胡雀, 张	海滨					
No Vis.Ch.: Intermittent:		Avg 1	Viin Max	#			Avg	Min	Max	#
Dewatered: Tribs.:	Channel Width (m)		0 0	0		Gradient %:	30.00	25		2
Stage: Low	Wetted Width (m) Bankfull Depth (m)		0 0	0		Pool Depth (m):	0.00	0	0	<u> </u>
Med Temp (C):	pH:	. 0.00	Conduc	لت		Turbi	•	Turbid derate	Lov	= $ $
right (O).	γ	WADD	HOLO		VISSER S		NO.	Colors	_ Ciea	
Bed Material: Dominant:	D95 (cm):	MURE	Bars:		Side	Diagonal [7 Naid a	channel	Span	
Subdominant	D (cm):		Dais.	Won	Side	Diagonal [ulainiei :	Span Braid	$=$ \square
Channel Pattern:	islands:	Di	ISTURBAN	CE 01	B1	B2 B3	D1 D	D2 D3		
Coupling:	iolarido.		NDICATOR				<u> iii ii</u>		ī	
Confinement:		c	C1 C2	C3 C4	C	S1 S2	S3	S4 :	S5	
Morphology:		Ī								
		C (OVER	¥10836			1850	4/8/0	1. J. 18. 18. 18. 18. 18. 18. 18. 18. 18. 18	87 W.
Total Cover:	Type:	SWD	LWD	В	U	DP C	V	ſV		
LWD:	Amount:									
LWD Dist:	Location: P/S/O:								FSZ:]
Right Bank: Shape:		=	=	=	Rock _	Manmade		Cro	vn Closure	,
Left Bank: Shape:			bble Bo	ulder F	Rock] Manmade				
Right Bank: Rip.Veg: Left Bank: Rip.Veg:	Sta Sta	-		Inetra	av Mac	g: None 🗀 A	linae 🗌	Moss	Vascula	
Lok Barne Trip. Fog.	Old Control	gu. Cabarrana		URES		g. None /	Terricisco	with States		45-2014-4
NID Map NID Type Hg	Method La	Method		noto		AirPhol			UTM (2	Z/E/NI)
93K.041 31651 BMA	Method Lg	GE	R:	F:	L: I	AllFilo	#.		O I W (2	<u> </u>
Comments: No drainage at mapp	ed location.			1 1	1.7.1					
SITE CARD : site=UTM SITE CARD : site is at road cros									:	
SITE CARD: Site is at road cross SITE CARD: Not any kind of dra OTHER HABITAT: No fish habit	inage at mapped lo	cation or w	ithin 150m	radius. J	ust for	est on 25-409	% slope.			
OTTEN OF A TOTAL ROLL	ai.									
•										

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP# 10 093K.041 41009 STREAM REFERENCING **Gazetted Name:** Local Name: ILP Map #: 093K.041 41009 Reach #: 1.0 UTM(Zone/East/North): 10.316399.6039572 Sample Type: Length (km): .77 Coupling: Decoupled Magnitude: 3 BGC Zone: ESSF Gradient (%): 6.8 Confinement: Occasionally Con Order: 2 Open water: Absent US Elev (m): 1069 Islands: NONE Riparian Vegetation: Coniferous Bars: None 🗹 Side 🗌 Diagonal 🗌 Mid-channel 🗌 Span 🗍 Braid 🔲 Landuse: None/natural SITE Field UTM 10.316345.6039201 Agency: C016 Date: 2001-09-21 Site #: 166 Crew: MUMG Site Length (m): 100 GIS UTM.. Agency Name: FINS Consulting Ltd. The second second second second CHANNEL Min No Vis.Ch.: Intermittent: Avg Max # # 0.300 Channel Width (m): 0.75 1.200 Dewatered: Tribs.: 6 Gradient % 5.25 Wetted Width (m): 0.42 Pool Depth (m): 0.21 0.170 5 0 6 1 Stage: Low Bankfull Depth (m): 0.2 0.2 Med 🗸 Turbidity.: Turbid Low 🗸 High Temp (C): 8 pH: 6.6 Conductivity: 60 Moderate Clear MORPHOLOGY Bed Material: Dominant: Fines D95 (cm): 15.00 Side Diagonal D (cm): 2.00 Braid Subdominant: Gravels Channel Pattern: Irregular, Wandering Islands: None DISTURBANCE 01 **INDICATORS** Coupling: Partially Coupled Confinement: Occasionally Confine C4 C5 S1 Morphology: RP Riffle Pool SWD LWD DP OV iV Total Cover, Moderate Type В Amount S LWD: None Location: P/S/O: FSZ: LWD Dist: Not Applicable Shape: V - shape Texture: Fines ♥ Gravel ♥ Cobble Boulder Rock Manmade Crown Closure Right Bank: Shape: V - shape Texture: Fines ✔ Gravel ✔ Cobble Boulder Rock Manmade 21-40% Left Bank: Right Bank: Rip.Veg: Coniferous Stage: Mature forest Instream Veg: None Algae Moss Vascular Left Bank: Stage: Mature forest Rip.Veg: FISH Total Minimum Site Number Total Voltage Lenath fished Capture Number of Fish Length (mm) Length (mm) Method Events (m) Time EF 100 76 sec 600 NEC 0 Roll#: 2, Frame# 5, CD# 1, Image# 30, Direction: U, SCALE/COMMENT: boot Roll#: 2, Frame#6, CD#1, Image#31, Direction: D, SCALE/COMMENT: cam bag SITE CARD: site=UTM MORPHOLOGY: Flows through 3m deep swale, sparsely forested by conifers. SPAWNING HABITAT: None - too many fines. REARING HABITAT: Unlikely due to acidic water and seasonal flow. Not suitable habitat for rainbow trout. OVERWINTERING HABITAT: None - too shallow. OTHER HABITAT: Small intermittent trickle dewatered mainly in steeper sections where gravel and cobble more abundant. In low gradient sections it is mainly stagnant pools and very slow flow, filled with algae.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

Watershed Code: 480-927700-85400-0000-0000-0000-000-000-000-000-000

2.0

			STR	EAN	REF	ERE	N C I I	V G		Ž.			
Gazetted Na	me:						Local	Name:					
Watershed C	ode: 480-927	700-85400-00	000-0000-0000-0	00-000-0	00-000-	000-000)	ILP	Map #:		ILI	P #:	
				I	REAC	H:	na.						
Reach #: 2	.0	U	TM(Zone/East/N	orth): 10	.312236	5.603811	11			Sample	Type:	Biase	d
Length (km):	: 4.90	Cou	ipling: Partially (Coupl	Mag	nitude:	11			BGC 2	Zone:	SBS	
Gradient (%):			ement: Unconfine			Order:	3		•	Open wa	ter: Pre	sent	
US Elev (m):			lands: Occasion	al		_	egetati	on: Wet	land				
Bars: None	✓ Side _	Diagonal	Mid-channel	Span		aid 📗	Land	duse: O	ther		···		
				T-15.7	SIT	E	No.				色质。	10 AT V	
Site #: Site Length		Field UTM GIS UT!	i 10.314733.603 vi	8588		•	ncy: Co ncy Na		Crew: M S Consulting Li	J/MG d.	Date:	2001-09	7-22
				. C	HAN	NEL					er iki	(T. U.S.)	12 16 47
No Vis.Ch.:	Intermitte	ent: 🔲		Avg	Min	Max	#]		Avg	Min	Max	#
Dewatered:	Trib	s.: 🗌 Ct	annel Width (m):	3.50	3	4	2	1 C	Gradient %	: 0.00	0	0	2
Stage: Low			Vetted Width (m):	3.50	3	4	2] [Pool Depth (m	: 0.00	0	0	2
Med	✓	B	ankfuli Depth (m):	0.63	0.6	0.7	3	J	Turt	oidity.:	Turbid		Low 🗸
High	Te	mp (C): 9	pH: 6.2		C	Conducti	vity: 50			M	oderate	c	lear 🗌
				MOR	PHO	LOG	Y					AVEN.	
Bed Material: Dominant: Fines D95 (cm): 0.01 Bars: Non ☑ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Subdominant: Not Applicable D (cm): 0.01													
Subdominant: Not Applicable D (cm): 0.01													
ł.	ttem: Sinuous		Islands: Oc	casiona				B1	B2 B3	D1	D2 [03	
1	pling: Partially	•				ATORS		1111			ЩЦ		1
i	ment: Occasio	-	1	-	C1	C2 4	C3 (C4 C	5 S1 S2	S3	S4	S5	
iviorpho	ology: LC	Large Channe	1	-		Ш			<u> </u>				
				12.5.2	COVI	R				26. 异素	1,661.00	(1) 富有	
Total Cover:	Moderate		Type:	SWD	LWC		В	U		ov	١٧]	
LWD:	None		Amount: Location: P/S/O:	T	T		N I	S	N	T	D	ł	_
LWD Dist:	Not Applicable	•	LOCALOII, 1707O.			اللاليا		<u> </u>				FSZ	<u>:</u> []
Right Bank:	Shape: Sh	. • .	ure: Fines 🗹 Gr		Cobble	_	=	Rock	Manmade]	Cr	own Clos	ı
Left Bank:	Shape: Sh		ure: Fines 🗹 Gr		Cobble		der	Rock	Manmade _	ال		1-20	0%
Right Bank:	Rip.Veg: W	etland		e: Not Ap			1	4	eg: None 🗌	A1 5	7	M 1/22	
Left Bank:	Rip.Veg:		Stat	ge: Not Ap	ppiicabii	3 	ins	tream v	eg. None	Aigae (V) MOSS	V Vasi	Culai 💽
	$J_{ij} = J_{ij} = J_{ij}$				FIS	H						11.02	
Site Number	Capture Method	Number of Events	Length fished (m)	Tota Time		Voltage	,	species	Total Fish	Minin Length			imum h (mm)
167	EF	1	20	38 se	1	800		LKC	1	7		_	71
167	MT	6		9330 n	- 1	000		NFC	0	·	•		•
167	MT	6	 	9330 n			-	LKC	324	4	1	1:	24
Roll#:4.Fr	ame# 10 . C	D# 1 . Image	# 83 , Direction	: U . SC	ALE/C	OMME	NT: a	ilvert					
Rol#:4,Fr	ame# 11 , C		# 84 , Direction										
SITE CARD													
SITE CARD			f reach 1. It documented	in thic ra	ach b	ut biabl	v doui	othal day	a to lack of su	itable b	ahitatl i	No mint	now trous
captured in e			n cocumented	111 11112 16	aui, o	ut mym	y doui	טונו מנו	S TO TACK OF SC	illable III	aunan: i	NO TAILL	JOW HOU
WATERBOD	OY : Very dec	ep - anode ra	nge not very et	ffective.	Abunda	ant LKO	in M	l's, no	other species	presen	. Poter	ntially no	ot
identified cor			1	. هدين ال			OT			1			
			as located in C andish reach w									nterino I	hahitat
Good habita		-	andian readil W	110 36	an : POT IN		., .N 3		y, in realing	and IN	O 4 O 1 44 []	c.nig i	iasilat.
1													

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

3.0

	STR	LEAM	REF	EREN	CING	and the		5 E			
Gazetted Name:				Ł	ocal Nan	ne:					
Watershed Code: 480-927700-854	00-00000-0000-0000-0	00-000-00	0-000-0	000-000		ILP M	ap #:		ILI	P#:	
	1900 P	F	REAC	H							
Reach #: 3.0	UTM(Zone/East/N	orth): 10.	.312007.	.603818	3			Sample	Туре:	Biase	ď
Length (km): .25	Coupling: Coupled		Magr	nitude:	2			BGC	Zone:	ESSF	
` -	onfinement: Frequent	y Confin		Order:		A		pen wa	ter: Abs	ent	
US Elev (m): 1044	Islands: NONE	ا ا			etation:						:
Bars: None ✔ Side ☐ Diagon	al Mid-channel	_ Span ∣	1	aid [_]	Landus	e: None	e/natural	885 S. 15004 SF	or the graph of the	Š. sidenski	(25) (SSE) (SV
City #100 Eigh	TM 40 242220 602	21/2/2/2/2 0440	SITE	(NO ANAMA) EN	- C046		C N	1040	D-4-	2004.00	40
	DUTM 10.312220.603 SUTM	8110		•	y: C016 cv Name:	FINS (Crew: M. Consulting Ltd	J/MG d.	Date:	2001-09	L19
		C	HANN			ing Allen	•				
No Vis.Ch.: ☐ Intermittent: ✔		Avg	Min	Max	# 1	yaa yaasan		Avg	Min	Max	#
Dewatered: Tribs.:	Channel Width (m):		0.800	1.700	6		Gradient %	<u> </u>	4	13	4
Stage: Low 🗸	Wetted Width (m):	0.45	0	1.200	6	Po	xol Depth (m)	0.53	0.53	0.53	1
Med 🗌	Bankfull Depth (m)	0.30	0.3	0.3	3		Turb	idity.:	Turbid	==	Low
High Temp (C):	6 pH: 7.1	No. of Designation Sci. 22		onductiv		407- U.S.D.	nerdoranene militaren	M	oderate	C	lear 🗹
		· 1. · - p. · - · · · · p. r	PHO				1				
Bed Material: Dominant: Cobble Subdominant: Gravets	D95 (cm): 20 D (cm): 4		B	sars: No	n' ⊻ S	ide	Diagonal	Mid	-channel		oan 🔛
Channel Pattern: Sinuous	Islands: No		DISTUR	BANCE	01	В1	B2 B3	Ω1	D2 E	3	
Coupling: Coupled	isiands. No	,,,,,		ATORS		ĎΙ		ĎЦ			
Confinement: Frequently Conf	ined		C1	C2 C	3 C4	C5	S1 S2	S3	S4	S5	•
Morphology: CP Cascade	e Pool	_	Y								
		. C	OVE	R							
Total Cover. Trace	Type:	SWD	LWD	В		J		OV	IV	1	
LWD: Few	Amount: Location: P/S/O:	N	T	S	1	۷	D	T	T	ł	_
LWD Dist: Evenly Distributed	Li									FSZ	
Right Bank: Shape: V - shape	Texture: Fines G		_	_		xck 📋	Manmade _	<u>)</u>	Cr	own Clos	
Left Bank: Shape: V - shape Right Bank: Rip.Veg: Shrubs	Texture: Fines Gr	aveil v (ge: Not Ap	_		er∐ Ko	xck	Manmade _			21-4	0%
Left Bank: Rip.Veg:	•	ge: Not Ap	•		Instrea	m Veg	: None	Algae [Moss	✓ Vaso	cular 🗌
		- 10 × 10 × 10 × 10	FISI	period and	×3694594		4 4 m h t				
Site Number Capture Numb	er of Length fished	Tota	reconstruction of	Voltage	Spec	ies:	Total	Minir	num	Maxi	mum
Method Eve	` '	Time	1	_		_	Fish	Lengti	(mm)	Lengt	h (mm)
168 EF 1	200	168 se	вс	600	NF	С	0				
Rol#: 2, Frame# 23, CD# 1, II Rol#: 2, Frame# 24, CD# 1, II						oag					
SITE CARD: site=UTM	nager 43 , Director	. D , OO		7141141 ∟11	1. 0000						
SITE CARD: Presence of freshy MORPHOLOGY: Flows through		es fish ab	sence.								
SPAWNING HABITAT : None - a	· .										
REARING HABITAT : Poor to fa	•		er. Wat	er trickl	es down	betwe	en cobbles	, some	shallow	pools.	
OVERWINTERING HABITAT : N COVER : Poor salmonid habitat			ol in ent	ire 200ı	n site ler	ngth.					
1											

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

IIP#

STREAM REFERENCING. **Gazetted Name:** Local Name ILP Map #: ILP#: REACH Reach #: 5.0 UTM(Zone/East/North): 10.311222.6039218 Sample Type: Biased Length (km): .73 Coupling: Partially Coupl Magnitude: 1 **BGC Zone:** ESSF Gradient (%): 10.0 Confinement: Frequently Confin Order: 1 Open water: Absent US Elev (m): 1136 Islands: NONE Riparian Vegetation: Coniferous Bars: None 🗹 Side 🗌 Diagonal 🗌 Mid-channel 🗍 Span 🗍 Braid 🗍 Landuse: Logging, to banks SITE Field UTM 10.311102.6038588 Agency: C016 Crew: MJ/MG Date: 2001-09-19 Site Length (m): 150 GIS UTM.. Agency Name: FINS Consulting Ltd. CHANNEL No Vis.Ch.: Intermittent: Min Min Avg Max # Avg # Channel Width (m): Dewatered: Tribs.: 0.00 0 0 0 Gradient % 0.00 ō 0 0 Wetted Width (m): 0.00 0 0 0 Pool Depth (m): 0.00 0 Stage: Low Bankfull Depth (m): 0.00 ō 0 0 Med Turbidity.: Turbid Low High Temp (C): Conductivity Moderate Clear MORPHOLOGY Red Material: Dominant: Side Diagonal Mid-channel D95 (cm): Bars: Non Subdominant: D (cm): Braid 🗌 Channel Pattern: Islands: DISTURBANCE B1 B2 INDICATORS Coupling: СЗ Confinement: C4 C5 S1 **S2** S3 Morphology: SWD LWD DP ΟV Total Cover: Type В IV Amount I WD Location: P/S/O: FSZ: LWD Dist: Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Crown Closure Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Left Bank: Shape: Right Bank: Rip.Veg: Stage: Left Bank: Rip.Veg: Stage: Instream Veg: None Algae Moss Vascular SITE CARD: site=UTM SITE CARD: Two seepages, 50m apart. OTHER HABITAT: Seepage with only intermittent channel, no fluvium, no continuous banks or stream bed. Not an FPC stream.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach# ILP Map # ILP # 2.0 093K.041 41013

		•	STR	EAM	REF	EREN	CIN	3					
Gazetted Nam	e:					L	ocal Na	me:					1
Watershed Co	de: 000-0000	00-00000-000	0-0000-0000-00	0-000-0	00-000-	000-000		ILP Ma	p #: 093K.04	1	ILP	#: 41	1013
					REA	CH							
Reach #: 2.0)	UT	M(Zone/East/No	orth): 10	.31428	6.6039303	3		s	ample '	•	Biased	
Length (km):	.53	-	ling: Decoupled		Mag	gnitude:	5		_		one: E		1
Gradient (%):			nent: Occasiona Inds: NONE	illy Con	Din	Order: arian Ve		· Conifer		oen wat	er: Abse	m	
US Elev (m):				Span		raid	•		ing, with rese	ves.			
Bars: None	Side	Diagonal	Mid-channel	Span	SIT		Lando	se. Logg	ing, marrese	arangi.	James 190		
			40.044604.0000	FEO.	31	2.141.12	cy: C01	6	Crew: MJ	MG	Date:	2001-09	19
Site #: Site Length (GIS UTM	10.314691.6039	536		-	-		Consulting Ltd		Dailo.		
One Lengary	- 37.5 SERVICE	0.00		C	HAN			140 A/A				THE STATE	
No Vis.Ch.:	Intermitte	nt 🗀		Avg	Min	Max	# 1	2 22 20 7 20 20 20		Avg	Min	Max	#]
Dewatered:	Tribs	= =	nnel Width (m):	1.38	1.100	1.600	6		Gradient %:	1.25	1	2	4
Stage: Low	7		etted Width (m):	0.58	0.300		6	Po	ol Depth (m):	0.22	0.08	0.340	6
Med		Ва	nkfull Depth (m):	0.37	0.3	0.4	3		Turbi	•	Turbid _		_ow lear ✔
High [Ter	np (C): 7	pH: 7.4			Conductiv	- Cara Militaria	and the same of the	era era alaman era	IVR	oderate		ear 💌
				0-1-186	RPH (OLOG				78.02.4 7			oan 🗌
1	Dominant: 0 ubdominant: F		D95 (cm): 12 D (cm): 3.			Bars: No	n 🗹	Side	Diagonal	_) Mio-	-channel		aid 🔲
			Islands: No		DISTI	JRBANCE	01	В1	B2 B3	D1	D2 D	3	
}	ttem: Irregular bling: Decouple		15141105. 140	116		CATORS							
1	nent: Occasio				C1	C2 (3 C	4 C5	S1 S2	S3	S4	S5	
Morpho	logy: RP	Riffle Pool											
100	2.7				COV	ER .	16.05	ALSON A					* * Z
Total Cover:	Moderate		Type:	SWD	LW		3	U		s I	IV T		
LWD:	None	<u> </u>	Amount: ocation: P/S/O:	<u>T</u>	N			S	D			FSZ	
LWD Dist:	Not Applicable	, <u> </u>	i		ــــــــــــــــــــــــــــــــــــــ		ے ریاب			<u> </u>		own Clos	_
Right Bank:	Shape: Un		ire: Fines 🗹 Gr ire: Fines 🗹 Gr					Rock Rock	Manmade Manmade	_	Cit	41-7	
Left Bank: Right Bank:	Shape: Ur Rip.Veg: Sh			ge: Not				_	_	•		_	
Left Bank:	Rip.Veg:		Stag	ge: Not	Applicat	ole	Inst	ream Veg	: None	Algae 1	✓ Moss	√ Vas	culari
70					FIS	S H	of a	164			100	- N	
Site Number	Capture	Number of	Length fished	To		Voltage	S	pecies	Total	Minis			imum h (mm)
	Method	Events	(m)	Tir	1	700		NEC	Fish 0	Lengu	h (mm)	Lengi	21 (111111)
170	EF	1	150	187		700		NFC				<u> </u>	
Rol#:2,Fr	ame# 19 , Cl ame# 20 , Cl	D#1,Image D#1,Image	# 44 , Direction # 45 , Direction	i: 0 , S i: D , S	CALE/	COMME	NT: mg	l					•
ISITE CARD	: site=UTM												
ISITE CARD	 Annroxima 	tely 1cm thick	n from parent s detritus on su	ıbstrate	: .								
INCOPPLOIG	CV · Flowe	through 15m	wide valley in ks spawning h	incised	chann	el with a	bundar	nt overst ed oravel	ream vegeta I natches ob	ition. served	. But fin	es furth	er
linhihit snawi	nino potentia	L.											
REARING H	ABITAT : GO	ood at higher	flow but pretty too shallow a	limited	now to	o very fet significar	w deep at flow	er pools	-				
OTHER HA	SITAT : Low	to moderate	year-round hat	oitat va	lue for	rainbow	trout.						

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map # ILP # 4.0 093K.041 41013

						STR	EAM	REF	ERE	VCI	N G					ja.	
Gazetted Nar	ne:									Local	Name	: :					
Watershed C	ode: 00	0-00000	0-00000-0	0000	0-0000-0	00-00	0-000-0	000-000	000-000		1	LP Ma	p #: 093K.04	1	ILP	#: 4	1013
	la la							REA	CH.	71.736 Vings							
Reach #: 4	.0				M(Zone/E		•						s	ample '	•-	Biase	đ
Length (km):				•	ing: Par	-		•	gnitude:				0		Zone: E ter: Abse		
Gradient (%):			Conf		nent: Fre inds: NO		Confin		Order: arian Ve		ion: C	onifer		pen wa	lei, Aust	31 14	
US Elev (m):							1 0		raid					n/De			
Bars: None	✓ Sid	e L C	iagonal	<u> </u>	Mid-char	nnei [_	Span			Lan	ouse	LUGG	ng, with rese		Server	. Witers	andria.
							eff by the	SIT	- 140 Mg - 54 10	1000							art some
Site #: Site Length)	Field U		10.31375 	52.6039	616			ncy: C ency Na		INS C	Crew: MJ onsulting Ltd	MG	Date:	2001-09	J-19
		e diake				3.195	C	HAN	NEL			1.50		18.7 Sh			
No Vis.Ch.:	Internation	ermitten	r 🐼	more side	es mandionisti		Avg	Min	Max	#	٦			Avg	Min	Max	#
Dewatered:	=	Tribs.	= -	Cha	nnel Wid	th (m):	1.05	0.600	1.8	6	7		Gradient %:	4.00	2	7	4
	_			We	etted Wid	th (m):	0.78	0.300	1.600	6]	Pod	ol Depth (m):	0.35	0.29	0.41	5
Stage: Low Bankfull Depth (m): 0.30 0.3 0.3 3 Turbidity.: Turbid Low Med																	
High ☐ Temp (C): 6 pH: 7.2 Conductivity: 50 Moderate ☐ Clear ☑																	
MORPHOLOGY																	
Bed Materia	l: Dom	inant: Co	obble		D95 (c	:m): 25	6.00		Bars: N	lon 🗹	Si	de 🗌	Diagonal [] Mid	-channe		pan 🔲
Bed Material: Dominant: Cobble D95 (cm): 25.00 Bars: Non ☑ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Subdominant: Gravels D (cm): 3.00																	
Channel Pa	attern: S	inuous			Islar	nds: No	ne		JRBANC)1	B1	B2 B3	D1	D2 [3	
Cou	pling: C	oupled						INDI	CATORS	S				Ш		للـ	
Confine	ment: C	Confined						C1	C2	C3	C4	C5	S1 S2	S3	S4	S5	
Morph	ology:	SP S	tep Pool														
					P. State		(417) 1	COV	ER	Willia.	ŽŽ.	為政治					
Total Cover.	Abunda	ant	,-			Type:	SWD	LW	O O	В	ι		DP (OV	IV.]	
LWD:	Eou		_			nount:	T	Ţ		s			D	T .	T	4	
LWD Dist:		Distribut	led	L	ocation: I	P/S/0:					V					FS	z: 🗌
Right Bank	: Sha	ape: V - :	shape T	extu	re: Fines	✓ Gr	ravei 🗸	Cobble	Bot	ulder	Ro	ck 🗌	Manmade]	C	rown Clo	sure
Left Bank		ape: V -	shape 1	Γextu	ıre: Fines	Gr	ravel 🗸	Cobbi	e 🗹 Boı	ulder	Ro	ck 🗌	Manmade]		21-	40%
Right Bank	: Rip.	Veg: Cor	riferous				•	ure fores					: None	٠ 5		□ va	ander [
Left Bank	: Rip.	Veg:				Sta	ge: Mat	ure fores				m Veg	: None	Algae I	IVIOSS	va:	SCURI L
38									FEAT	UR	E.S						
NID Map	NID	Туре	Hgt	N	Method	Lg		thod		hoto	- '		AirPho	to #:		יט	M (Z/E/
93K.041	31711	C	2.5		GE	6	H	C I	R: 2	F:	16	L:		#-		L	
Comment	s: 2/%	siope, in	ipassaoie	10 1	ISII.									41000000000000000000000000000000000000	La Carrie de la Carrie	0754456	5256 Table
	100			g.4.	(A) (A)			S F L	Mar Restriction		19.16						
Site Number		ture thod	Number Event		Length (m			otal me	Voltaç	je	Spe	ies	Total Fish		mum h (mm)		cimum pth (mm)
171		EF	1		6	0	98	sec	700		NF	С	0			1	
Roll#: 2, Frame# 16, CD# 1, Image# 41, Direction: U, SCALE/COMMENT: mg - cascade in features. Roll#: 2, Frame# 17, CD# 1, Image# 42, Direction: U, SCALE/COMMENT: boot Roll#: 2, Frame# 18, CD# 1, Image# 43, Direction: D, SCALE/COMMENT: cam bag SITE CARD: site=UTM SITE CARD: Unlikely fish use due to wetland in reach 1 and 3 - impedes fish access from parent stream. MORPHOLOGY: Water dissipates at lower reach boundary, but flow from cascade d/s in steeper gradient section. MORPHOLOGY: Flows through gully. Only 60m watered section. SPAWNING HABITAT: Gravel frequent in pool areas. REARING HABITAT: Good. OVERWINTERING HABITAT: Pools suitable for overwintering habitat.																	
OVERWIN	TERINO BITAT	G HABI : Nice	IAT : Po creek be	ools ools	suitable cascade	tor ov e, has	erwinte good h	enng na nabitat y	abitat. year-rot	ınd.							

BFP FFHI 2001 - Upper Pinkut Watershed

Watershed Code: 480-927700-85400-27100-0000-0000-000-000-000-000-000

Reach # ILP Map #

11 P#

STREAM REFERENCING **Gazetted Name:** Local Name: ILP#: ILP Map #: UTM(Zone/East/North): 10.314575.6038257 Sample Type: Reach #: 1.0 **BGC Zone:** ESSF Magnitude: 1 Coupling: Decoupled Length (km): .16 Confinement: Occasionally Con Order: 1 Open water: Absent Gradient (%): 8.1 Riparian Vegetation: Shrubs US Elev (m): 1033 Islands: NONE Bars: None ☑ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Braid ☐ Landuse: None/natural SITE Date: 2001-09-22 Crew: MJ/MG Agency: C016 Field UTM 10.314598.6038364 Site #: 172 Agency Name: FINS Consulting Ltd. GIS UTM .. Site Length (m): 100 CHANNEL Avg Min Max No Vis.Ch.: Intermittent: Avg 1 600 Gradient % 6 Channel Width (m): 1.10 0.7 Dewatered: Tribs.: 3 Pool Depth (m): 0.24 0.200 0.310 6 1 07 0.7 1.5 Wetted Width (m): Stage: Low Bankfull Depth (m): 0.2 3 0.17 0.1 Turbid Turbidity.: Med 🗸 Moderate Conductivity: 40 Temp (C): 8 pH: 6.9 High [MORPHOLOGY Span [Side Diagonal Mid-channel Bars: Non 🗹 D95 (cm): 0.01 Bed Material: Dominant: Fines D (cm): 0.01 Subdominant: Not Applicable DISTURBANCE Islands: None Channel Pattern: Sinuous INDICATORS Coupling: Partially Coupled **S2** C5 Confinement: Frequently Confined Morphology: LC Large Channel COVER DP ov IV SWD LWD В Type: Total Cover: Abundant D N S Amount LWD: Few Location: P/S/O: FSZ: LWD Dist: Evenly Distributed Shape: V - shape Texture: Fines ☑ Gravel ☐ Cobble ☐ Boulder ☐ Rock ☐ Manmade ☐ Crown Closure Right Bank: 41-70% Left Bank: Stage: Not Applicable Right Bank: Rip.Veg: Shrubs Instream Veg: None Algae V Moss V Vascular Stage: Not Applicable Left Bank: Rip.Veg: FISH Voltage Maximum Number of Total Length fished Site Number Capture Length (mm) Fish Length (mm) Method **Events** (m) Time 100 105 sec 600 Roll#: 4, Frame# 5, CD# 1, Image# 78, Direction: U, SCALE/COMMENT: cam bag Roll#: 4, Frame# 6, CD# 1, Image# 79, Direction: BD, SCALE/COMMENT: cam bag SITE CARD: site=UTM MORPHOLOGY: Flows through gully with dense willow shrub along banks. OTHER HABITAT: No salmonid habitat - stream filled with orange algae, likely seasonal, flows after intense 2 day rainfall. 2-3cm deep water over algae.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

0 093K.041

ILP# 41019

STREAM REFERENCING Local Name: Gazetted Name: II P Man #- 093K 041 41019 REACH UTM(Zone/East/North): 10.313775.6038040 Sample Type: Reach #: 1.0 **BGC Zone:** ESSF Coupling: Partially Coupl Magnitude: 1 Lenath (km): .73 Open water: Absent Gradient (%): 2.7 Confinement: Frequently Confin Order: 1 Islands: NONE Riparian Vegetation: Shrubs US Elev (m): 1040 Bars: None 🗹 Side 🗌 Diagonal 🔲 Mid-channel 🗍 Span 🗍 Braid 🗍 Landuse: None/natural SITE Field UTM 10.314233.6038457 Date: 2001-09-22 Site # 173 Agency Name: FINS Consulting Ltd. Site Length (m): 100 GIS UTM. CHANNEL Min # Avg No Vis.Ch.: Intermittent: Max Avg Channel Width (m): 0.00 0 0 0 Gradient %: 0.00 n Dewatered: Tribs.: n Pool Depth (m): 0.00 0 0 Wetted Width (m): 0.00 Stage: Low Bankfull Depth (m): 0.00 0 0 0 Turbid Turbidity.: Med Conductivity: Moderate ___ Clear Temp (C): pH: High | MORPHOLOGY Side Diagonal Mid-channel Span Bed Material: Dominant: D95 (cm): Braid D (cm): Subdominant: Channel Pattern: Islands: DISTURBANCE INDICATORS Coupling: C4 C5 S2 Confinement: Morphology: ΟV í۷ SWD LWD В DP Type: Total Cover: Amount LWD: Location: P/S/O: FSZ: I WD Dist: Texture: Fines Gravel Cobble Boulder Rock Manmade Crown Closure Right Bank: Texture: Fines Gravel Cobble Boulder Rock Manmade Left Bank: Shape: Stage: Right Bank: Rip.Vec: Instream Veg: None Algae Moss Vascular Stage: Left Bank: Rip.Veg: SITE CARD: site=UTM MORPHOLOGY: 10m wide valley vegetated by willows and sparse conifers. OTHER HABITAT: Seepage - no fish habitat. No water, no channel, no fluvium - not an FPC stream. Just isolated mudholes - dry, no sign of water even after 2 days of heavy rain.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

3.0 093K.041

		1,3547,514	SIR	EAM	REF	EREI	4 C I N	G					
Gazetted Nar	ne:					i	Local N	ame:					
Watershed C	ode: 000-000	000-00000-000	0-0000-0000-0	00-000-0	00-000-	000-000		ILP N	fap #: 093K.0	41	ILF	*#:	41020
					REAG	CH.							
Reach #: 3.	.0	បា	TM(Zone/East/N	orth): 10	.31315	1.603879	15			Sample	Туре:	Rando	om
Length (km):			pling: Decouple		Mag	initude:	1				Zone: i		
Gradient (%):			ment: Occasion	ally Con		Order:		٠.,		pen wa	ter: Abs	ent	
US Elev (m):			lands: NONE	٦ _		_		n: Shrub					
Bars: None	⊻ Side ∐	Diagonal L	Mid-channel _	_ Span		raid	Land	use: Non	e/natural	80-2 as 1993 s	Causean	Trock thickers	ores respires a
					SIT	Tarabanah M			# (5 (5 / M) * (• • •
Site #: Site Length		GIS UTN	10.313858.603 1	8971		-	ncy: C0 ncy Nam		Crew: Ma Consulting Lt	J/MG d.	Date:	2001-0	9-22
	100			Ç	HAN	NEL	1900						
No Vis.Ch.:	Intermitte	= -		Avg	Min	Max	#	l		Avg	Min	Max	#
Dewatered:	Trib		annel Width (m):		0	0	0	▎┝	Gradient %	 	0	0	10
Stage: Low			/etted Width (m): inkfull Depth (m)	0.00	0	0	0		ool Depth (m)	<u> </u>	0		
Med High	==	mp (C): 9	pH: 6.2	1		Conductiv		J	Turb	idity.: M	Turbid [oderate		Low
				MOR	PHO	LOG	Y						
Bed Material	: Dominant:		D95 (cm):			Bars: No	on 🗌	Side [] Diagonal [Mid	-channel		ipan 🔲
S	Subdominant:		D (cm):									B	Braid
Channel Pa			Islands:			RBANCE CATORS		B1	B2 B3	D1	D2 D	3	
1	oling:							4 C5	S1 S2	S3	54	 S5	
Confiner Morpho				-	C1			# G	31 32	33	54 	33 	
SAFET AMAZINI KANDONA MINISTRA	and and the second seco	one was server and the server	neses and the second	· N. Edwinson	ا لــا					SBC PARKS	0 40/22/8/30		and state of
-			Г - -		COV				DP	ov I	D/		
Total Cover:			Type: Amount:	SWD	LWE	' '	B	U	DP 1		١٧		
LWD: LWD Dist:		ī	ocation: P/S/O:									FS	z: 🗌
Right Bank:	Shape:	Textı	re: Fines Gr	avel	Cobble	☐ Boul	der	Rock	Manmade	7	Cn	own Clo	sure
Left Bank:	Shape:		=		Cobble	=	=	Rock _	Manmade [j			
Right Bank:	Rip.Veg:		Sta	ge:								_	_
Left Bank:	Rip.Veg:		Sta	ge:			Inst	ream Ve	g: None 📙	Algae L	_ Moss	Vas	scular
	376				FIS	H ,				194			SAK (A)
Site Number	Capture Method	Number of Events	Length fished	Tota Tim	,	Voltage	S	pecies	Total Fish	Minin Length			imum th (mm)
174	Metriod EF	Events	(m) 100	127 s		500		NFC	0	Lengu	, (11111)	reng	ui (mm)
		D#1 Image	# 85 , Direction										
SITE CARD		D# 1, III layer	O , Direction	i. A , 50	ALLIC	CIVIIVILI	11. 000	J.					
			ostly willows)										
WATERBOD OTHER HAR			vater. ish habitat - ise	olated ni	uddles	of wate	r after i	heavy ra	in. No flow.	no fluvi	um. no	chann	el - not
an FPC stream		ago mar no .	ion nabhat ha	orace p				,			,		
Ì													

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

1.0 STREAM REFERENCING **Gazetted Name:** Local Name: Watershed Code: 480-927700-85400-48400-0000-0000-000-000-000-000-000 ILP Map #: ILP #: REACH Reach #: 1.0 UTM(Zone/East/North): 10.313119.6037434 Sample Type: Biased Length (km): 1.28 Coupling: Decoupled Magnitude: 3 BGC Zone: ESSF Gradient (%): 0.5 Confinement: Unconfined Order: 2 Open water: Present US Elev (m): 1029 Islands: NONE Riparian Vegetation: Wetland Bars: None

✓ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Braid ☐ Landuse: None/natural SITE Date: 2001-09-22 Field UTM 10.313733.6038348 Agency: C016 MJ/MG Site #: 175 Crew: Agency Name: FINS Consulting Ltd. GIS UTM .. Site Length (m): 200 CHANNEL No Vis.Ch.: Intermittent: Min Max # Min # Avg Channel Width (m): 0.00 0 2 Dewatered: Tribs.: 2.67 1.5 4 6 Gradient % Wetted Width (m): Pool Depth (m): 0.00 0 6 2.67 1.5 6 4 Stage: Low Bankfull Depth (m): 0.70 0.7 0.7 3 Turbidity.: Turbid Low V Med Moderate High 🗸 Temp (C): 10 pH: 6.7 Conductivity: 40 Clear MORPHOLOGY Bed Material: Dominant: Fines D95 (cm): 0.01 Side Diagonal Mid-channel Braid Subdominant: Not Applicable D (cm): 0.01 Channel Pattern: Sinuous Islands: None DISTURBANCE INDICATORS Coupling: Decoupled Confinement: Unconfined C3 C4 C5 51 S2 Morphology: LC Large Channel COVER SWD LWD DP ov IV Total Cover: Abundant Type: B U N S D N N Amount LWD: None Location: P/S/O: FSZ: LWD Dist: Not Applicable Texture: Fines ✔ Gravel Cobble Boulder Rock Manmade Crown Closure Right Bank: Shape: Sloping (Texture: Fines ✔ Gravel Cobble Boulder Rock Manmade Left Bank: Shape: Sloping (Stage: Not Applicable Right Bank: Rip.Veg: Wetland Instream Veg: None Algae Moss Vascular V Stage: Not Applicable Left Bank: Rip.Veg: FISH Length fished Total Voltage Species Total Minimum Maximum Site Number Capture Number of Length (mm) Fish Length (mm) Method Time **Events** (m) 10 22 71 200 251 sec LKC Roll#: 4, Frame#7, CD#1, Image#80, Direction: U, SCALE/COMMENT: Mac Roll#: 4, Frame#8, CD#1, Image#81, Direction: D, SCALE/COMMENT: Mac SITE CARD: site=UTM MORPHOLOGY: Flows through sedge wetland. OTHER HABITAT: No salmonid habitat - channel filled with instream vegetation, very slow flow. Vegetation mat around 40-50cm thick in channel.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

!LF

Watershed Code: 480-927700-85400-48400-2600-0000-000-000-000-000-000-000 10 STREAM REFERENCING Local Name: **Gazetted Name:** Watershed Code: 480-927700-85400-48400-2600-0000-000-000-000-000-000-000 ii P Map #: HP# REACH. Sample Type: Biased UTM(Zone/East/North): 10.314190.6037588 Reach #: 1.0 **BGC Zone:** ESSF Magnitude: 2 Coupling: Decoupled Length (km): .68 Open water: Absent Order: 2 Gradient (%): 1.6 Confinement: Unconfined Riparian Vegetation: Wetland Islands: None Visible US Elev (m): 1037 Bars: None ✓ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Braid ☐ Landuse: None/natural SITE Date: 2001-09-22 Agency: C016 Crew: MJ/MG Field UTM 10.313735.6037760 Site #: 176 Agency Name: FINS Consulting Ltd. GIS UTM .. Site Length (m): 150 CHANNEL # Min Max No Vis.Ch.: Gradient % 0.50 0 Channel Width (m): 2.00 2 Tribs.: Dewatered: Pool Depth (m): 0.00 2 1 Wetted Width (m): 2.00 2 Stage: Low Bankfull Depth (m): 0.17 0.1 0.2 3 Low Turbidity.: Turbid Med Clear V Moderate Conductivity: 40 pH: 6.3 High 🗸 Temp (C): 9 MORPHOLOGY Side Diagonal Mid-channel ___ Bed Material: Dominant: Fines D95 (cm): 0.01 Braid 🗌 D (cm): 0.01 Subdominant: Not Applicable DISTURBANCE Islands: None Channel Pattern: Irregular Meanders INDICATORS Coupling: Decoupled C4 C5 Confinement: Unconfined Large Channel Morphology: LC DP OV ίV SWD LWD В 11 Type Total Cover: Trace s D N Amount N N I WD: None Location: P/S/O: FSZ: LWD Dist: Not Applicable Texture: Fines

☑ Gravel ☐ Cobble ☐ Boulder ☐ Rock ☐ Manmade ☐ Crown Closure Shape: Stoping (Right Bank: Texture: Fines 🗹 Gravel 🗌 Cobble 📗 Boulder 📗 Rock 📗 Manmade 0% Shape: Sloping (Left Bank: Stage: Not Applicable Right Bank: Rip.Veg: Wetland Instream Veg: None Algae V Moss V Vascular V Stage: Not Applicable Left Bank: Rip.Veg: FISH Maximum Voltage Total Length fished Total Number of Site Number Capture Length (mm) Length (mm) Fish Time (m) Method Events 53 53 LKC 129 sec 150 Roll#: 4 , Frame# 9 , CD# 1 , Image# 82 , Direction: U , SCALE/COMMENT: boot SITE CARD: site=UTM MORPHOLOGY: Flows through wetland with shallow channel and no distinct banks. OTHER HABITAT: No salmonid habitat - acidic water, drains wetland, no spawning, rearing or overwintering habitat. Cyprinids not abundant in this reach either.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

2.0 093K.041

	STR	EAM	REF)	EREN	CIN	G 🦠					
Gazetted Name:				1	_ocal Na	me:					
Watershed Code: 000-000000-00000	-00000-0000-0000-00	0-000-0	00-000-0	000-000		ILF	Map #: 093K.04	1	ILF	#: 4	1023
		***	REAG		1						
Reach #: 2.0	UTM(Zone/East/No						Sa	emple 1	Type: Cone: I	Biase	đ
Length (km): 1.50	Coupling: Partially Co		Mag	nitude:	1		On		er: Abs		
C. C	nfinement: Frequently	Contin	Din	Order: arian Ve		· Ca	•	en wat	er, nos	5111	
US Elev (m): 1099	Islands: NONE		_	aid 🗌			ogging, with reser	vee			
Bars: None ✓ Side ☐ Diagonal	Mid-channel	Span			Lanoi	se. c	ogging, with reser				
		inescri	SIT		00	16	Crew: MJ/	MG	Date:	2001-09	1-19
0.10	UTM 10.313210.6038 UTM	316			cy: C0		NS Consulting Ltd.		Duto.	2001 0	
Site Length (m): 200 GIS	OTM.	W. C	HAN							4.202	
		Avg	Min	Max	#			Avg	Min	Max	#
No Vis.Ch.: 1ntermittent:	Channel Width (m):	0.78	0.600	1.100	6	Г	Gradient %:	1.50	1	2	4
Dewatered: Tribs.:	Wetted Width (m):	0.00	0.000	0	6	t	Pool Depth (m):	0.00	0	0	1
Stage: Low 🗹	Bankfull Depth (m):	0.17	0.1	0.2	3	֓֡֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֡֓֡֓֓֡	Turbic	dity.:	Turbid		Low
Med Temp (C):	pH:		•	Conducti	vity:			M	oderate		Clear 🗌
- 1		MOI	RPHC	LOG	γ.				2.44		
Bed Material: Dominant: Fines Subdominant: Cobble	D95 (cm): 15 D (cm): 1.			Bars: N	on 🗹	Side	Diagonal D] Mid	-channe		ipan 🔲 Iraid 🔲
Channel Pattern: Irregular, Wande Coupling: Decoupled Confinement: Occasionally Cor		ne		IRBANC CATORS C2		B ² ↓ [24	1 B2 B3 C5 S1 S2	D1 S3	D2 	03 S5	
Morphology: RP Riffle Po											us ok the Seed so
		4000	COA	ER.				V-5 25			
Total Cover: None	Type: Amount:	SWD	LW		B N	U N		N N	N N		
LWD: None LWD Dist: Not Applicable	Location: P/S/O:									FS	z: 🗌
Right Bank: Shape: Undercut	Texture: Fines Gr	avel	Cobble	✓ Bou	ilder 🗌]	С	rown Cle	osure -40%
Left Bank: Shape: Undercut	Texture: Fines G		Cobble ure fores		noer.	Roci	- Intelligence	J		~.,	
Right Bank: Rip.Veg: Coniferous Left Bank: Rip.Veg:		•	ne tores		ins	tream	Veg: None 🗹	Algae [Moss	s 🗌 Va	scular [
Roll#: 2 , Frame# 21 , CD# 1 , li Roll#: 2 , Frame# 22 , CD# 1 , li SITE CARD : site=UTM SITE CARD : Channel dissipate stream. MORPHOLOGY : Flows through OTHER HABITAT : No fish habi	mage# 47 , Directions s approximately 30n a 20m wide forested	n: U , S n w/s fro vallev	om lowe	er boun	dary - r -flow.	och		nt. No	access	from p	arent

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map # ILP # 1.0 093K.041 41027

	4.		STR	EAMRE	FEREN	CIN	3					
Gazetted Nam	e:				ı	_ocal Na	me:					
Watershed Co	de: 000-0000(00-00000-0000	0-0000-0000-00	0-000-000-00	00-000-000		ILP Ma	p#: 093K.04	1	ILP	#: 4	1027
				RE/	A G H				¥1			
Reach #: 1.0		ודט	M(Zone/East/No	orth): 10.315	518.604010			S	ample 1	• -	Biasec	i
Length (km): .	93	•	ling: Decoupled		lagnitude:	5		_		Zone: E		
Gradient (%):	1.7		nent: Unconfined		Order:		0:6	•	en wat	er: Not	Specified	ı
US Elev (m):	1037	Isla	nds: None Visib		Riparian Ve							
Bars: None ✓	Side 🔲	Diagonal 🗌	Mid-channel			Landu	se: Other		The Manager State	STR 65 JOHNS 65		10000000
				7.3.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	TE						2001-09	21
Site #: 1		Field UTM GIS UTM	10.315591.6039	930		cy: C01 ncv Nam		Crew: MJ Consulting Ltd	/MG	Date:	2001-09	-21
Site Length (r	ny. 130	GISTON		CHA	NNEL	ere di			9.75	45.50		
V-V- 0- [Intermitte	**	en e	Avg Mir	35, 200, 100, 14	#	rocar meets		Avg	Min	Max	#
No Vis.Ch.:] Intermitter	= -	nnel Width (m):	1,22 0.9		6		Gradient %:	0.67	0	1	3
Dewatered:	11105 ر		etted Width (m):	0.85 0.6		6	Po	ol Depth (m):	0.10	0	0.300	5
Stage: Low [nkfull Depth (m):	0.43 0.4	4 0.5	3		Turbi	dity.:	Turbid		Low
Med <mark>√</mark> High	=	np (C): 6	pH: 7.3		Conductiv	vity: 40			-	oderate	<u> </u>	lear 🗹
	-			MORPI	OLOG	Y						1
Bed Material:	Dominant: F	ines	D95 (cm): 0.	.01	Bars: N	on 🗹	Side 🗌	Diagonal [Mid	-channe	,	pan 🗀
S	ubdominant: N	lot Applicable	D (cm): 0.	.01							В	raid
Channel Pat	tem: Irregular.	, Wandering	Islands: No		TURBANC		B1	B2 B3	D1	D2 [)3	
Coup	ling: Decouple	ed			DICATORS			1111.	 S3	1111 S4	 S5	
Confinen	ent: Unconfin			C1	C2	C3 C	4 C5	S1 S2	_ 33	- 34	- -	
Morpho	ogy: LC I	arge Channel										
				ွင္ဝ	VER			经工作的				2.827.1
Total Cover: /	Abundant		Туре:			В	U		OV	IV N		
LWD: I	ew		Amount:	T		N C	D		S	14	1	
	Evenly Distrib	uted L	ocation: P/S/O:								FS	
Right Bank:	Shape: Un	dercut Textu	ıre: Fines 🗹 Gr	ravel Cob	=======================================	=======================================	Rock 🗌	Manmade _	֡֡֡֝֡֡֡֡֡֡֡֡֝	C	rown Clo	
Left Bank:	Shape: Un	dercut Textu	ire: Fines 🗹 Gr	ravel Cot	ble Bou	lder	Rock	Manmade	ا		21-	40%
Right Bank:	Rip.Veg: We	etland		ge: Not Appli				: None	Alass F	Moss	□ Vas	ecular [
Left Bank:	Rip.Veg:		Star	ge: Not Appli	cable	Inst	ream veg	: None 💌	Algae L	IVIOSS		
	1166		Sept.	SHOW SHOW THE	ISH		15 Maria	T-4-1		mum		imum
Site Number	Capture Method	Number of Events	Length fished (m)	Total Time	Voltag	e S	pecies	Total Fish	******	num h (mm)	1	th (mm)
178	EF	1	150	204 sec	600		NFC	0			<u> </u>	
Poli# · 2 Er	ame# 7 . CD	# 1 , Image#	32 , Direction:	U, SCALE	/COMMEI	NT: can	n bag			-		
Roll#:2,Fr	ame#8,CD	# 1 , Image#	33 , Direction:	D, SCALE	COMME	NT: wat	er tester	•				
SITE CARD	: site=UTM	through ou	mpy area with	varv danca	willow chr	ub in ni	aces					
MORPHOLO	ייטיס : Flows Chann	unougn swar rel incised wit	mpy area with th deep cutban	iks.		p						
Incapiale !!	ADITAT . I I	abla for fac	rinnanilae hu	t unlikely			L11_1 O!	_H	lover #~	w 254 -	n enital	hie
OTHER HAD	BITAT : Poor	rainbow trou	it habitat - no s	spawning or	overwinte	nng ha	ditat. Sha	allow, WITH S	110)	w anu r	io suită	D10
spawning su	DStrate. tential micro	itory mute to	upper reaches	s unless imi	ounded b	y BD's i	n lowers	section of re	ach.			
JUVER . PC	reman migre	alory route to	-рроосолос			•						
1												
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BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map # ILP #

1.0 093K.041

C 31-18-18-18-18-18-18-18-18-18-18-18-18-18			2				STR	EA.	M R	EF	ERE	NEIN	G							
Gazetted N	ame:											Local N	lame:	:						
Watershed	Code:	000-	-00000	0-00000	-000	00-0000-	0000-00	00-00	0-000	-000-0	000-000)	IL	P Ma	ap #: 093	3K.04	1	ILF	#:	41028
	7	X.						4.70 2.70	R	EAC	H	Com to								
Reach #:	1.0				UT	M(Zone/	East/No	orth):	10.3	15391	.60405	78				s	ample	Туре:	Bias	ed
Length (km): .50				Cou	pling: De	coupled	i		Mag	nitude:	2					BGC 2	Zone: E	SSF	
Gradient (%	•			Co		ment: Od		illy Co	on		Order					O	en wat	er: Abse	ent	
US Elev (m): 107	3			Isl	ands: NO	ONE			Ripa	rian V	egetatio	n: Co	onifer	rous					
Bars: None	\checkmark	Side		iagonal		Mid-cha	nnel 🗌] Spa	an [Br	aid 🗌	Land	luse: I	None	e/natura!					
			rio de			(1) (E)	形像)	443	Sir.	SIT	E	90		最近			4453	交換機		
Site #	#: 179 h (m)::	200			UTM UTM	10.3155 1	11.6040	133			_	ncy: C0 ency Nar		INS (Crew: Consultin		MG	Date:	2001-	09-21
		1.27	74. S.	SANGE S	14	104404		97a5	CH	AN	NEL	ereax.	V Veri	(-Maji	(85°(-)		4			
No Vis.Ch.	· 🔽	Inter	mitten	<u>~~3550</u> r. ☐		STATE OF THE PARTY	ereniyê Pêşê	Avg	(A) 3	Min	Max	#	1	.15573	<u>ag ag er er felt fall fikk</u>	<u>1888 - 18</u>	Avg	Min	Max	#
Dewatered	=	1661	Tribs.	= -	Cha	annel Wid	ith (m):	0.00		0	0	0	1 1		Gradies	nt %:	0.00	0	0	0
	_			_ t		etted Wid		0.00	0	0	0	0	1	Po	ol Depth	(m):	0.00	0	0	0
Stage: Lov Med	\equiv				Ba	nkfull De	pth (m):	0.00	0	0	0	0] .			Turbio	dity.:	Turbid	\exists	Low
High	=		Tem	(C):		pH	1 :			C	onduct	ivity:					-	oderate		Clear
	***	125		in a			维热	M C	RI	ΗO	LOG	Y	*	编制	经 证					100
Bed Materi	al: De	omina	ant:			D95 (c	cm):			i	Bars: N	lon 🗌	Sid	e 🗌	Diagon	nai 🗌] Mid-	channel		Span 🔲
	Subd	omina	ant:			D (e	cm):													Braid
Channel F	Pattern	:				Isla	nds:		D		RBANC		B	1	B2 E	3	D1	D2 D	3	
ŧ	upling										ATORS			11	Щ			Ш	يا	
Confin										C1	C2	C3 (C4	C5	S1	S2	S3	S4	S5	
Могр	hology	:							_1							<u>. l. l.</u>	للا	لللا		
60,777,005		4.4	7.7.7.5 1.7.7.5	\$10.00	27.2	×2./4		4550 1600	C	OV.	E R								15	
Total Cover	-						Type:	SWI	D	LWE		В	U	\Box	DP	0	V	IV	1	
LWD):						mount:						11 11					1 1 1		_
LWD Dis	t:					ocation:	P/S/U:	Щ						ال				لبللك	F	SZ:
Right Banl	c s	Shape	e:		Textu	re: Fines	Gr	ave!] c	obble	Boı	ılder	Rock	k□	Manma	de 🗌		Cr	own C	losure
Left Bani	k: S	Shap	e:		Textu	re: Fines	س	avel	C	obble	Bou	ılder	Rock	k 📙	Manma	de	ļ			
Right Bank		p.Ve	-				Stag	•				lea	traam	\/oc	: None	П,	Algae [Moss	□ v.	scular _
Left Ban	c Ri	p.Ve	g:	ne objektivacio	(v_4);(#194	Program and the second	Stag	je: :gaski	erer e	<u>ئ</u> و بەلودۇسى	شدريوا فيوا			veg	. NONO	م لسا المارية	Second	_ IVIUSS	Vi	iscuidi _
										7.7	St. 1975	URE	3							T. (7.7
NID Map	NIE	_	Type	Hgt		Method	Гâ		letho GE		P)	roto F:	┤.	:1	A	rPho	#:			TM (Z/E/N
93K.041 Commen	3179		BMA	manne		GE ation	<u> </u>		GE.	R:	L	15.1		1			7.	1		
Commen	<u>ار.م</u>	Jiell	aye a	. mappe		44011													-	
SITE CAR										- 400	·	·								
SITE CAR												ius.								
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BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map # ILP #

1.0 093K.041

	STR	EAM	REF	EREN	ICIN	G				16.6	
Gazetted Name:				1	Local N	ame:					j
Watershed Code: 000-000000-0000	0-00000-0000-0000-00	0-000-0	00-000-0	000-000		ILP N	fap #: 093K.04	1	ILF	#: 4	1034
			REAC	H							
Reach #: 1.0	UTM(Zone/East/No	rth): 10	.314393	.604048	3		S	ample 1	Гуре:	Biasec	
Length (km): .17	Coupling: Decoupled			nitude:	2				one: I		1
	nfinement: Unconfined	d		Order:	2		Op	en wat	er: Abs	ent	
US Elev (m): 1059	Islands: NONE		Ripa	arian Ve	getatio	n: Conife	erous				
Bars: None 🗹 Side 🗌 Diagona	I Mid-channel	Span	Br	aid 🗌	Land	use: Nor	ne/natural			- Vo. III- are	
		(1) (d)	SIT	E ,				6-78 VI		334.38	
Site #: 180 Field	UTM 10.314358.6040	372			ncy: C0			MG	Date:	2001-09	-21
Site Length (m): 150 GIS	S UTM			Age	ncy Nar	ne: FINS	Consulting Ltd.			10000	L. S. BOLTINOTS
		C	HAN	NEL		為沙漠				44.004	4664
No Vis.Ch.: ✓ Intermittent:		Avg	Min	Max	#			Avg	Min	Max	
Dewatered: Tribs.:	Channel Width (m):	0.00	0	0	0	_	Gradient %:	0.00	0	0	0
Stage: Low	Wetted Width (m):	0.00	0	0	0	↓ Ľ	Pool Depth (m):	0.00	0		
Med	Bankfull Depth (m):	0.00	0	0	0	J	Turbi	-	Turbid	=	Low
High Temp (C):	pH:		(Conducti	ivity:			M	oderate		lear
		MO	RPHC	LOG	Υ						
Bed Material: Dominant:	D95 (cm):			Bars: N	lon 🗌	Side	Diagonal [Mid	-channe		pan 📙
Subdominant:	D (cm):									В	raid 📙
Channel Pattern:	islands:			RBANC		B1	B2 B3	D1	D2 1	D3	
Coupling:			IND	CATORS		Ш				Щ	
Confinement			C1	C2	C3 (C4 C	5 S1 S2	S3	\$4	S5	
Morphology:									1		
			COV	ER.			发展的 企业	*(35-2)			
Total Cover:	Type:	SWD	L.W	D	В	U	DP (ΟV	IV	1	
LWD:	Amount:]							_	
LWD Dist:	Location: P/S/O:									FS	Z: 📋
Right Bank: Shape:	Texture: Fines Gr	ravel	Cobble	☐ Bo	ulder	Rock	Manmade]	C	rown Clo	sure
Left Bank: Shape:	Texture: Fines G	ravel 🗌	Cobble	Bo	ulder	Rock [Manmade]			
Right Bank: Rip.Veg:	Stag							A 1	Moss	s 🗍 Vas	cular [
Left Bank: Rip.Veg:	Sta	ge:			Ins	stream V	eg: None	Algae	IVIOS:	Va:	oulai L
Roll#: 2, Frame# 14, CD# 1,	mage# 39 , Direction	n: D , S	CALE/	COMM	ENT: sl	nocker					
Roll#: 2, Frame# 15, CD# 1,	mage# 40 , Direction	n: U , S	CALE/	COMM	ENT: b	oot					
SITE CARD : site=UTM OTHER HABITAT : No fish hab	itat - melhvater chan	nel with	no flu	vium or	contin	uity. Do	es not reach f	Pinkut	Creek a	anyway.	
OTHER HABITAT : NO IST HAB	adi - montrator one					•					
1											
]											
1											

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

11P#

STREAM REFERENCING Local Name: **Gazetted Name:** ILP# ILP Map #: UTM(Zone/East/North): 10.311889.6040737 Sample Type: Reach #: 5.0 **BGC Zone:** ESSF Magnitude: 16 Coupling: Coupled Length (km): .12 Open water: Absent Order: 3 Confinement: Entrenched Gradient (%): 2.5 Riparian Vegetation: Coniferous Islands: NONE US Elev (m): 1120 Bars: None 🗹 Side 🗌 Diagonal 🗌 Mid-channel 🗍 Span 🗍 Braid 📗 Landuse: None/natural SITE Date: 2001-09-21 Agency: C016 Field UTM 10.311850.6040786 Site #: 181 Agency Name: FINS Consulting Ltd. GIS UTM .. Site Length (m): 150 CHANNEL Avg # Max No Vis.Ch.: Intermittent: Min 3 75 2.200 6 Gradient % 3.03 Dewatered: Tribs.: Channel Width (m): Pool Depth (m): 0.48 0.310 0.59 3 6 Wetted Width (m): 2.48 2 Low 0.4 3 Bankfull Depth (m): 0.33 0.3 Low Turbidity.: Turbid Med 🗸 Clear 🗹 Conductivity: 50 Moderate pH: 7.5 Temp (C): 7 High | MORPHOLOGY Bars: Non 🗹 Side 🗌 Diagonal 🗌 Mid-channel 🗌 Bed Material: Dominant: Cobble D95 (cm): 400.00 Braid D (cm): 10.00 Subdominant: Gravels Islands: None DISTURBANCE Channel Pattern: Sinuous Coupling: Coupled **C**5 Confinement: Confined Morphology: RP Riffle Pool COVER IV OV SWD LWD Type: Total Cover: Abundant s ח S Amount T LWD: Few Location: P/S/O: FSZ: LWD Dist: Evenly Distributed Shape: V - shape Texture: Fines ♥ Gravel ♥ Cobble ♥ Boulder ♥ Rock ♥ Manmade Crown Closure Right Bank: Shape: V - shape Texture: Fines ♥ Gravel ♥ Cobble ₱ Boulder ♥ Rock ♥ Manmade 21-40% Left Bank: Stage: Not Applicable Right Bank: Rip.Veg: Shrubs Instream Veg: None Algae Moss V Vascular Stage: Not Applicable Rip.Veg: Left Bank: FISH Voltage Total Minimum Total Number of Length fished Site Number Capture Length (mm) Fish Lenath (mm) Events (m) Time Method 105 63 600 2 150 135 sec Roll#: 2 , Frame# 9 , CD# 1 , Image# 34 , Direction: U , SCALE/COMMENT: cam bag Roll#: 2, Frame# 10, CD# 1, Image# 35, Direction: D, SCALE/COMMENT: cam bag SITE CARD : site=UTM MORPHOLOGY: Flows through canyon. SPAWNING HABITAT : Poor - angular substrate. REARING HABITAT : Excellent. OVERWINTERING HABITAT: Good. OTHER HABITAT: Beautiful creek with abundant cover.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

6.0

ILP#

STREAM REFERENCING Local Name: **Gazetted Name:** ILP# ILP Map #: REACH UTM(Zone/East/North): 10.310998.6040789 Sample Type: Reach #: 6.0 BGC Zone: ESSF Coupling: Coupled Magnitude: 16 Length (km): .95 Open water: Absent Confinement: Frequently Confin Order: 3 Gradient (%): 1.7 Riparian Vegetation: Coniferous US Elev (m): 1136 Islands: NONE Bars: None ✓ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Braid ☐ Landuse: None/natural SITE Date: 2001-09-21 Field UTM 10.311854.6040677 Crew: Site #: 182 Agency Name: FINS Consulting Ltd. GIS LITM... Site Length (m): 100 CHANNEL # Avg No Vis.Ch.: Intermittent: Min Avg 4 Gradient % 2.75 2.13 1.700 2.5 6 Channel Width (m): Dewatered: Tribs.: 0.41 0.280 6 Pool Depth (m): Wetted Width (m): 1.97 1,600 Stage: Low 0.4 0.6 3 Bankfull Depth (m): Low Turbidity.: Turbid Med 🗸 Conductivity: 50 Moderate Temp (C): 7 pH: 7.5 High MORPHOLOGY Side Diagonal Mid-channel Bars: Non Bed Material: Dominant: Gravels D95 (cm): 30.00 Braid D (cm): 4.00 Subdominant: Cobble Islands: Occasiona DISTURBANCE Channel Pattern: Sinuous Coupling: Coupled C4 **C5** S1 S2 C3 Confinement: Frequently Confined Morphology: RP Riffle Pool COVER īV OV SWD 11 nΡ Туре Total Cover: Abundant D s Amount LWD: Few Location: P/S/O: FSZ: **V** LWD Dist: Evenly Distributed Shape: Sloping (Texture: Fines ✔ Gravel ✔ Cobble ✔ Boulder Rock Manmade Crown Closure Right Bank: Texture: Fines ☑ Gravel ☑ Cobble Boulder Rock Manmade 21-40% Left Bank: Shape: Undercut Stage: Not Applicable Rip.Veg: Shrubs Right Bank: Instream Veg: None Algae Moss Vascular Stage: Not Applicable Left Bank: Rip.Veg: FISH Maximum Minimum Total Voltage Total Length fished Capture Number of Site Number Length (mm) Fish Length (mm) Time Method **Events** (m) 109 67 600 3 169 sec 100 Rol#: 2, Frame#11, CD#1, Image#36, Direction: U, SCALE/COMMENT: cam bag Roll#: 2, Frame# 12, CD# 1, Image# 37, Direction: D, SCALE/COMMENT: cam bag SITE CARD: site=UTM MORPHOLOGY: Flows through narrow ~10m wide valley. SPAWNING HABITAT: Good - fairly abundant gravels, although in patches. REARING HABITAT : Good OVERWINTERING HABITAT: Good OTHER HABITAT: Excellent overall habitat for rainbow trout.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

11.0

100			STR	EAM	REF	ERE	ICIN	G .					
Gazetted Nam	e:						Local N	ame:					
Watershed Co	de: 480-9277	00-90000-000	00-0000-0000-00	0-000-0	00-000-	000-000		ILP Ma	ap #:		ILP	#:	
					REAG	2 Н					7 Y 7		
Reach #: 11	.0	וט	M(Zone/East/No	orth): 10).30834 ⁻	1.604201	6		s	ample	Type:	Biased	ı
Length (km):		Cou	pling: Decoupled	1	Mag	nitude:	6			BGC 2	Zone: E	SSF	
Gradient (%):	3.0	Confine	ment: Unconfine	đ		Order:	2		0	pen wat	ter: Abse	ent	
US Elev (m):	120 9	isi	ands: None Visit	ole	Rip	arian Ve	getatio	n: Conifer	rous				
Bars: None	Side 🗌	Diagonal	Mid-channel	Span	□в	raid 🗌	Land	use: None	/natural				
					SIT	E grafia	de de la companya de	we disk		法教持			
Site #: 1	83	Field UTM	10.308707.6041	953		Agen	cy: C0	16	Crew: MJ	/MG	Date:	2001-09	-22
Site Length (m): 150	GIS UTN	1			Age	ncy Nan	ne: FINS (Consulting Ltd	t.			
			3.5	S C	HAN	NEL	u.e.		£36.5	will the			i graf
No Vis.Ch.:	Intermitte	nt:		Avg	Min	Max	#	1		Avg	Min	Max	#
Dewatered:	Trib	s.: Ch	annel Width (m):	1.90	1	2.700	6		Gradient %:	3.50	3	4	4
_	_ ¬	W	etted Width (m):	1.73	1	2.3	6	Po	ol Depth (m):	0.56	0.39	0.790	6
Stage: Low _ Med \		Ва	nkfull Depth (m):	0.50	0.5	0.5	3		Turbi	dity.:	Turbid [Low
High	=	np (C): 6	pH: 7.9		(Conducti	vity: 20			Me	oderate[c	lear 🗹
	_			MOI	RPHO	LOG	y	t de la	y ar illino				100
Bed Material:			D95 (cm): 10			Bars: N	on 🗌	Side 🗸	Diagonal] Mid-	-channel		an 🗌
	ubdominant: (D (cm): 5.		n.0.T1		- 04		D2 D2	D4	no r)3	🗀
	tem: Irregular	•	Islands: No	ne		JRBANCI CATORS		B1	B2 B3	D1		<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
	ling: Decoupl				C1		لسلسا	24 C5	S1 S2	S3	S4	 S5	
	nent; Occasio	nally Comine Riffle Pool				<u> </u>		7 5	T	T 🗂		$\overline{\Box}$	
iviorpho	logy: RP	Kilise Fooi			لللي					1_1_1	اللها ا		10 To 8 2 2 2 1
				W.	COA	ER .				4.			
Total Cover: A	Abundant		Type:	SWD	LW	D	В	U		OV	íV	1	
LWD: F	- ONL		Amount:	T	T		N	S	D	T	T	l	
	Evenly Distrib	uted	Location: P/S/O:									FSZ	<u>:</u> : 🗌
Right Bank:	Shape: Ur	dercut Text	ure: Fines 🗹 Gr	avel 🗸	Cobble	Bou	lder 🗌	Rock 🗌	Manmade]	Cr	own Clo	sure
Left Bank:	Shape: Ur		ure: Fines 🗹 Gr				lder 🔙	Rock	Manmade []		1-2	0%
Right Bank:	Rip.Veg: Sh			ge: Not /						_	_	_	_
Left Bank:	Rip.Veg:		Stag	ge: Not /	Applicab	ole	Ins	tream Veg	: None	Algae	Moss	✓ Vas	cular _
				EVERA	FIS	. H: <					V 5		
Site Number	Capture	Number of	Length fished	To	I	Voltag	e S	pecies	Total	Minit		1	imum h (mm)
	Method	Events	(m)	Tin					Fish	· .	h (mm)	1	., () 27
183	EF	1	150	269		600		RB	2	1	12	1 '	£1
Roll#:4,Fr	ame#1,CD	#1,Image#	74, Direction:	U,SC	ALE/C	OMME	IT: pro	be					
		# 1 , Image#	75 , Direction:	D, SC	ALE/C	OMME	vi:car	n pag					
SITE CARD		through plate	eau with sparse	conife	rs.								
WATERROD	V · Vary en	arse rainhow	tmut nonulatio	n								••	
OTHER HAE	BITAT : Exce	ellent rainbov	v trout habitat.	Plenty o	of deep	pools (every 5	on ave	erage), almo	entii	rely gra	vel in st	ream
bed with ven													
COVER : Ve	ry adundant												
L													

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

19.0

STREAM REFERENCING **Gazetted Name:** Local Name: ILP Map # REACH Reach #: 19.0 UTM(Zone/East/North): 10.306136.6043690 Sample Type: Biased Magnitude: 2 Length (km): .55 Coupling: Partially Coupl BGC Zone: ESSE Gradient (%): 8.7 Confinement: Frequently Confin Order: 2 Open water: Absent US Elev (m): 1307 Islands: NONE Riparian Vegetation: Coniferous Bars; None

✓ Side

Diagonal

Mid-channel

Span

Braid

Landuse: None/natural SITE Field UTM 10.306321.6043243 Site #: 184 Agency: C016 Crew: MJ/MG Date: 2001-09-23 Agency Name: FINS Consulting Ltd. Site Length (m): 200 GIS UTM... CHANNEL Avg Min Min # No Vis.Ch.: Intermittent: Avg Dewatered: Channel Width (m): 0.92 0.5 1.4 6 **Gradient %** 8.50 ĸ 12 Wetted Width (m): Pool Depth (m): 0.33 0.19 6 0.92 0.5 1.4 6 Stage: Low Bankfull Depth (m): 0.13 0.1 0.2 3 Turbidity.: Turbid 🗌 Low Med High 🗸 Temp (C): 8 pH: 6.9 Conductivity: 20 Moderate Clear 🗸 MORPHOLOGY Bed Material: Dominant: Gravels D95 (cm): 10.00 Bars: Non 🗸 Side Diagonal Span Subdominant: Cobble D (cm): 4.00 Braid DISTURBANCE Channel Pattern: Sinuous Islands: None INDICATORS Coupling: Decoupled Confinement: Occasionally Confine C5 S1 **S3 S4** Morphology: SP Step Pool COVER LWD DP Öν Total Cover. Moderate Type: SWD В u ١V N D Amount LWD: Few Location: P/S/O: **V** FSZ: LWD Dist: Evenly Distributed Shape: V - shape Texture: Fines ♥ Gravel ♥ Cobble ♥ Boulder Rock Manmade Crown Closure Shape: V - shape Texture: Fines ♥ Gravel ♥ Cobble Boulder Rock Manmade 21-40% Left Bank: Stage: Mature forest Right Bank: Rip.Veg: Coniferous Instream Veg: None ☐ Algae ☐ Moss ✔ Vascular ☐ Stage: Mature forest Left Bank: Rip.Veg: FISH Length fished Total Voltage Total Minimum Maximum Site Number Capture Number of Fish Length (mm) Length (mm) Method **Events** (m) Time 200 339 sec 700 NFC: Ð Roll#: 4, Frame# 15, CD# 1, Image# 88, Direction: U, SCALE/COMMENT: cam bag Roll#: 4, Frame# 16, CD# 1, Image# 89, Direction: D, SCALE/COMMENT: cam bag SITE CARD: site=UTM MORPHOLOGY: Flows mainly on slope with some confined and gullied sections. SPAWNING HABITAT: Poor - mostly angular gravels with some semi-angular. May be used sporadically for spawning. REARING HABITAT: Moderate to good - pools relatively abundant. Good flow. OVERWINTERING HABITAT : Too shallow, pools small and fast flowing. Likely move to lake, but may utilize some deeper pools. OTHER HABITAT : Overall, low to moderate value habitat. Unlikely fish use - no fish observed rising in lake d/s, unknown if present

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

Watershed Code: 480-927700-90000-17200-0000-0000-000-000-000-000-000

1.0

	STRE	EAM.	REFE	REI	V C 1 I	V.G	gradik singe				
Gazetted Name:					Local	Name:					
Watershed Code: 480-927700-9000	00-17200-0000-0000-000)-000-00	0-000-0	00-000		ILP	Map #:		ILF	# :	
		F	REAC	н							
Reach #: 1.0	UTM(Zone/East/Nor	th): 10.	311871.	604043	9			Sample	Type:	Rando	m
Length (km): .33	Coupling: Decoupled		•	nitude:	2				Zone: I		
• •	onfinement: Unconfined			Order:		\		pen wa	ter: Abs	ent	
US Elev (m): 1120	Islands: NONE	0		·	-	on: Wet					
Bars: None ✔ Side ☐ Diagona	I Mid-channel	Span		aid 📋	Lan	duse: N	one/natural	Na hakansasa	Standard and	Section and	ese magazina
			SITE					M6041			
	UTM 10.311890.60406 S UTM	85		-	ncy: C ncy Na		Crew: M S Consulting Lt	J/MG d.	Date:	2001-09	-21
		C	HANN	IEL:			100		eres/		
No Vis.Ch.: Intermittent:		Avg	Min	Max	#] _		Avg	Min	Max	#
Dewatered: Tribs.:		0.00	0	0	0	↓	Gradient %	0.00	0	0	0
Stage: Low 🗌		0.00	0	0	0	┨└	Pool Depth (m)		0		
Med High Temp (C):	pH:	1		onductiv	vity:		Turb	idity.: M	Turbid { oderate	=	Low 📗 lear 🔲
		MOR	PHO	LOG	Y		"" "			100	(10)
Bed Material: Dominant:	D95 (cm):		8	sars: No	on 🗌	Side	Diagonal	Mid	-channel	☐ sı	oan 🔲
Subdominant:	D (cm):									Bi	aid
Channel Pattern:	Islands:		DISTUR	BANC!		1 B1	B2 B3	D1	D2 D	3	
Coupling: Confinement:						C4 C	5 S1 S2		1 S4	 \$5	
Morphology:		-	$\overline{\Box}$				<u> </u>				
		-	OVE	D	race de			(Sp. 0. 0. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.	Sv. ad SV.		
Total Cover:	Type:	SWD	LWD		В	U	I DP I	ov T	ĺ۷	eren er men	reign sign occupati
	Amount	3110		+-			 " -	-			
LWD: LWD Dist:	Location: P/S/O:									FSZ	:: 🔲
Right Bank: Shape:	Texture: Fines Grav	vel 🗌 (Cobble	Boul	der	Rock	Manmade]	Сп	- own Clos	sure
Left Bank: Shape:	Texture: Fines Grav	vel 🔲 (Cobble	Boul	der	Rock [Manmade []			
Right Bank: Rip.Veg:	Stage							г	٦	□ .	
Left Bank: Rip.Veg:	Stage	: 			Ins	stream V	eg: None 🔝	Algae L	_ Moss	vas	cular [_
Roll# : 2 , Frame# 13 , CD# 1 , In SITE CARD : site=UTM MORPHOLOGY : Drains wetland OTHER HABITAT : No fish habit	d - no channel in wetta										
L											

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

.1

11 P #

			#	STR	EAMF	EF	EREN	ICIN	(G					
Gazette	d Name) :					1	Local	Name:					- 1
Watersh	ed Co	ie: 480-9277	00-90000-31	000-0000-0000-00	0-000-000)-000-	000-000		ILP M	lap #:		JLP	#:	
ier (c					R	EAG	\$ H							
Reach	#: .1		ι	TM(Zone/East/No	orth):					s	ample	Туре:	Biase	1
Length ((km): .	23	Co	upling: Decoupled	ł	Mag	initude:	4			BGC 2		SBS	
Gradient	t (%): (.4		ement: Unconfine			Order:				pen wat	ter: Abse	ent	
US Elev	/ (m): 1	138	1:	slands: None Visit	o le	_ `	_	-	on: Wetla					
Bars: No	one 🗹	Side	Diagonal	Mid-channel	Span	B	raid	Lan	duse: Non	e/natural	,	-ru-zw		ve v radioži vijek
						SIŢ	AND STATEMENT				19. S		£ 77.5	
s	ite #: 1	86		A 10.310594.6040	605			icy: C			/MG	Date:	2001-09	1-22
Site Le	ength (r	n): 100	GIS UT	M		.,	Age	ncy Na	me: FINS	Consulting Ltd	noer nood o see o	Gritta Nad Sales	of Lineau and social in	Zewasta a
					C.	AN	NEL			ALCOHOL: N		97,431		
No Vis.	.Cn.: [Intermitte	=		Avg	Min	Max	#	┧ ,		Avg	Min	Max	#
Dewate	ered:	Trib		hannel Width (m):		0.800	1.600	6	ا ⊢	Gradient %: ool Depth (m):	0.75	0	0	3
Stage:	Low []	<u> </u>	Wetted Width (m): Bankfull Depth (m):	0.83	0.800	1.600	3	┨┕╴		٠		<u> </u>	
	Med]	<u> </u>		0.00					Turb	dity.:	Turbid oderate	===	Low∐ lear ✓
1	High 😼	Ter	np (C): 7	pH: 6.6			Conducti	-) .w.orseni.di.di.wad	manisa o seta maji mas	IVI Proceduction	COSTATE		iioai [V]
			1.7 (A 1.4)		MOR	-	DLOG			7 r		TOTAL VI		
Bed Ma	aterial:	Dominant: F	ines	D95 (cm): 0			Bars: N	on 🗹	Side _	_ Diagonal \	Mid	-channe		pan 📗
	Sı	ibdominant: (Gravels	D (cm): 0										
Chanr	nei Pati	ern: Irregular	, Wandering	Islands: No	ne		JRBANCI CATORS		1 B1	B2 B3	D1	D2 L	3	
		ing: Decoupl				C1		′	C4 C5	S1 S2	S3	S4	 S5	
1		ent: Frequen	tiy Contined Large Chann	al	-			₩ T			1		$\overline{\Box}$	
1 10	norprioi	ogy: LC	Large Criam									<u> </u>		. 1970s 91skali
1817			3300		200000000000000000000000000000000000000	OV	ER			(1398) (1 <u>2</u> 85)		8): 13 × 13	10043 1	
Total C	over: A	bundant		Type:	SWD	LW		В	u s	DP (T T	T	1	
1	LWD: N	lone	-	Amount: Location: P/S/O:	N	N		N				7		- [
LWD	Dist: N	lot Applicable			لــــــــــــــــــــــــــــــــــــــ		البالبال	البالب		حد استانت			FS.	_
Right I	Bank:	Shape: Ur		kture: Fines 🗹 Gi				ider	Rock	Manmade _	_	C	rown Clo	sure %
Left	Bank:	Shape: Ur		kture: Fines 📝 Gi		Cobble		ilder _	Rock	Manmade	ا		v	70
Right		Rip.Veg: W	etland		ge: Not Ar ge: Not Ar			ir	stream Ve	eg: None	Algae [✓ Moss	✓ Vas	cular [
Left	Bank:	Rip.Veg:		Sta	ge. Not A) Jill Cal				9	ST - 25 ST - 2	es emelepro	or the transfer of	
3.7		14.5	N. S. Park		S	FI	H		100		#. 34k	7718.7		
Site Nu	mber	Capture Method	Number of Events	f Length fished (m)	Tota Time		Voltag	e	Species	Total Fish		mum h (mm)	1	imum th (mm)
186		EF	1	100	156 s	i	600		NFC	0				
			<u></u>	# 76 , Direction:				NT: bo						
Rol# :	→ , Fra 4 , Fra	me#4,CD	#1,Image	# 77 , Direction:	D SCA	LE/C	OMMEN	VT: bo	ook					
ISITE C	ARD.	cita=LITM		ised channel in						N528 604051	9 (end	of reac	h. end	of
lohanna	d and	of ctmom)												
OTHER	R HAB	ITAT : No s	uitable rain	bow trout habita	t - water	stagn	ant or fl	lowing	very slo	wly. Full of o	ange a	ilgae ar	d thick	detritus
Water	acidic,	likely deple	tion of oxy	gen in summer a	nd winte	Г.								
1														
1														

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

11 P#

STREAM REFERENCING Local Name: **Gazetted Name:** ILP#: Watershed Code: 480-927700-90000-31000-0000-000-000-000-000-000-000 ILP Map #: REACH UTM(Zone/East/North): 10.310066.6040471 Sample Type: Reach #: 1.0 BGC Zone: ESSE Magnitude: 4 Coupling: Decoupled Length (km): .49 Open water: Present Gradient (%): 1.4 Confinement: Unconfined Order: 2 Riparian Vegetation: Wetland Islands: None Visible US Elev (m): 1145 Bars: None ✓ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Braid ☐ Landuse: None/natural SITE SITE Date: 2001-09-22 Crew: Field UTM 10.310528.6040519 Site #: 187 Agency Name: FINS Consulting Ltd. GIS UTM... Site Length (m): 100 CHANNEL # # Min Max No Vis.Ch.: Intermittent: n n 0.00 0 Gradient % 0.00 Channel Width (m): Tribs.: Dewatered: Pool Depth (m): 0.00 0 0 Wetted Width (m): 0.00 Low Bankfull Depth (m): 0 0 0 Turbidity.: Turbid Low Med Moderate Clear Conductivity: High 🗌 Temp (C): pH: MORPHOLOGY Bars: Non Side Diagonal Mid-channel D95 (cm): Bed Material: Dominant: Braid Subdominant: D (cm): DISTURBANCE 01 Islands: Channel Pattern: INDICATORS Coupling: C3 C5 Confinement: Morphology: DP ov í۷ SWD LWD Туре: Total Cover: Amount LWD: Location: P/S/O: FSZ: LWD Dist: Crown Closure Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Texture: Fines Gravel Cobble Boulder Rock Manmade Shape: Left Bank: Stage: Not Applicable Right Bank: Rip.Veg: Wetland Instream Veg: None Algae Moss Vascular Stage: Not Applicable Left Bank: Rip.Veg: SITE CARD: site=UTM SITE CARD: No channel present in wetland bog. OTHER HABITAT: No fish habitat - nothing but a bog.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

1.0 093K.041

STREAM REFERENCING **Gazetted Name:** Local Name: 41039 ILP Map #: 093K.041 REACH UTM(Zone/East/North): 10.310562.6040526 Sample Type: Random Reach #: 1.0 Magnitude: BGC Zone: ESSF Length (km): .70 Coupling: Decoupled Gradient (%): 3.1 Confinement: Unconfined Order: 1 Open water: Absent US Elev (m): 1160 Islands: NONE Riparian Vegetation: Coniferous Bars: None 🗹 Side 🗌 Diagonal 🔲 Mid-channel 🗍 Span 🗍 Braid 📗 Landuse: None/natural SITE Crew: MJ/MG Date: 2001-09-22 Field UTM 10.310548.6040546 Agency: C016 Site #: 188 Agency Name: FINS Consulting Ltd. GIS UTM... Site Length (m): 100 CHANNEL # Min Max No Vis.Ch.: Intermittent: Avg Channel Width (m): ñ 0.00 0 0 0 Gradient % Tribs.: Dewatered: 0 Wetted Width (m): 0.00 0 0 0 Pool Depth (m): 0.00 Stage: Low Bankfull Depth (m): 0.00 0 0 Turbid [Low 🗌 Turbidity.: Med Moderate ___ Clear ___ Conductivity: High [Temp (C): MORPHOLOGY Side Diagonal Mid-channel Span [Bed Material: Dominant: D95 (cm): Bars: Non Braid ___ Subdominant: D (cm): Channel Pattern: islands: DISTURBANCE INDICATORS Coupling: C2 C3 C4 C5 **S1 S3 S4** Confinement: Morphology: OV IV SWD LWD В DP Type: Total Cover: Amount LWD: Location: P/S/O: FSZ: LWD Dist: Crown Closure Texture: Fines Gravel Cobble Boulder Rock Manmade Right Bank: Shape: Texture: Fines Gravel Cobble Boulder Rock Manmade Left Bank: Shape: Stage: Right Bank: Rip.Veg: Instream Veg: None Algae Moss Vascular Stage: Left Bank: Rip.Veg: **FEATURES** UTM (Z/E/N) AirPhoto NID Map Method Lg Method NID Hgt Type GE 93K.041 31881 BMA No drainage anywhere - just wetland. SITE CARD : site=UTM OTHER HABITAT: No fish habitat - no kind of drainage at mapped location, no connection to parent stream.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

11 P#

10 STREAM REFERENCING Gazetted Name: Local Name: ILP Map #: ILP#: REACH UTM(Zone/East/North): 10.311688.6041786 Sample Type: Biased Reach #: 1.0 Coupling: Partially Coupl Magnitude: 3 **BGC Zone:** ESSF Length (km): .95 Gradient (%): 4.2 Confinement: Occasionally Con Order: 2 Open water: Present US Elev (m): 1119 Riparian Vegetation: Shrubs Islands: None Visible Bars: None ✓ Side ☐ Diagonal ☐ Mid-channel ☐ Span ☐ Braid ☐ Landuse: None/natural SITE Date: 2001-09-21 Field UTM 10.312524.6041831 Agency: C016 MIMG Site #: 189 Crew: Agency Name: FINS Consulting Ltd. GIS UTM .. Site Length (m): 100 CHANNEL Intermittent: Avg Min Max # Avg # No Vis.Ch.: 4 00 4 Dewatered: Tribs.: Channel Width (m): 1.43 1 2 6 Gradient % Wetted Width (m): 1.15 6 Pool Depth (m): 0.36 0.29 6 13 Stage: low Bankfull Depth (m): 0.40 0.4 0.4 Turbid I nw Med 🗸 Turbidity.: Clear 🗸 Moderate Temp (C): 6 pH: 7.6 Conductivity: 70 High MORPHOLOGY Bars: Non Side V Diagonal Mid-channel Bed Material: Dominant: Gravels D95 (cm): 30.00 Braid Subdominant: Cobble D (cm): 3.00 Islands: None DISTURBANCE 01 Channel Pattern: Sinuous INDICATORS Coupling: Decoupled Confinement: Occasionally Confine C3 C4 C5 S1 S2 **S3** Morphology: RP Riffle Pool í۷ SWD LWD Type В Total Cover: Abundant S D 3 Amount IWD: Few Location: P/S/O: FSZ: LWD Dist: Evenly Distributed Shape: Undercut Texture: Fines Gravel Cobble Boulder Rock Manmade Crown Closure Right Bank: Texture: Fines 📝 Gravel 🗹 Cobble 🗹 Boulder 🗌 Rock 🗍 Manmade 🗍 41-70% Left Bank: Shape: Undercut Stage: Not Applicable Right Bank: Rip.Veg: Shrubs Instream Veg: None Algae Moss Vascular Rip.Veg: Stage: Not Applicable Left Bank: FISH Minimum Maximum Total Voltage Number of Lenath fished Species Site Number Capture Length (mm) Length (mm) Method Fish Events (m) Time 3 68 73 FF 100 56 sec 600 RB Roll#: 2, Frame#3, CD#1, Image#28, Direction: U, SCALE/COMMENT: cam bag Roll#: 2, Frame#4, CD#1, Image#29, Direction: D, SCALE/COMMENT: probe SITE CARD: site=UTM SITE CARD: site is ~ 30m u/s from mouth MORPHOLOGY: Flows in incised channel through 10-15m wide valley, sparsely forested by conifers. SPAWNING HABITAT: Abundant pea-sized gravel excellent for spawning. Many holding areas. OVERWINTERING HABITAT: Available in some deeper pools, but rainbow trout likely move d/s to Pinkut Creek. OTHER HABITAT: Nice brook with good habitat overall.

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map #

ILP#

3.0

093K.051

Coast Name: Cocal Name:				STR	EAM RE	FERENC	ING			
Reach #: 3.0	Gazetted Nam	e:				Loc	al Name:			
Reach #: 3.0	Watershed Co	de: 000-0000	00-00000-0000	0-0000-0000-00	0-000-000-00	00-000-000	ILP Ma	p#: 093K.0	51 ILP	#: 51006
Magnitude: 1 SGC Zone: ESSF Open water: Absent SIG	3, 4 (194)				", RE	ACH .				
Confinement: Frequently Confinedent: Frequently Confinement: Frequently Confinedent: Frequently Conf	Reach #: 3.0		ודט	M(Zone/East/No	erth):					
Steelev (n): 1313	.		-	-	•			•		4
Bars: None Side Diagonal Mid-channel Span Braid Landuse: None/natural						_	stion: Conifer		pen water. Abse	·**
SITE			_		. –					1
Site #: 190	Bars: None ⊻] Side ∐	Diagonal	Mid-channel			anduse: None	maturar		
Site Length (m):					TO THE PROPERTY OF	er annerender	COAE	Cons. M	IMAC Date:	2001-00-23
No Vis.Ch.: Intermittent: Channel Width (m): 0.98 0.7 1.3 6 Gradient 2.25 3.5 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.21 0.16 0.280 4 Pool Depth (m): 0.22 0.280 4 Pool Depth (m): 0.22 0.280 4 Pool Depth (m): 0.22 0.280 4 Pool	-				40					2001-03-23
No Vis.Ch.: Intermittent: Channel Width (m): 0.98 0.7 1.3 6 Channel Width (m): 0.98 0.7 1.3 6 Channel Width (m): 0.98 0.7 1.3 6 Channel Width (m): 0.99 Channel Width (m): 0.99 Channel Width (m): 0.98 0.7 1.3 6 Channel Width (m): 0.99 Channel Wi	Site Length (ny. 150 Dienaskieski	GISOTIM		CHA		5 (47 - 5 V			
Channel Width (m): 0.98 0.7 1.3 6		7	<u>.</u> []		25 44 5 4 4 7 2		#7	5/40-4/5/5/4-8-4-24	Avg Min	Max #
	_	=		nnel Width (m):				Gradient %	4.25 3	5 4
Banktill Depth (m); U.17 U.1 U.2 S Turbidity: Turbid Low					0.98 0.	7 1.3	6 Po	ol Depth (m)	0.21 0.16	0.280 4
Temp (C): 7 pH: 6.7 Conductivity: 20 Moderate Clear Part	. •	4	Bar	nkfull Depth (m):	0.17 0.	1 0.2	3	Turb	idity.: Turbid	Low
Bed Material: Dominant: Fines Subdominant: Cobble Di (cm): 1.00 Channel Pattern: Sinuous Islands: None Coupling: Decoupled Confinement: Frequently Confined Morphology: RP Riffle Pool Total Cover: Abundant Type: SWD LWD B U DP OV IV LWD Islands: Property Distributed Left Bank: Shape: V - shape Texture: Fines of Gravel Cobble Boulder Rock Manmade 21-40% Right Bank: Rip. Veg: Stage: Mature forest Left Bank: Rip. Veg: Stage: Mature forest Instream Veg: None Algae Moss of Vascular Time Method Events (m) Length fished (m) Length fished Time Method Events 150 99 sec 600 NFC 0 MRINIMUM Length (mm) Length (mm) MRINIMUM Length (mm) Length (mm) MRINIMUM Length (mm) Length (mm) MRINIMUM Length (mm) Length (mm) MRINIMUM Leng	<u></u>	T en	np (C): 7	pH: 6.7		Conductivity	20		Moderate	_ Clear ✔
Subdominant: Cobble D (cm): 1.00 Channel Pattern: Sinuous Islands: None Coupling: Decoupled Confinement: Frequently Confined Morphology: RP Riffle Pool Total Cover: Abundant L Type: SWD LWD B U DP OV IV Amount T T T T S D D T T T Location: P/S/O: I Caver: Pick Manmade Crown Closure Left Bank: Shape: V - shape Texture: Fines (Gravel) Cobble (Bank: Rip. Veg: Confierous Left Bank: Rip. Veg: Confierous Stage: Mature forest Instream Veg: None Algae Moss (V) Vascular Time Method Events (m) 150 99 sec 600 NFC 0					MORPI	OLOGY				
Channel Pattern: Sinuous Islands: None INDICATORS INDIC	Bed Material:	Dominant: F	ines	D95 (cm): 20	00.0	Bars: Non	Side 🗌	Diagonal	Mid-channel	- $ 1$
Coupling: Decoupled Confinement: Frequently Confined Morphology: RP Riffle Pool C1 C2 C3 C4 C5 S1 S2 S3 S4 S5 Total Cover: Abundant LWD: Few LWD Dist: Evenly Distributed Right Bank: Shape: V - shape Texture: Fines Gravel Cobble Boulder Rock Manmade Crown Closure Left Bank: Rip. Veg: Coniferous Left Bank: Rip. Veg: Coniferous Left Bank: Rip. Veg: Stage: Mature forest Left Bank: Rip. Veg: Coniferous Left Bank: Rip. Veg: Coniferous Stage: Mature forest Left Bank: Rip. Veg: Species Total Minimum Method Events (m) Time Fish Method Events (m) Time Fish Method Events (m) Species Total Length (mm) Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Minimum Length (mm) Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	Si	ubdominant: C	Cobble	D (cm): 1.	.00					Braid [_]
Confinement: Frequently Confined C1 C2 C3 C4 C5 S1 S2 S3 S4 S5 Morphology: RP Riffle Pool COVER* Total Cover: Abundant LWD: Few LWD Few LWD Dist: Evenly Distributed Right Bank: Shape: V - shape Right Bank: Rip. Veg: Coniferous Right Bank: Rip. Veg: Coniferous Left Bank: Rip. Veg: Stage: Mature forest Left Bank: Rip. Veg: None Algae Moss V vascular FISH Site Number Capture Number of Length fished Total Voltage Species Total Minimum Length (mm) Length (mm) Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD: Site=UTM SITE CARD: Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY: Flows through forested swale. SPAWNING HABITAT: None - no suitable substrate. OVERWINTERING HABITAT: None - too shallow. OTHER HABITAT: Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	Channel Pat	tern: Sinuous		Islands: No		. г	O1 B1	B2 B3	D1 D2 D	3
Continement: Frequenty Contined Morphology: RP Riffle Pool CQ V E R Total Cover: Abundant LWD: Few LWD Dist: Evenly Distributed Right Bank: Shape: V - shape Texture: Fines Gravel Cobble Boulder Rock Manmade Crown Closure Left Bank: Shape: V - shape Texture: Fines Gravel Cobble Boulder Rock Manmade 21-40% Right Bank: Rip. Veg: Coniferous Stage: Mature forest Left Bank: Rip. Veg: None Algae Moss V Vascular FI.S H Site Number Capture Method Events (m) Fish Length (mm) Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Minimum Length (mm) Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	=	-						\$1 \$2	S3 S4	S5
Total Cover: Abundant LWD: Few LWD Dist: Evenly Distributed Right Bank: Shape: V - shape Left Bank: Rip.Veg: Coniferous Left Bank: Rip.Veg: Stage: Mature forest Left Bank: Rip.Veg: None							T			n l
Total Cover: Abundant LWD: Few LWD Dist: Evenly Distributed Right Bank: Shape: V - shape Left Bank: Rip.Veg: Coniferous Left Bank: Rip.Veg: Stage: Mature forest Left Bank: Rip.Veg: None Algae Moss V Vascular FISH Site Number Capture Method Events (m) Time Voftage Species Total Fish Length (mm) Length (mm) 190 EF 1 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	Morpho	ogy. RP	Ciffie Fuoi							
Total Cover: Abundant LWD: Few LWD Dist: Evenly Distributed Right Bank: Shape: V - shape Left Bank: Shape: V - shape Left Bank: Rip. Veg: Texture: Fines Gravel Cobble Boulder Rock Manmade 21-40% Right Bank: Rip. Veg: Stage: Mature forest Left Bank: Rip. Veg: Stage: Mature forest Instream Veg: None Algae Moss Vascular FISH Site Number Capture Method Events (m) Time Fish Length (mm) Length (mm) Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM SITE CARD : Site=UTM SITE CARD : Site=UTM SITE CARD : Site=UTM SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and								55 J	ov 1 w 1	
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Left Bank: Shape: V - shape Texture: Fines Gravel Cobble Boulder Rock Manmade 21-40% Right Bank: Rip.Veg: Stage: Mature forest Left Bank: Rip.Veg: Stage: Mature forest Left Bank: Rip.Veg: Stage: Mature forest Stage: Mature forest Instream Veg: None Algae Moss Vascular FISH Site Number Capture Number of Events (m) Time Method Events (m) Time Fish Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY: Flows through forested swale. SPAWNING HABITAT: None - no suitable substrate. OVERWINTERING HABITAT: None - too shallow. OTHER HABITAT: Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and		Ť		Sinna 📶 Cr				Manmade	Cm	own Closure
Right Bank: Rip.Veg: Stage: Mature forest Left Bank: Rip.Veg: Stage: Mature forest Stage: Mature forest Stage: Mature forest Instream Veg: None Algae Moss Vascular FISH Site Number Capture Method Events (m) Total Time Sepecies Total Fish Length (mm) Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and		•						=	<u> </u>	21-40%
Site Number Capture Number of Length fished Total Voltage Species Total Length (mm)	•									
Site Number Capture Number of Length fished Total Voltage Species Total Fish Length (mm) Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	_			Stag	ge: Mature fo	rest	Instream Veg	: None	Algae Moss	✓ Vascular
Site Number Capture Number of Length fished Total Voltage Species Total Fish Length (mm) Length (mm) 190 EF 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTM SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and					F	ISH:				
190 EF 1 150 99 sec 600 NFC 0 Roll#: 4 , Frame# 17 , CD# 1 , Image# 90 , Direction: U , SCALE/COMMENT: book Roll#: 4 , Frame# 18 , CD# 1 , Image# 91 , Direction: D , SCALE/COMMENT: cam bag SITE CARD : site=UTIM SITE CARD : Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY : Flows through forested swale. SPAWNING HABITAT : None - no suitable substrate. OVERWINTERING HABITAT : None - too shallow. OTHER HABITAT : Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	Site Number	Capture	Number of	Length fished	Total	Voltage	Species		1	
Roll#: 4, Frame# 17, CD# 1, Image# 90, Direction: U, SCALE/COMMENT: book Roll#: 4, Frame# 18, CD# 1, Image# 91, Direction: D, SCALE/COMMENT: cam bag SITE CARD: site=UTM SITE CARD: Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY: Flows through forested swale. SPAWNING HABITAT: None - no suitable substrate. OVERWINTERING HABITAT: None - too shallow. OTHER HABITAT: Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and			Į	1	ł		NEC	i	Lengui (mm)	Cendra (mm)
Roll#: 4, Frame# 18, CD# 1, Image# 91, Direction: D, SCALE/COMMENT: cam bag SITE CARD: site=UTM SITE CARD: Observed channel deteriorates d/s in wetland in reach 2. MORPHOLOGY: Flows through forested swale. SPAWNING HABITAT: None - no suitable substrate. OVERWINTERING HABITAT: None - too shallow. OTHER HABITAT: Low to moderate value habitat - creek fairly shallow but has relatively good rearing habitat in abundant and	·		<u> </u>	<u> </u>	<u>!</u>		1	!	1	·
	Rol#: 4, Fra SITE CARD SITE CARD MORPHOLO SPAWNING OVERWINTI OTHER HAE	ame# 18 , Ci : site=UTM : Observed o OGY : Flows HABITAT : I ERING HAB	D# 1 , Images channel deter through fores None - no sui	# 91 , Direction fiorates d/s in v sted swale. Itable substrate	n: D , SCAL wetland in re	E/COMMEN	: cam bag	good rearii	ng habitat in abi	undant and

BFP FFHI 2001 - Upper Pinkut Watershed

Reach # ILP Map # ILP # 1.0 093K.051 51009

			STR	EAM	REI	ERE	ICIN	G -		\$ 7.5		1	
Gazetted Nan	ne:					1	Local N	ame:					1
Watershed Co	ode: 000-000	000-00000-00	000-0000-0000-0	00-000-0	00-000	0-000-000		ILP N	Map #: 093K.05	51	ILP	#:	51009
					REA	CH .							
Reach #: 1.	0	ŧ	TM(Zone/East/N	orth): 10	.30690)5.604364	8		S	iample	Type:	Biase	ed
Length (km):	.56	Co	upling: Decoupled	đ	Ma	ignitude:	1				Zone:		1
Gradient (%):			ement: Unconfine	ed .		Order:				pen wa	ter: Pres	ent	
US Elev (m):	1270	l: 	slands: NONE	_		parian Ve	getatio	n: Wetla	nd				-
Bars: None	Side 🗌	Diagonal	Mid-channel	Span		Braid	Land	use: Nor	ne/natural		See See See See	o acceptation	svest (early of to
					SIT		- W. W.	发表		A. 1854		G(2)(\$)	
Site #: Site Length		Field UTA GIS UT	f 10.306478.604: M	3377		•	icy: C0 ncy Nam		Crew: MJ Consulting Ltd	/MG I.	Date:	2001-0	9-23
				C	HAN	INEL	7. H. F		ST.	ning s		. O.L	
No Vis.Ch.:	Intermitte	ent:		Avg	Min	Max	#			Avg	Min	Max	#
Dewatered:	Trib	s.: 🗌 🔲	hannel Width (m):	1.02	0.7	1.5	6		Gradient %:	1.00	0	2	3
Stage: Low	7		Wetted Width (m):	1.02	0.7	1.5	6	P	col Depth (m):	0.00	0	0] 3
Med	Ī		ankfull Depth (m):	0.77	0.7	8.0	3		Turbi	dity.:	Turbid []	Low
High	✓ Te	mp (C): 9	pH: 6.8			Conductiv	vity: 20			M	oderate] (Clear 🗹
				MOR	PH	OLOG				virban T			
1	: Dominant: I		D95 (cm): 0			Bars: No	on 🗹	Side _	_ Diagonal _	Mid-	-channel	_	Span 📙 Braid 🗍
	Subdominant: I	• • •	• •					5.		54		,	Maid
}	ttern: Sinuous oling: Decoup		Islands: No	one		URBANCI ICATORS		<u>B1</u>	B2 B3	D1	D2 D	<u>*</u>	
	nent: Frequer				C1		C3 C	4 C5	S1 S2	S3	S4	 S5	
I .	•	Large Channe	s l		$\overline{\Box}$					T		$\overline{\Box}$	
				o March	COV	ER							
Total Cover.	Abundant		Type:	SWD	LN	/D	в	U	DP C	DV	í۷		
LWD:	Nama		Amount:	N	N	i i	N	S	Т	T	D		
	Note Not Applicable	, [Location: P/S/O:									FS	z: 🗌
Right Bank:	Shape: Ur	dercut Tex	ture: Fines 🗹 Gr	avel	Cobbk	e Boul	der	Rock [] Manmade]	Cn	own Ck	sure
Left Bank:	Shape: Ur		ture: Fines 🗸 Gr		Cobbl	_	der	Rock _	Manmade			1-2	20%
Right Bank:	Rip.Veg: G	ass	Stag	ge: Not A	pplical	ble				_	_		_
Left Bank:	Rip.Veg:		Stag	ge: Not A	pplical	ble	Inst	ream Ve	g: None 🗌 i	Algae 🛚	Moss	Va	scular 🗸
50.00					FIS	SH .	3835						
Site Number	Capture	Number of	Length fished	Tota		Voltage	: S	pecies	Total Fish	Minin			cimum th (mm)
191	Method EF	Events 1	(m) 150	190 s	_	700		NFC	0	Lengu	(11111)	Leng	D1 (111111)
<u>}</u>	<u>'</u>		# 86 , Direction	1			'		1 - !				
			# 87 , Direction										
SITE CARD	•	, <u>-</u>	,	,									
			sh observed in l										
WATERBOD			-alpine meadow	ın deep	INCIS	ed chani	nel.						
OVERWINTE	ERING HAB	TAT : In de	ep channel or la	ke.									
			but none found	. Some :	spawi	ning grav	els in l	ower 20	m of reach, t	hen all	deep ru	ın with	good
cover for CT	in slow flow	. No rainbov	trout habitat.										
1													

Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

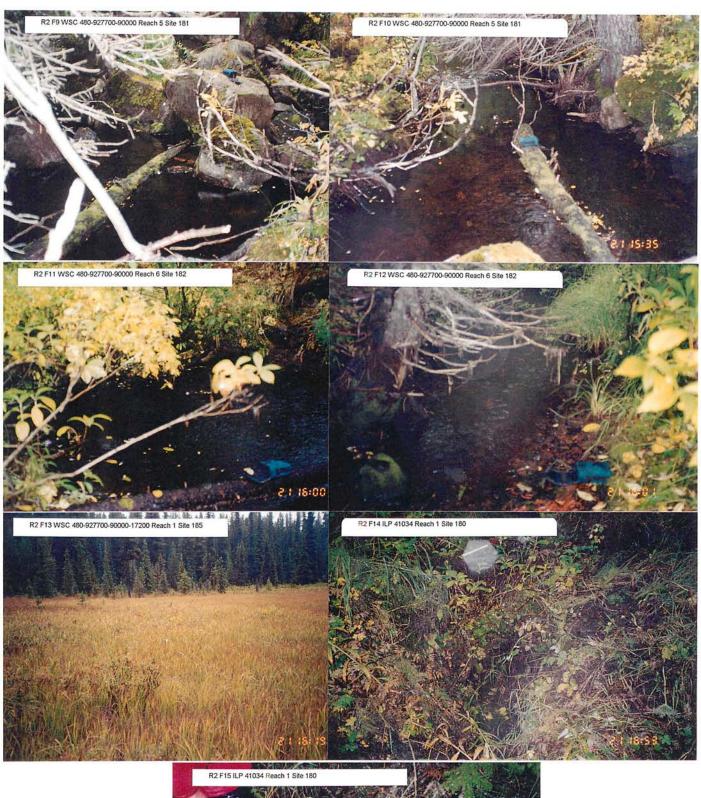
Upper Pinkut Creek Watershed 2001/02

• Appendix II: Photographs

Index of Photos Arranged by Roll and Frame * See Reach/Site Summary for Site Photo Reference Information

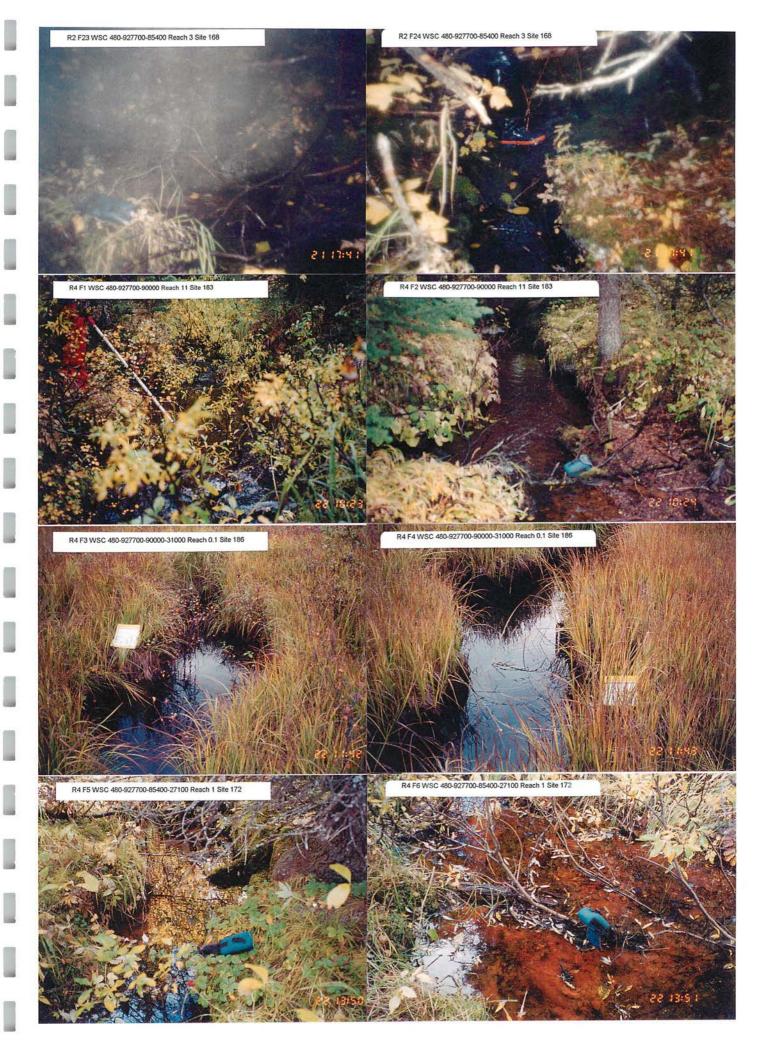
Site	Roll	Frame	Neg	CD	Image	Watershed Code	Gazetted Name	ILP Map	ILP	Reach	Dir	Owner	Focal	Date	Comment
	#	#	#	#	#								Length		
154	2	1	1	1	26	480-927700	Pinkut Creek		ļ	10	ū	SITE	STD	2001-09-21	
154	2	2	2	1	27	480-927700 480-927700-91300	Pinkut Creek			10 1	D	SITE	STD	2001-09-21 2001-09-21	
189	2	3	4	1	28 29	480-927700-91300 480-927700-91300				1	٥	SITE	STD	2001-09-21	
189 166	2	5	5	1	30	480-927700-91300		093K.041	41000		U	SITE	STD	2001-09-21	boot
166	2	6	6	1	31		 	093K.041		- ;	D	SITE	STD	2001-09-21	
178	2	7	7	1	32		 	093K.041	41027	1	Ü	SITE	STD	2001-09-21	
178	2	8	8	1	33			093K.041	41027	1	D	SITE	STD		water tester.
181	2	9	9	1	34	480-927700-90000	1		11021	5	Ū	SITE	STD	2001-09-21	
181	2	10	10	1	35	480-927700-90000				5	D	SITE	STD	2001-09-21	
182	2	11	11	1	36	480-927700-90000				6	U	SITE	STD	2001-09-21	cam bag
182	2	12	12	1	37	480-927700-90000				6	۵	SITE	STD	2001-09-21	cam bag
185	2	13	13	1	38	480-927700-90000-17200				1	X	SITE	STD	2001-09-21	No scale.
180	2	14	14	1	39		L	093K.041		_ 1	D	SITE	STD	2001-09-21	
180	2	15	15	1	40	<u> </u>		093K.041		1	U	SITE	STD	2001-09-21	
171	2	16	16	1	41			093K.041		4	Ü	SITE	STD		mg - cascade in features.
171	2	17	17	1	42		ļ	093K.041	41013	4	Ü	SITE	STD	2001-09-19	
171	2	18	18	1	43		 	093K.041		4	D	SITE	STD	2001-09-19	
170	2	19	19	1	44	·	-	093K.041		2	U	SITE	STD	2001-09-19	
170	2	20	20	1	45		<u> </u>					SITE	STD	2001-09-19	
177 177	2	21 22	21 22	1	46 47	 	 	093K.041		2 2	X U	SITE	STD	2001-09-19 2001-09-19	
168	2	23	23	1	48	480-927700-85400	ļ	093N.041	41023	3	Ü	SITE	STD	2001-09-19	
168	2	24	24	1	49	480-927700-85400	 			3	Ď	SITE	STD	2001-09-19	
183	4	1	1	1	74	480-927700-90000	 			11	Ü	SITE	STD	2001-09-22	probe
183	4	2	2	1	75	480-927700-90000	 	-		11	D	SITE	STD	2001-09-22	cam ban
186	4	3	3	1	76	480-927700-90000-31000				0.1	Ü	SITE	STD	2001-09-22	
186	4	4	4	1	77	480-927700-90000-31000				0.1	D	SITE	STD	2001-09-22	
172	4	5	5	1	78	480-927700-85400-27100				1	Ū	SITE	STD	2001-09-22	
172	4	6	6	1	79	480-927700-85400-27100				1	BD	SITE	STD	2001-09-22	
175	4	7	7	1	80	480-927700-85400-48400				1	U	SITE	STD	2001-09-22	Mac
175	4	8	8	1	81	480-927700-85400-48400				1	D	SITE	STD	2001-09-22	
176	4	9	9	1	82	480-927700-85400-48400-2600				11	U	SITE	STD	2001-09-22	
167	4	10	10	1	83	480-927700-85400	<u> </u>			2	U	SITE	STD	2001-09-22	
167	4	11	11	1	84	480-927700-85400				2	D	SITE	STD	2001-09-22	
174	4	12	12	1	85		ļ	093K.041		3	Х	SITE	STD	2001-09-22	
191	4	13	13	1	86		ļ	093K.051		1) (SITE	STD	2001-09-23	
191	4	14	14	1	87 88	480-927700-90000	 	093K.051	51009	19	D	SITE	STD	2001-09-23 2001-09-23	
184	4	15	16	1		480-927700-90000	 			19	D	SITE	STD	2001-09-23	
184 190	4	16 17	17	+	89 90	480-927700-90000	 	093K.051	E1006	3	U	SITE	STD	2001-09-23	book
190	4	18	18	1	91	-	 	093K.051		3	D	SITE	STD	2001-09-23	cam han
156	4	19	19	1	92	480-927700	Pinkut Creek	00011.001	01000	16	D	SITE	STD	2001-09-23	
156	4	20	20	1	93	480-927700	Pinkut Creek			16	Ü	SITE	STD	2001-09-23	
155	4	22	22	1	95	480-927700	Pinkut Creek			14	Ď	SITE	STD	2001-09-23	
155	4	23	23	1	96	480-927700	Pinkut Creek			14	Ü	SITE	STD	2001-09-23	lmg
161	4	24	24	1	97	480-927700-69200-72600				1	Ü	SITE	STD	2001-09-23	cam bag
161	4	25	25	1	98	480-927700-69200-72600				1	D	SITE	STD	2001-09-23	
159	6	1	1	1	123	480-927700-69200				8	U	SITE	STD	2001-09-23	cam bag
159	6	2	2	1	124	480-927700-69200				8	D	SITE	STD	2001-09-23	cam bag
157	6	3	3	1	125			093K.042		1	U	SITE	STD	2001-09-24	cam bag
157	6	4	4	1	126			093K.042	42001	1	D	SITE	STD	2001-09-24	
163	6	5	5	1	127	480-927700-78100				1	U	SITE	STD	2001-09-24	
163	6	6	6	1	128	480-927700-78100	ļ.,			1	D	SITE	STD	2001-09-24	
164	6	7	7	1_	129	480-927700-78100	ļ			2	IJ	SITE	STD	2001-09-24	
164	6	8	8	1	130	480-927700-78100	ļ			2	D	SITE	STD	2001-09-24	cam bag
162	6	9	9	1	131	 	<u> </u>	093K.042	42025	1	U	SITE	STD	2001-09-23	no scale - meadow.
158	6	10	10	1	132	480-927700-69200	-			7	U	SITE	STD	2001-09-24	mg - BD in features at start of reach
158	6	11	11	1	133	480-927700-69200	 	ļ		7 2	U	SITE	STD	2001-09-24	trees - wetland reach.
160	6	12	12	1	134	480-927700-69200-38200	 			$-\frac{2}{2}$	D	SITE	STD	2001-09-24	
160	6	13	13	1	135	480-927700-69200-38200	<u> </u>	·		- 4	ע	SILE	3117	2001-09-24	DITUE:







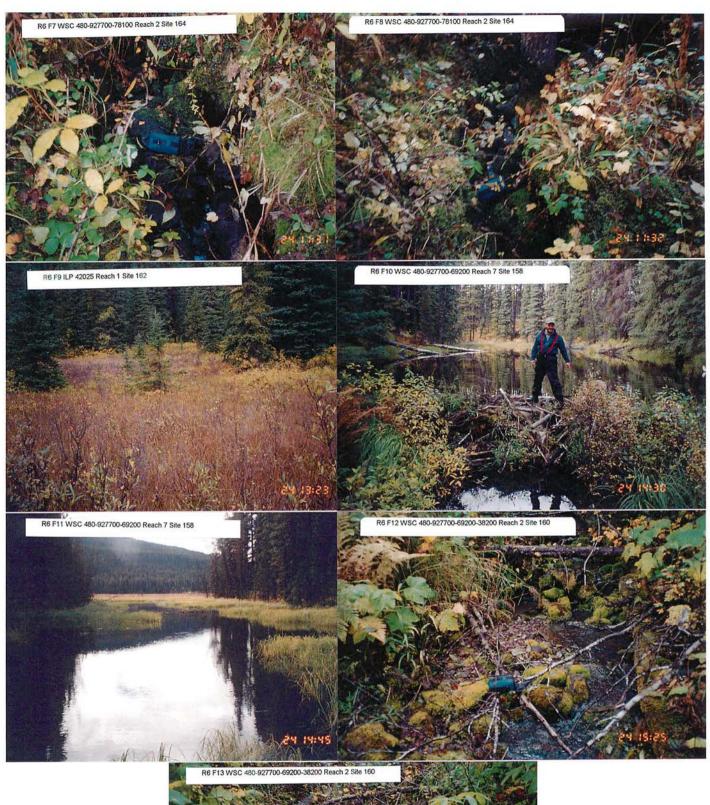














Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

Upper Pinkut Creek Watershed 2001/02

• Appendix III: Hardcopy Maps

Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

Upper Pinkut Creek Watershed 2001/02

• Appendix IV: Phase Completion Reports

Project Phase Completion Report Phases -1-3

FRBC Multi-Year Agreement Number:

0000105

MELP Project Number:

BFP-C016-001-2002

FRBC Activity Number:

10437

Project Name	FDIS Project Number	FDIS Project WSC
Tributaries in the Endako River Watershed – 2001/02	1643	180-374000-95200-01900
Tchesinkut Lake Tributaries – 2001/02	1643	180-374000-95200-01900
Upper Pinkut Creek Watershed – 2001-02	1644	480-927700

Project Type:

1:20,000 Reconnaissance Fish and Fish Habitat Inventory

Report Date:

September 14, 2001

Proponent:

Babine Forest Products Co.

Company/Agency:

FINS Consulting Ltd.

Contact Person:

Shawn Redden

Contact Phone:

(250) 635-8481

Contact E-mail:

fins@telus.net

Ministry Representative:

Matt Jessop

List of Deliverables Submitted

Deliverable Product	Received	Approved (QA)
Project Plan (digital and hardcopy)	V	SB
Excel/Word File Names	V	6B
Project Overview Map	✓	SB
List of References and Contacts	✓	SB
ILP Data Sheets (digital and hardcopy)	V	SB
ILP Map Status	V	5B
Interim Maps	V	5B
Reach Table (digital and hardcopy)	V	58
Lake Table (digital and hardcopy)	/	SB
Sampling Design Sheet (from FDIS)		SB
FDIS database (digital)		5B

Activity Log

Date	Activity
July 20 - Aug 29, 2001	ILP assignment,, Data Review, Air Photo Interpretation and Data
	Entry, Draft Sampling Plan
September 18, 2001	Meeting with Matt Jessop for sampling plan approval
September 19, 2001	Finalize Project Plan

Summary of Work Completed

Project Area Statistics

Project Area (km2)	520
Number of TRIM mapsheets	12
Largest watershed (stream order)	5
Number of 3rd order basins	21
km of stream in project area	770
Number of stream reaches in project area	1267
Number of lakes in project area	49 (includes 13 wetlands)

Planned Sampling Program

Number of reach sample sites proposed	189
Number of Primary lakes proposed	0
Number of secondary lakes proposed	0
Number of sites where cutblock level fish-stream ID is proposed	0

Summary of Phase Costs

As per budget attached in Appendix VI in project plan.

Progress and Problems Summary

None

Next Phase Project Plans and Constraints

Plan to implement field data collection in mid September.

Ministry Representative Acceptance

Date:
Date:

Project Phase Completion Report

Phase -4

FRBC Multi-Year Agreement Number:

0000105

MELP Project Number:

BFP-C016-001-2002

FRBC Activity Number:

10437

Project Name	FDIS Project Number	FDIS Project WSC
Tributaries in the Endako River Watershed – 2001/02	1643	180-374000-95200-01900
Tchesinkut Lake Tributaries – 2001/02	1643	180-374000-95200-01900
Upper Pinkut Creek Watershed - 2001-02	1644	480-927700

Project Type:

1:20,000 Reconnaissance Fish and Fish Habitat Inventory

Report Date:

October 24, 2001

Proponent:

Babine Forest Products Co.

Company/Agency:

FINS Consulting Ltd.

Contact Person:

Shawn Redden

Contact Phone:

(250) 635-8481

Contact E-mail:

fins@telus.net

Ministry Representative:

Matt Jessop

List of Deliverables Submitted

Deliverable Product	Received	Approved (QA)
Field Site Cards and Fish Collection Cards	V	-313

Activity Log

Date	Activity
September 19-29, 2001	Field sampling conducted. Field QA completed October 23, 2001 -
	joint QA across two projects.

Summary of Work Completed

Actual Sampling Program Completed

Number of Stream reaches Sampled	187
Number of Primary Lake Surveys Completed	0
Number of Secondary Lake Surveys Completed	0
Number of sites where cutblock level fish-stream ID completed	0

Summary of Phase Costs

As per budget attached in Appendix VI in project plan.

Progress and Problems Summary

None

Next Phase Project Plans and Constraints

Plan to complete data entry, reporting and mapping by March 15, 2002.

Ministry Representative Acceptance

Report Submitted by: FINS Consulting Ltd.	Date: October 24, 2001
Phase completion approved:	Date:
Comments:	

Project Phase Completion Report Phases -5-6

FRBC Multi-Year Agreement Number:

0000105

MELP Project Number:

BFP-C016-001-2002

FRBC Activity Number:

10437

Project Name	FDIS Project Number	FDIS Project WSC
Tributaries in the Endako River Watershed – 2001/02	1643	180-374000-95200-01900
Tchesinkut Lake Tributaries – 2001/02	1643	180-374000-95200-01900
Upper Pinkut Creek Watershed – 2001-02	1644	480-927700

Project Type:

1:20,000 Reconnaissance Fish and Fish Habitat Inventory

Report Date:

March 28, 2002

Proponent:

Babine Forest Products Co.

Company/Agency:

FINS Consulting Ltd.

Contact Person:

Shawn Redden

Contact Phone:

(250) 635-8481

Contact F none.

Contact E-mail:

fins@telus.net

Ministry Representative:

Matt Jessop

List of Deliverables Submitted

Deliverable Product	Received	Approved (QA)
4 copies of watershed report (Includes embedded overview map)	/	56
2 digital copies of above report		5B
4 copies of Project and Interpretive Maps		SB
2 digital copies of above map export files 1 digital copy of above map plot files	/	SB
Hardcopy FISS update forms and maps (Attachment II)		SB
 Photodocumentation (Attachment III) Photodocumentation Form 1 Photodocumentation report printout (Excel spreadsheet - Export from FDIS) Indexed album of all negatives 2 indexed copies of photo CD's 	V	SB
Field Data (Attachment IV) • Field site cards, fish collection forms	V	5B
Digital Data (attachment V – see readme.txt file)	V	5B
1 hardcopy and 1 digital copy of QA report		5B
1 hardcopy and 1 digital copy of Phase Completion Report		5B

Activity Log

Date	Activity
Nov 1, 2001 - March 18,	Data entry into FDIS database, watershed and lake report
2002	compilation, mapping
March 19, 2002	Submit report and maps to QA (ACER)
March 20–27, 2002	Address ministry and QA review of report and maps

Summary of Work Completed

Verification of Project Area Statistics

Project Area (km2)	520
Number of TRIM mapsheets	12
Largest watershed (stream order)	5
Number of 3rd order basins	21
km of stream in project area	770
Number of stream reaches in project area	1278
Number of lakes in project area	49 (includes 13 wetlands)

Verification of Sampling Program

Number of Stream reaches Sampled	187
Number of Primary Lake Surveys Completed	0
Number of Secondary Lake Surveys Completed	0
Number of sites where cutblock level fish-stream ID completed	0

Summary of Phase Costs

As per budget attached in Appendix VI in project plan.

Progress and Problems Summary

None

Ministry Representative Acceptance

ate:

Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

Upper Pinkut Creek Watershed 2001/02

• Appendix V: QA Reports

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

FORM 1A

DELIVERABLE CHECKLIST FOR PRE-FIELD - PAGE 1 OF 1

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

Pre-field Project Planning Report Deliverables	Hardcopy	Digital	Acceptable Y/N	Comments
Cover page	~	~	Y	
2. Table of Contents	~	~	Y	Edit Date and Ministry Representative
List of digital products	~	~	Y	
4. Overview map	~	N/A	N	Requires scale, N, inset of prov. context etc.
Existing data review FISS map	Not Provided	Digital (web) FISS review	Y	Very few historical features, all shown on final interp map.
 list of references 	~	~	Y	
 list of contacts 	~	~	Y	
 new FISS information summary 	N/A	N/A	N/A	
ILP data* ILP data sheets	~	~	Y	
ILP map list	~	~	Y	
 ILP maps or status report 	~	N/A	Y	
7. Interim maps*map list	~	Optional	Y	
 maps 	~		Y	
8. FDIS database	N/A	~	Y	
 FDIS QA Report 	~	~	Y	
Sampling design sheets	~	~	Y	
10. Aerial video record (optional)	N/A			
11. Project plan	~	~	Y	
12. Pre-field Planning Report complete	~	~	Y	
13. Related items required to perform QAAir photography	~	N/A	Y	

Approved: Yes

Comments: All required deliverables submitted and meet QA standards, with the exception of the Project Overview Map.

Recommended actions: Provide Overview Map with TRIM grid, provincial context, scale, legend or distinct identifier/label of project outline boundary (as per final without sites).

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

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	
	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	
	If NO, report known available information that was not provided in bibliography.		
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:	N/A	
	FISS forms	N/A	
	 clean NTS maps 	N/A	
	a copy of each new source provided	N/A	
	a reference to each new source provided	N/A	
	If NO, report required information not provided.	N/A	

Approved:

Yes

Comments:

Very thorough.

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: February, 2002

FORM 1c

INTERIM LOCATIONAL POINT MAPS AND DATA SHEETS - PAGE 1 OF 1

ILP Deliverables

		Y/N	Comments
ILP map	Provided as separate ILP maps	N	Sent to SeanC
	Provided as part of interim maps	Y	
	Maps and ILPs legible	Y	
ILP data sheet	Complete/consistent with TRIM maps	Y	
	Tables match standard	Y	
	UTMs provided for areas of congestion	N/A	Not required and NIDs present for all reaches.

Are ILP deliverables acceptable (Y/N)? Yes

Comments:

Complete ILP Coverage

	TRIM sheet	Basin reference	N streams with watershed codes	N streams with ILPs	N streams without ILP or watershed code	N inconsistencies between ILP map and ILP data sheet (and FDIS)
1	93K002	N/A	2	13	0	0
2	93K003	N/A	6	56	0	0
3	93K012	N/A	0	9	12009=923	2 (12009, 12010 – R1 not in FDIS)
4	93K013	N/A	14	48	0	0
5	93K014	N/A	13	69	14037= 907	1 (14037 – R1 not in FDIS) -
6	93K015	N/A	0	50	= 909	1 (15028 – R1 not in FDIS)
7	93K022	N/A	0	11	0	0
8	93K023	N/A	0	85	0	0
9	93K024	N/A	0	17	0	0
10	93K041	N/A	23	52	0	0
11	93K042	N/A	9	29	0	0
12	93K051	N/A	0	10	0	0
		Total:	67	449	0	4

Approved:

Yes, coverage good on maps and ILP data sheets complete.

Comments: Check FDIS/ILP data and Maps for consistency on ILPs noted above (12009,12010,14037,15028).

in lake

axe tab

FISH INVENTORY QUALITY ASSURANCE CHECK FORM Project name: Babine Forest Products Fish and Fish Habitat Inventory FRBC project number: 10437 MELP project number: BFP-C016-001-2002 Submitted by: FINS Consulting Ltd. Terrace, BC QA review by: Acer Resource Consulting Ltd. Review date: February, 2002 FORM 1D INTERIM MAP DATA - PAGE 1 OF 1 Interim Map Summary Map item Present Legible Comment Watershed codes V V Waterbody identifiers V **ILPs** V V Forest cover map streams (optional) Watershed boundaries V V Reach boundaries . V Existing features with NIDs New features with NIDs V Proposed reach sample sites (random/discretionary) V V Proposed lake surveys (primary/secondary) Recommended actions: None Approved: Yes **FISS Information** Randomly select and check ten features on the FISS maps to ensure correct information transfer. 5 7 9 10 1 2 3 4 6 8 FISS map # Interim map # **FISS feature** Transferred (Y or N) Location correct Symbol correct NID present Total errors QA Summary Number of marks (10 features × 4 items): 40 Maximum number of errors acceptable (12%): 5

Comments: A visual check of draft Phase VI maps was conducted to confirm transfer of existing FISS information – FISS data was attained digitally and no hardcopy maps were available at the time

of QA. Very few historical FISS features are present in the study area.

Number of errors found:

Yes

Approved:

ACER RESOURCE CONSULTING LTD., FINS/BFP - QA PHASE I-III/2002

 $\Box Y \Box N$

Is the number of errors acceptable:

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: February, 2002

FORM 1E

COMBINED CHECK OF STREAM REACH DATA - PAGE 1 OF 3

List of reaches checked (FDIS /Interim maps/air photos)

	1	2	3	3		4		5		6		1	7	8	9	10		
TRIM map #	93K014	93K014	93K	015	93K01		5 93K014		9	93K014		93K015		93K023		3 93K023	93K023	93K02
ILP /WSC# 180-374000-	-95200- 01900- 2720-3880	14014		-95200- 01900- 4090		200- 900- 90-092		4062		-95200 01900 4090-3		-9520 0190 5520	0-	-95200- 01900- 6160	23021	23046		
NID	54	109	109	121		19	9	3	306		379		426		480	515	582	
Reach #	13	1	10		1		1			3		11		16	1	2		
Fo	r all reacl	nes		1	2	3	4	5	6	7	8	9	10	Comments				
Watershed coo ILP # and ILP ILP sheet, FD all match	map #	interim) n	nap															
NID # and NII UTM (optiona do not include	al, but no e	rrors allow						X						Check map edge bour		oundary		
TRIM map nu	mber																	
Reach number			-				F 775			1					X = 1/2	T		
Reach break lo	ocation																	
Reach map sy	mbol																	
Map status	200000000000000000000000000000000000000																	
Order						?												
Upstream/Dov	vnstream e	levation																
Length																		
Pattern																		
Confinement																		
AN/BR																		
Basin type																		
Total errors				0	0	0	0	1	0	0	0	0	0					
Shaded cell e	rrors	3 9 5		0	0	0	0	1	0	0	0	0	0	-91-7				

Comments: Double check NID map for #5 – this may be an overlap rather than an error. Check order for upper reaches of Shovel – does it remain 5th? (difficult for me to determine without map 93K025)



Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

10437 **MELP**

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

FORM 1E

COMBINED CHECK OF STREAM REACH DATA - PAGE 2 OF 3

List of reaches checked (FDIS /Interim maps/air photos)

	11	12	13	14	15	16	17	18	19	20
TRIM map #	93K023	93K022	93K022	93K003	93K003	93K003	93K013	93K013	93K013	93K002
ILP /WSC# 180-374000-	-95200- 01900- 6580	-95200- 01900- 6900	22006	3007	3023	3049	13018	13020	13028	2004
NID	634	692	7310	810	855	916	969	974	995	1019
Reach #	2	24	1	1	2	1	1	1	2	5

Redefi # 2 24 1					1 1						
For all reaches	11	12	13	14	15	16	17	18	19	20	Comments
Watershed code or ILP # and ILP map #											
ILP sheet, FDIS, ILP (or interim) map all match											
NID # and NID map # or UTM (optional, but no errors allowed; do not include in marking scheme)											
TRIM map number											
Reach number											
Reach break location											
Reach map symbol	T										
Map status											
Order											
Upstream/Downstream elevation								X			
Length											
Pattern											
Confinement											
AN/BR											
Basin type											
Total errors	0	0	0	0	0	0	0	1	0	0	
Shaded cell errors	0	0	0	0	0	0	0	0	0	0	

^{# 17 -} Difficult to tell, but difference in elevation between u/s and d/s values seems off for this reach.

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: February, 2002

FORM 1E

COMBINED CHECK OF STREAM REACH DATA - PAGE 3 OF 3

List of reaches checked (FDIS /Interim maps/air photos)

	21	22	23			24		25		26		2	7	28	29	30						
TRIM map #	93K002	93K012	93K04	42	93	K042	. 9	3K04	2	93K0	41	93K	051	93K051	93K012	93K051						
ILP /WSC#	2010	12007	480- 927700- 69200		42	42006		42006		42006		42006		480- 927700-		41009		51001		51003	12005	480- 927700
NID	1031	1038	27		48		8	8		140		245		247	1024	16						
Reach #	1	2	4		1		5			1		1		1	1	16						
Fo	r all reacl	hes		21	22	23	24	25	26	27	28	29	30		Comment	ts						
Watershed coo	le or					3	0.							13.33	De 104							
ILP # and ILP	map #		No. of			365				19	1											

For all reaches	21	22	23	24	25	26	27	28	29	30	Comments
Watershed code or			38								
ILP # and ILP map #							7				
ILP sheet, FDIS, ILP (or interim) map all match			i				1				
NID # and NID map # or											
UTM (optional, but no errors allowed; do not include in marking scheme)											
TRIM map number						(S. 31)	7			ored his	
Reach number											
Reach break location											
Reach map symbol											
Map status											
Order											
Upstream/Downstream elevation		X									53 m elevation change?
Length		1									
Pattern											
Confinement		X					X				
AN/BR											
Basin type											
Total errors	0	2	0	0	0	0	1	0	0	0	
Shaded cell errors	1										

QA Summary

	All r	eaches
Number of reaches sampled	30	
Number of marks (N reaches sampled × attributes)	N×15	450
Maximum errors acceptable (12% of marks)	54	
Number of errors found	5 (1%)	

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

Is the number of errors acceptable (Y/N)	Y
Number of errors in zero-tolerance attributes	1

Approved:

Comments: Very good consistency with very few errors located during this review. Shaded cell error may be a result of mapsheet overlap - please double check.

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: February, 2002

FORM 1F

COMBINED CHECK OF PRE-FIELD LAKE INFORMATION - PAGE 1 OF 1

List of lakes checked (FDIS/Interim map/air photo)

	1	2	3	4	5	6	7	8	9	10
WBID/WS Code/ILP	910 (Owl Lake)	552FRAN	903	392FRAN	190FRAN	144FRAN	916FRAN	918	862FRAN	912
Reach #	4	10	2	3	11	19	9	6	4	3
NID	910	30	62	433	679	687	796	816	1008	1017
Map #	93K015	93K015	93K014	93K013	93K023	93K022	93K003	93K003	93K002	93K002

Attribute	1	2	3	4	5	6	7	8	9	10	Comments
Official name						ļ					
Alias or local name											
WSC and waterbody identifier "or"											
ILP number and ILP map number											
NID # and NID map #											
UTM (optional, but no errors allowed; do not include in marking scheme)											
Reach number											
Basin type											
Group	X	X		X	X	X	X	X	X	X	
Class (P/S)											
Genesis											
Surface area											
Magnitude											
Biogeoclimatic zone											
Wetland											
Total errors for each lake	1	1	0	1	1	1	1	1	1	1	

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)	16					
Number of errors found	9					
Is the number of errors acceptable (Y/N)	Yes					
Number of errors in zero-tolerance attributes	0					

Approved: Yes

Comments: My interpretation of Lake Group designation from 2:21 is that lakes in the same 'group' must allow fish passage between them (ie: all lakes in the connected group have the same ID). Or, it could be interpreted that the 'group' is identified by the first letter with each lake in the group in sequence (ie: AA, AB, AC etc). However, either method requires that no two disconnected lakes should have the same lake group designation. Several lakes in the table do not appear to be in the same 'group' but share identifiers AA, AB or AC etc. This can be easily corrected by changing the first letter designation in each separate group so that you have groups A_, B_, C_, etc, or by giving lakes within the same group the same identifier (all lakes in the group are AA). Clear eh?

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

FORM 1H

STREAM SAMPLING DESIGN - PAGE 1 OF 1

	Acceptable (Y/N)	Comment
Is the inventory watershed based (i.e., entire watershed)?	Y	
Are random reaches selected for sampling based on the FDIS statistical sampling design?	Y	
For low gradient or small/medium sized streams, is the sample size of reaches ≥ 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	1
 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	Purple and pink.
Are planning tables complete with gear and voucher requirements indicated?	Y	
Does the distribution of sample sites adequately represent all basin types and basin connectivities.	Y	
Is the overall sampling rate (sample number vs total number of reaches) acceptable?	Y	Approximately 15% - increased FDIS to more appropriate sampling rate –nice.
Does the sample design adequately cover the requirements for a reconnaissance inventory?	Y	

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

Yes Approved:

Comments: The sampling design is comprehensive and well considered, reflecting FINS extensive experience in the study area and common sense approach to interpretation of sampling design requirements.

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

FORM 1

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	No lakes sampling necessary.
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?	N	
Is justification provided for those lakes that will not be sampled?	Y	
Are lakes proposed for sampling outlined on TRIM maps with solid and dashed green lines?	N/A	
Are planning tables complete with gear and voucher requirements indicated?	N/A	
Does the sample design adequately cover the requirements for a reconnaissance inventory? If no, the sampling design is rejected.	YES	

Approved:

Yes

Comments: Sampling plan provides justification.

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: February, 2002

FORM 1J

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?	Y	
Does the plan cover reporting requirements?	Y	
Does the plan include proposed staff for field phase?	Y	
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?	N/A	
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	
 water sampling particularly in primary lakes 	N/A	
 fish voucher specimens 	Y	
 other samples. 	Y	Cutthroat DNA
Does and should the plan incorporate any special fish species level inventory needs on a provincial or regional scale?	Y	As above.
Are budget and schedule adequate to complete the project as planned?	Y	
If the answer to any of the above is no, is this going to have an impact on the inventory project? If so, the project plan is rejected.	No	

Approved: Yes

Comments: As per the sampling design, the project plan is comprehensive and well considered, reflecting FINS extensive experience in the study area and common sense interpretation of pre-field planning requirements.

Project name: West Fraser / BFP 1:20 K Fish and Fish Habitat Inventories, 2001

FRBC project number: MELP project number:

Contractor: FINS Consulting Ltd. Field audit by: Acer Resource Consulting Ltd.

Site identifier: XXXXX

Field audit date: October 23, 2001

FORM 2A

FIELD AUDIT: CREW INFORMATION, PERMITS AND SAFETY

Crew information

Crew members' names		Area of	Fir	rst aid	Electrofishing		
	Listed in contract or plan	expertise (bio, geo, other)	Level 1	Transport- ation	Crew member	Crew leader	
Mac Jedrzejczyk	Y	Bio	Y	Y		Y	
Sean Redden	Y	Bio	Y	Y		Y	
	-						

QA comments about crew and/or certifications:

Permits and safety plan

		Acce	ptable	
Group	Item	Y	N	Specify problem
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: All field operations conducted in a safe and effective manner.

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: Sam Buchanan For

For field crew: MJ/SR

Project name: West Fraser / BFP 1:20 K Fish and Fish Habitat Inventories, 2001

FRBC project number: MELP project number:

Contractor: FINS Consulting Ltd. Field audit by: Acer Resource Consulting Ltd.

Site identifier: XXXXX Field audit date: October 23, 2001

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
Smith Root Model 12 B POW	N/A	Y	
Oakton PH	Y	Y	
Oakton Conductivity	Y	Y	
Alcohol Thermometer	Y	Y	
Abney Level	Y	Y	
Tape Measure	N/A	Y	

		Acce	ptable	Notes
Group	Item	Tech.	Data	
Site selection	Representative site	Y	Y	
	Conditions appropriate	Y	Y	
Reference	Stream name (Gaz)	N/A	Y	
	Alias	N/A	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	<u> </u>
	Agency	Y	Y	
	Crew	Y	Y	
	Fish form	Y	Y	1
Channel	Equipment	Y	Y	
	Channel widths	Y	Y	
	Wetted widths	Y	Y	

Field Audit Confirmation:

Field audit leader: Sam Buchanan

For field crew: MJ/SR

FORM 2B

CONTINUED - PAGE 2 OF 2

		Acce	ptable	
Group	Item	Tech.	Data	Notes
Channel	Residual pool depth	Y	Y	
(cont.)	Bankful depth	Y	Y	
	Gradient	Y	Y	
	Stage	Y	Y	
	NVC; Dry/Int; DW; Tribs	Y	Y	
Cover	Total cover	Y	Y	
	Cover elements	Y	Y	
	• 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	

		Acce	Acceptable		
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		

Field Audit Confirmation:

Field audit leader: Sam Buchanan

For field crew: MJ/SR

Project name: FISH INVENTORY QUALITY ASSURANCE CHECK FORM

Project name: West Fraser / BFP 1:20 K Fish and Fish Habitat Inventories, 2001

FRBC project number: MELP project number:

Contractor: FINS Consulting Ltd. Field audit by: Acer Resource Consulting Ltd.

Site identifier: XXXXX Field audit date: October 23, 2001

FORM 2D

FIELD AUDIT: FISH COLLECTION CHECK-PAGE 1 OF 3

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

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

Field Audit Confirmation:

Field audit leader: Sam Buchanan For field crew: MJ/SR

FORM 2D

CONTINUED - PAGE 2 OF 3

		Accep	otable	
Fish ident	ification and fish samples	Y	N	Notes
Fish	Correct identification	N/A		
identification	Correct use of fish key	N/A		
	Procedure for unidentified fish	N/A		
	Knowledge of voucher sample plan	Y		
	Voucher collection/labelling	N/A		
Fish samples	Age sampling, labelling	N/A		
	Genetic sampling/labelling	N/A		
	Other	N/A		

Fish Collection Form

		Acce		
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	

	Temp, cond., turbidity	Y	Y	
Fish summary	Site #	Y	Y	
	Method, method no.	Y	Y	
	Haul/Pass (H/P)	Y	Y	
	Species, stage, total #	N/A	N/A	1.
	Min. length	N/A	N/A	
	Fish activity	N/A	N/A	
Gear	Site #	N/A	N/A	
specifications	Method, method no.	N/A	N/A	
	Haul	N/A	N/A	
	Date, time in	N/A	N/A	
	Date, time out	N/A	N/A	
	Net type, length & depth	N/A	N/A	
	Mesh size	N/A	N/A	
	Set, habitat	N/A	N/A	
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 #	N/A	N/A	
fish data	Site #	N/A	N/A	

Site/Method

Site #

Site UTM

NID map #, NID #

Method, method no.

Acceptable

Tech.

Y

Y

Y

Data

Y

Y

Y

Y

Field Audit Confirmation:

Field audit leader: Sam Buchanan For field crew: MJ/SR

FORM 2D

CONTINUED - PAGE 3 OF 3

		Acce	ptable	
Group	Item	Tech.	Data	Notes
Individual	Method, method no.	N/A	N/A	
fish data	Haul/Pass	N/A	N/A	
(cont.)	Species	N/A	N/A	
	Length	N/A	N/A	
	Weight	N/A	N/A	
	Sex	N/A	N/A	
	Maturity	N/A	N/A	
	Age structure	N/A	N/A	
	Age sample #	N/A	N/A	
	Age	N/A	N/A	
	Voucher	N/A	N/A	
	Genetic structure	N/A	N/A	
	Genetic sample #	N/A	N/A	
	Photos	N/A	N/A	
	Number of fish sampled	N/A	N/A	

Notes:

1. No fish captured, no fish present – fields for fish capture and handling are therefore N/A. Electrofishing technique used was effective and safe. I have no QA concerns with regard to fish sampling techniques. This field crew has extensive inventory experience and I have previously witnessed acceptable fish capture and handling techniques by both Sean and Mac.

Project name: Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437 MELP project number: BFP-C016-001-2002

Submitted by: FINS Consulting Ltd. Terrace, BC

QA review by: Acer Resource Consulting Ltd. Review date: March 19, 2002

FORM 3A

DATA COMPILATION AND REPORTING DELIVERABLES FOR QA - PAGE 1 OF 1

	Deliverable	Hardcopy	Digital	Comments
Watershed	Watershed report			
reporting	Appendices			
	I. FDIS summary and photographs			
	II. Maps			
	Attachments	1		
	I. Pre-field planning document	N/A	N/A	To be submitted with final
	II. Field notes and forms		N/A	
	III. Fish ageing structures	N/A	N/A	
	IV. Fish samples and vouchers		N/A	
	V. Photodocumentation			
	VI. Digital data			
	VII. FISS update data		N/A	
	VIII. Aerial photography	N/A	N/A	
Individual lake	Lake report	N/A	N/A	
reporting (for each lake)	Appendices			
(101 each take)	I. Lake survey form			
	II. Water chemistry data			
	III. Fish collection forms			
	IV. Tributary summary			
	V. Photographs			
	VI. Bathymetric map			
	Attachments			
	I. Photodocumentation			
	II. Digital data			
	III. FISS update data			
	IV. Phase completion reports			
	V. Field notes and forms			
	VI. Aerial photography			
	VII. Fish ageing structures			
	VIII. Fish samples and vouchers			

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: March 19, 2002

FORM 3B

DIGITAL DATA CHECKING - PAGE 1 OF 1

For each FDIS file provided:

FDIS filename:

	Acceptable		
	Y	N	Comments
Conversions done:			
ILP to WSC	X		Awaiting codes from Victoria
NID-UTM	X		Field UTMs entered for all sites
Update bathymetry			
FDIS QA report attached	X		Viewed at FINS office, acceptable errors
Acceptable error report	X		

For each FDIS file and digital map file set:

ARCView fish QA tool

	Filename	Acceptable		
		Y	N	Comments
Digital map files				
Metadata table		X		To be included in final deliverables
Map attributes table		X		To be included in final deliverables
FDIS data check				MELP/Internal QA process
Sequential reach numbering:				
Point locations on TRIM streams:				
Copy of ARCView fish QA tool error report attached		N/A		Maps created in Microstation, approved by Matt Jessop as format for submission (email confirmation).
Acceptable error report		N/A		

Note: The map attributes table, introduced in 1999, replaces the point table and the attribute table from 1998 standards.

Project name: Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437 MELP project number: BFP-C016-001-2002

Submitted by: FINS Consulting Ltd. Terrace, BC

QA review by: Acer Resource Consulting Ltd. Review date: March 19, 2002

FORM 3C

CONSISTENCY CHECK: STREAM CARDS, FDIS, PROJECT, INTERPRETIVE MAPS – PAGE 1 OF 4

	1	2	3	4	5	6	7	8	9	10
Site#	5	28	44	52	54	63	72	82	92	99
Mapsheet #	93K015	93K014	93K014	93K023	93K013	93K013	93K023	93K013	93K023	93K013
ILP/WSC	15005	14056	14065	-01900- 5520	-01900- 2580	-01900- 6160	23014	-01900- 6580	23074	13004
NID	3005	3028	3044	3052	3054	3063	3072	3082	3092	3099

Record errors below with an 'x.' An error occurs if there is any inconsistency among: 1) field site cards, 2) FDIS, 3) project

 Card section
 Attribute
 Where to check
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10

 Header
 Stream name
 1, 2, 3, 4
 3
 4
 5
 6
 7
 8
 9
 10

 Watershed code or ILP map # and ILP #
 1, 2, 3, 4
 3
 4
 5
 6
 7
 8
 9
 10

Header	Stream name	1, 2, 3, 4											
	Watershed code or ILP map # and ILP #	1, 2, 3, 4						X					2 WSCs see notes
	NID map # and NID #	1, 2											
	Reach #	1, 2, 3, 4											
	Site #	1, 2, 3, 4	X	X	X	X	X	X	X	X	X	X	See Note
	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								100			
	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											
	Site gradient	1, 2, 3											
	Reach gradient	2, 3, 4					X	J		X			Map vs card
	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									X		
	Crown closure	1, 2		1									
	Instream vegetation	1, 2											
	Bank shape, texture, riparian vegetation	1, 2											
		-			-		-		_	_	_		

Error

locations

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: March 19, 2002

FORM 3c

CONTINUED - PAGE 2 OF 4

Card section	Attribute	Where to check	1	2	3	4	5	6	7	8	9	10	Error locations
Water	EMS#	1, 2											
	Temperature, pH	1, 2											
	Water chemistry requisition #	1, 2											
	Conductivity, turbidity	1, 2											
Channel	Flood signs	1, 2		1									
morpho-	Bed material	1, 2, 3											
logy	D95, D	1, 2											
	Morphology	1, 2, 3											
	Disturbance indicators	1, 2, 3											
	Pattern	2, 3											
	Islands, bars, coupling	1, 2											
	Confinement	2, 3											
Features	NID map # and NID #	1, 2											
	Type, height/length	1, 2, 3, 4			П								
	Photo, comments	1, 2											
	UTM	1, 2			Г		X						112112-11
Habitat	General comments	1, 2											
quality	Fisheries sensitive zones	1, 2, 3, 4	1										
Photo-	Roll #	1, 2											
documen-	Frame #	1, 2											
tation	Focal length	1, 2											
	Direction	1, 2											
	Comments	1, 2											
Wildlife	Group	1, 2											
	Observations	1, 2											
Comments	General comments	1, 2											
Total errors	**		1	1	1	1	3	2	1	2	2	1	15

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: March 19, 2002

FORM 3c

CONSISTENCY CHECK: STREAM CARDS, FDIS, PROJECT, INTERPRETIVE MAPS – PAGE 3 OF 4

	11	12	13	14	15	16	17	18	19	20
Site #	109	119	135	146	150	155	164	178	186	189
Mapsheet #	93K003	93K003	93K013	93K002	93K002	93K051	93K042	93K041	93K041	93K041
ILP/WSC#	3016	6034	-3580- 5390	3580- 5640	-3580- 6060	480- 927700	927700- 78100	41027		927700- 91300
NID	3109	3119	3135	3146	3150	3155	3164	3178	3186	3189

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	11	12	13	14	15	16	17	18	19	20	Error locations
Header	Stream name	1, 2, 3, 4											
	Watershed code or ILP map # and ILP #	1, 2, 3, 4	1				X	X			X		WSC on maps wrong
	NID map # and NID #	1, 2								1277778			
	Reach #	1, 2, 3, 4				X							Absent on maps
	Site #	1, 2, 3, 4	X	X	X	X	X	X	X	X	X	X	See note
	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											0
	Fish form completed	1, 2											
Channel	Channel width	1, 2, 3, 4											
	Wetted width	1, 2											
	Residual pool depth	1, 2											Ų.
	Site gradient	1, 2, 3											
	Reach gradient	2, 3, 4											
	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			X			X					Site vs FDIS
	Functional LWD (amount, distribution)	1, 2											
	Crown closure	1, 2											
	Instream vegetation	1, 2						,					
	Bank shape, texture, riparian vegetation	1, 2											

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: March 19, 2002

FORM 3c

CONTINUED - PAGE 4 OF 4

Card section	Attribute	Where to check	1	1 2	3	4	1 5	6	7	1 8	9	20	Error locations
Water	EMS#	1, 2	Г									37-11F-	
	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											
	Morphology	1, 2, 3											
	Disturbance indicators	1, 2, 3	Г										
	Pattern	2, 3	Г										
	Islands, bars, coupling	1, 2											
	Confinement	2, 3											
Features	NID map # and NID #	1, 2											
	Type, height/length	1, 2, 3, 4				П							
	Photo, comments	1, 2											
	UTM	1, 2				X	X						Not in FDIS
Habitat	General comments	1, 2											
quality	Fisheries sensitive zones	1, 2, 3, 4											
Photo-	Roll#	1, 2											
documen- tation	Frame #	1, 2											
tauon	Focal length	1, 2											
	Direction	1, 2											
	Comments	1, 2											
Wildlife	Group	1, 2		Г									
	Observations	1, 2											
Comments	General comments	1, 2											
Total errors	:		1	1	2	3	3	3	1	1	2	1	18+15=33

Summary of stream site information check:

Number of marks (# cards * 52): 1040

Maximum number of errors acceptable (5%): 52

Number of errors found: 33

Is the number of errors acceptable:

Yes

Comments:

On Interp. maps, the SDS and RDS are both turned on so that data appears twice for each site, also the site number is not turned on next to the site symbol, as per standards. This accounts for the site number errors.

Site 28 - UTMs don't match between site cards and FDIS

Site 146 – reach breaks on maps do not match those on cards (Sites 146, 147) The info. on the data symbol for site 147 on maps belongs to site 146.

Site 63 - has two WSCs on maps. Sites 155, 186 - have no WSCs on maps.

Site 82 - card gradients say 4% -maps say 6%.

Sites 54, 55 - No RSS on Interpretive map (is site 54 on an unmapped channel?) Need to clarify.

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: March 19, 2002

FORM 3E

CONSISTENCY CHECK: FISH COLLECTION FORM, FDIS, PROJECT MAP, INTERPRETIVE MAP, LAKE OUTLINE MAP – PAGE 1 OF 4

	1	2	3	4	5	6	7	8	9	10
Site #	5	12	23	41	63	73	91	96	115	133
Mapsheet #.	93K015	93K014	93K014	93K015	93K013	93K023	93K023	93K003	93K003	93K003
ILP/WSC 180-374000- 95200	15005	01900- 2720-3880	-01900- 4090-0920	-01900- 4090-3240	01900- 6160	23027	22001	-01900- 3580-4040	3020	-01900- 3580-5390
NID#	3005	3012	3023	3041	3063	3073	3091	3096	3115	3133

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										0	
	Stream/Lake/Wetland	1, 2, 3											
	Watershed code or ILP	1, 2, 3, 4, 5					X						Maps mislabeled
	Waterbody ID	1, 2, 3, 4, 5											
	ILP map #	1, 2							X				
	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	X	X	X	X	X	X	X	X	X	X	See note
	NID map #, NID #	1, 2											
	Site UTM	1, 2											
	Method, method no.	1, 2											
	Temp, turbidity	1, 2											
	Conductivity	1, 2											
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	T										

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: March 19, 2002

FORM 3E

CONTINUED - PAGE 2 OF 4

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											
	Date, time in/out	1, 2											
	Net type, 1gth, dpth	1, 2											
	Mesh size	1, 2											
	Set, habitat	1, 2											
Electrofisher	Method, method no.	1, 2											
specifications	Pass	1, 2									0		II.
	Time in, time out	1, 2											
	EF sec.	1, 2	\top										
	Length, width	1, 2											
	Enclosure	1, 2	\top										
	Voltage, freq., pulse	1, 2	1										
	Make, model	1, 2											
	Totals:		1	1	1	1	2	1	2	1	1	1	12

Comments:

On Interp. maps, the SDS and RDS are both turned on so that data appears twice for each site, also the site number is not turned on next to the site symbol, as per standards. This accounts for the site number errors.

Site 63 – this stream has two WSC listed on system, see highlighter on maps.

Site 91 - Incorrect ILP map on Fish Collection Form

Site # - placement doesn't match legend for most sites, adjust legend.

Project name:

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FORM 3E

CONTINUED - PAGE 3 OF 4

	11	12	13	14	15	16	17	18	19	20
Site#	142	154	156	166	170	175	181	184	189	191
Mapsheet #.	93K013	93K041	93K051	93K041	93K041	93K041	93K041	93K051	93K041	93K051
ILP/WSC	13022	480- 927700	480- 927700	41009	41013	-85400- 48400	480- 927700- 90000	480- 927700- 90000	480- 927700- 91300	51009
NID#	3142	3154	3156	3166	3170	3175	3181	3184	3189	3191

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	1 2	3	1 4	5	6	7	1 8	9	20	Error locations
Header	Name	1, 2, 3, 4, 5		7									
	Stream/Lake/Wetland	1, 2, 3											
	Watershed code or ILP	1, 2, 3, 4, 5			X								
	Waterbody ID	1, 2, 3, 4, 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	X	X	X	X	X	X	X	X	X	X	See Note
	NID map #, NID #	1, 2											
	Site UTM	1, 2	\Box						11: 17				
	Method, method no.	1, 2											
	Temp, turbidity	1, 2											
	Conductivity	1, 2											
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											

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

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FORM 3E

CONTINUED - PAGE 4 OF 4

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											
	Date, time in/out	1, 2											
	Net type, 1gth, dpth	1, 2											1
	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											1
	Make, model	1, 2											
	Totals		1	1	2	1	1	1	1	1	1	1	11+12=23

Number of marks (# cards * 36): 720	Maximu	um number of err	ors acceptabl	le (5%): 36
Number of errors found: 23	Is the m	umber of errors a	cceptable:	Yes
Number of errors by location: Fish collecti	on form: _	FDIS:	Project r	map:
Interpretive	map:	Lake outline n	nap:	

Comments:

On Interp. maps, the SDS and RDS are both turned on so that data appears twice for each site, also the site number is not turned on next to the site symbol, as per standards. This accounts for the site number errors.

Site 156 – no wsc on maps

Site 184 – labeled as site 191 on both maps, no reach summary symbol located

Site 191 – not labeled on map.

Project name:

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QA review by:

Acer Resource Consulting Ltd.

Review date: March 19, 2002

FORM 3K WATERSHED REPORT - PAGE 1 OF 3: UPPER PINKUT

Report section	Attribute	Accept.	Notes	Report section	Attribute	Accept. (□/x)	Notes
Title page	Proper title			Introduction			
	Watershed code below title			Project scope, objectives	1:20 000, 1:5000, lakes, etc.		
	Prepared for			Location	Description		
	Prepared by			Overview map	8.5 × 11" or 11 × 17"		
	Signature of R.P.Bio				Outline of entire study area		
Reference information	Project reference information				Inset map showing relation to BC		
	Watershed information				Sample site locations		
	Sampling design summary				1:20 000 map grid		
	Contractor information				Major communities/roads		
Disclaimer	Standard wording disclaimer				TRIM/FC aquatic features		
Acknowledgements				Access	Description		
Table of contents	Page numbering correct			Resource Information	First Nations		
	Report outline follows standard				Land use, logging, recreation, etc.		
Lists	List of Tables				Impacts and uses by wildlife		
	List of Figures				Existing water quality data	N/A	
	List of Attachments				Previous fish presence (and ref.)		
	List of Appendices			Methods	Reference to RECCE standards		
		1			Reference to project plan		
					Deviations from RECCE standards	0	
					Deviations from project plan		
					List of sampling equipment used		

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

Review date: March 19, 2002

FORM 3K CONTINUED - PAGE 2 OF 3: UPPER PINKUT

Report section	Attribute	Accept.	Notes	Report section	Attribute	Accept.	Notes
Results and Discussion				Significant features and	Fish and fish habitat		
Logistics	Problems encountered (e.g.,				Critical habitats		
208.000	weather, access, water levels)				Special populations (rare, etc.)		
	How were problems addressed?				Wild stocks		
	How were results affected?				High value sport fishing		
Summary of sub-basin biophysical information	Table of information defining each sub-drainage	N/A			NO management recommendations		
(optional)					Habitat protection concerns		
Habitat and fish	Characteristics of fish habitats				Fisheries sensitive zones		
distribution	Pattern of fish distribution				Fish above 20% gradients		
	Location of significant fish populations				Restoration opportunities		
	Lakes treated as a reach of the		-		Problem culverts	N/A	None?
	stream				Unstable slopes	N/A	
	Upstream limits of species		-	Fish bearing status	Brief narrative section		
	presence				Table: Summary of fish bearing reaches		
	Obstructions that influenced fish			T' 11 - '	Table: Summary of non-fish		
	presence			Fish bearing status (cont.)	bearing reaches		
	Table of all barriers present		ļ	(cont.)	Table: Follow-up sampling		1
Fish age, size and life history	Summary of life stages, life history, etc.				required		
and the second of the fact of the second of	Length-frequency histograms			References	All sources in report listed		
	Table: Summary of length-atage	X	Add age classes	· 	According to CBE style manual		
	Data presented by species						
	Data presented by sub-drainage						
	Age classes appear correct	UNK		5			

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

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Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd.

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FORM 3K

CONTINUED - PAGE 3 OF OF 3: UPPER PINKUT

Stream Report Appendices

Report section	Attribute	Accept. (□/x)	Notes
Appendix I.	In ascending order by WSC		By site
FDIS summary and	Grouped by site		
photographs	FDIS reach card printouts		
	FDIS site card printouts		
	Fish data collection form		
	Photos (min. 1, max. 4)		
	All photos entered in FDIS		
	Explanatory photo captions		
	Photos in colour (final only)		

Comments: Overall a thorough and comprehensive report, minor edits and suggestions are indicated in the draft.

CONTINUED - APPENDICES

Report section	Attribute	Accept.	Notes
Appendix II.	"E" size plots		
Hardcopy maps –	Folded in pocket in report	For final	
Fisheries project map	UTM projection		
	1:20 000 map grid		
	1:20 000 scale		
	Complete title box		
	Complete legend box		
	Source information box		
	Inset map box		
	Fish species box		
	Contour lines (thinned as approp.)		
	Disclaimer		
	Lake and stream annotation		
Appendix II. Hardcopy maps –	WSCs or ILPs for all sampled streams	X	Some missing
Fisheries project map (cont.)	WSCs or ILPs for all 3 rd order or higher streams		
	WSCs or ILPs for every other 1st and 2nd order stream		
	WBIDs for all lakes		
	Sample site locations/numbers		
	All site data symbols attached to sites		
	Lake summary symbols		
	Reach data symbols on all reaches <30% gradient and all reaches containing sites	0	
	Features, obstructions and symbols		
	Reach breaks and numbers		

FORM 3K

CONTINUED - APPENDICES

Stream Report Appendices

Report section	Attribute	Accept. (□/x)	Notes
Appendix II.	"E" size plots		
Hardcopy maps –	Folded in pocket in report		
Fisheries interpretive map	UTM projection		
шар	1:20 000 map grid		
	1:20 000 scale		
	Complete title box		
	Complete legend box		
	Source information box		
	Inset map box		
	Fish species box	0	
	Contour lines (thinned as approp.)		
	Disclaimer		
	Lake and stream annotation		
	WSCs or ILPs for all sampled streams	X	Some missing
	WSCs or ILPs for all 3 rd order or higher streams		
	WSCs or ILPs for every other 1st and 2nd order stream		
	WBIDs for all lakes	0	
	Sample site locations/mumbers	X	See note
	Reach breaks and numbers		
	Reach summary symbols for all reaches in the project area	Х	See note

Report section	Attribute	Accept. (□/x)	Notes
Appendix II. Hardcopy maps –	Features, obstructions and symbols (optional)		
Fisheries interpretive	Fisheries sensitive zones		
map (cont.)	Fish distribution limits		
	Red/blue, solid/dashed lines to illustrate fish stream class (optional)		
	Roads/communities (optional)		

Notes:

As noted in consistency section, interpretive maps show RSS and SDS, with no site numbers adjacent to symbol. These layers need to be turned off and on respectively for final plots. Otherwise, the maps and data are consistent and acceptable.



CONTINUED - ATTACHMENTS

Stream Report Attachments

Report section	Attribute	Accept (□/x)	Notes	Report section	Attribute	Accept. (□/x)	Notes
Attachment I.	Budget breakdown by phase		To be	Attachment V.	Negative #s match digital	0	
Planning document	Project sampling design		sub-	Photodocumentation	Prints in plastic sleeves		
	Process of site selection		mitted with	(cont.)	Prints labelled	N/A	
	Reach table		final Attachment VI.	Budget breakdown by phase			
	Lake table			Digital data	Project sampling design		
	Random sample table				References, contacts list		
	References, contacts list				Table of vouchers collected	N/A	
Attachment II.	Field book or facsimile				Table of DNA collected	N/A	
Field notes	Site cards				Photo summary report		
	Fish collection forms				Report tables, figures		
	Individual fish data forms				Report text		
	Field working maps				FDISDAT.MDB		
Attachment III.	Actual ageing structures	N/A			Mapping files (plot files)	To be inc	
Fish ageing structures	Labelled photocopies	N/A			Mapping files (metadata and map features files)	with fina	l
	Annuli identified with red	N/A		Attachment VII.	FISS data forms and maps		
	Age data are correct	N/A		FISS update data	Copies of reference material		
Attachment IV. Voucher, DNA samples	Table: Vouchers collected	N/A			Data on forms match FDIS		
	Table: DNA collected	N/A		Attachment VIII.	Purchased aerial photos	N/A	-
Attachment V. Photodocumentation	Table: Photo summary report			Aerial photography	Aerial video tape	N/A	1
Photodocumentation	Colour thumbnail reference	0			Actiai video tape	11/21	
	Photo CD						
	CD Image #s match digital						
	Negatives in plastic sleeves						
	Negatives labelled						

Project name: Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437 MELP project number: BFP-C016-001-2002

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QA review by: Acer Resource Consulting Ltd. Review date: March 19, 2002

FORM 3L

FISH IDENTIFICATION AND AGING-PAGE 1 OF 1

Fish Identification

	Y/N	Comments
Voucher requirements described in project plan met?	Y	
Evidence of: • voucher samples collected	N/A	
problem fish as necessary	N/A	
results of expert Ids	N/A	No identification issues
Final fish identifications incorporated: • FDIS	N/A	
• reports	N/A	
• maps	N/A	

Fish Aging

	Y/N	Comments
Fish aging QA requirements described in project plan met?	N/A	No ageing structures collected
Evidence of:		
 aging QA 		
Final fish ages incorporated:		
• FDIS		
• reports		
• maps		

Project name:

Babine Forest Products Fish and Fish Habitat Inventory

FRBC project number: 10437

MELP project number: BFP-C016-001-2002

Submitted by:

FINS Consulting Ltd. Terrace, BC

QA review by:

Acer Resource Consulting Ltd._

Review date: March 19, 2002

Notes