FC PERMIT # 392790K

Reconnaissance (1:20,000) Fish and Fish Habitat Inventory Resampling in the Pendleton Sub-unit 2003/04

Addendum to:

Subdrainages in the Babine Lake Watershed - 1998

WSC: 480-****

Prepared for:

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March 31, 2004

Project Reference Information

FIA Investment Schedule #	NOTSA142240
MSRM Project Number	BFP-C016-001-2004
FIA Project Number	2240002
FDIS Project Code	9842
FDIS Project WSC	480-******
FIA Region	Smithers Region
MSRM Region	06 - Skeena
FW Management Unit	6-6
DFO Sub-District	4D
Forest Region	Prince Rupert
Forest District	Nadina Forest District
Forest Licensee and Tenure #	Babine Forest Products Company Forest License A-16823
First Nations Claim Area	Carrier-Sekani

Watershed Information

Watershed Group	BABL (Babine Lake)
Watershed Name	Small Tributaries to Babine Lake (Pendleton Sub-unit Area)
Watershed Code	480-******
UTM at Mouth	Varied
Watershed Area (km^2)	128.3
Total of all Stream Lengths (km)	136.0
Stream Order	Varied
NTS Maps	93 K/5, 93K/12
TRIM Maps	093K.041, 093K.042, 093K.051, 093K.052, 093K.061
BEC Zone	SBS (Sub-Boreal Spruce)
Fish Species Present	CAS, CO, RB
Air Photos	30BCB90065:124-132, 182-190, 266-277 30BCC96049: 41-46, 80-86 30BCC96154: 166-169

Sampling Design Summary

Total Number of Reaches	203
Random Sample Reaches	0
Discretionary Sample Reaches	30
Total Sample Reaches	30
% of Reaches Sampled	14.6
Field Sampling Dates	July 16 – Aug 12, 2003

Contractor Information

Project Manager:	Melissa Todd, R.P.Bio., Babine Forest Products Box 4000, Burns Lake, B.C. V0J 1E0 (250) 692-7177
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Field crew: **Data Entry by:** **Report prepared by:** **Report edited by:**	S. Redden, M. Jedrzejczyk M. Jedrzejczyk M. Jedrzejczyk S. Redden
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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, and is subject to review by a statutory decision maker for the purposes of determining whether to approve an operational plan.

Acknowledgments

Funding for this project was made available by the Forest Investment Account, a new provincial government mechanism for promoting sustainable forest management in British Columbia. FINS would also like to thank Karen Grainger, Richard Vossen and Melissa Todd of Babine Forest Products for their assistance through all phases of the project.

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- Photo CD's
- Negatives in Plastic Sleeves

Attachment III **Digital Data**

- Watershed Report Files (Helene, Pendleton, Shovel + Reach/Site Summary pdf's for each)
- FDIS Files (Current Inventory + Historic (1998, 1999 and 2001 project FDIS files)
- Mapping Files (Meta-data + Map Features table, Interpretive and Overview plots (pdf)

1. Introduction

1.1 Project Scope and Objectives

The objective of this project was to conduct resampling on streams within the Pendleton Sub-unit to provide a complete summary of fish distribution in the area. Resampling was conducted to supplement and augment the information collected during a past Reconnaissance inventory completed in the area in 1998. It was generally gathered to provide Babine Forest Products Company (BFP) with site-specific fisheries information to be used to aid in forest development planning and activities. Most of this fisheries information was collected either to fill information gaps and improve fish distribution information or to confirm previously proposed Forest Practices Code (FPC) stream classifications. All results for this report incorporate any previous field sampling that may have been conducted on the streams. This is a continuation of a multi-year FRBC project commenced in 1996 for BFP.

1.2 Location

The surveyed drainages are located in the southern section of the Babine Lake watershed within the Nadina Forest District, approximately 35km north of the Village of Burns Lake. All streams are within the Babine Lake (BABL) high-level watershed group. The project overview map (Figure 1) on the following page provides the general location of the study area.

1.3 Access

The predominant modes of access to reaches within the study area watersheds were vehicle and boat. Boat access from Babine Lake was required in the lower reaches of a few of the streams within the Pendleton sub-unit. Remaining streams were accessed by vehicle from the Village of Burns Lake, B.C., via the Old Babine, Augier, Pendleton Bay and Sag roads, and various cutblock spur roads.

2. Resource Information

Resource use within the area is dominated by forest management for timber extraction in BFP's operating area and recreational activities, with resorts located along the shore of Babine Lake. To a smaller extent, the area is also used for guided and unguided hunting for big game. The project area is located within Carrier-Sekani and Wet'suwet'en land. No significant wildlife use or impacts were noted within this area.

An abundance of fisheries information has been collected and presented under the scope of reconnaissance inventories completed in 1996 and 1998 (Jedrzejczyk and Redden, 1997 and FINS, 1998), in addition to various operational inventories (FINS, 2000.). This information has been compiled and utilized for the interpretive mapping for this project and when applicable, used to provide rationale for fish-bearing status and stream classifications. Table 1 below summarizes historical information regarding fish presence and sampling results within the project area. This information is also displayed on the interpretive maps for this project.

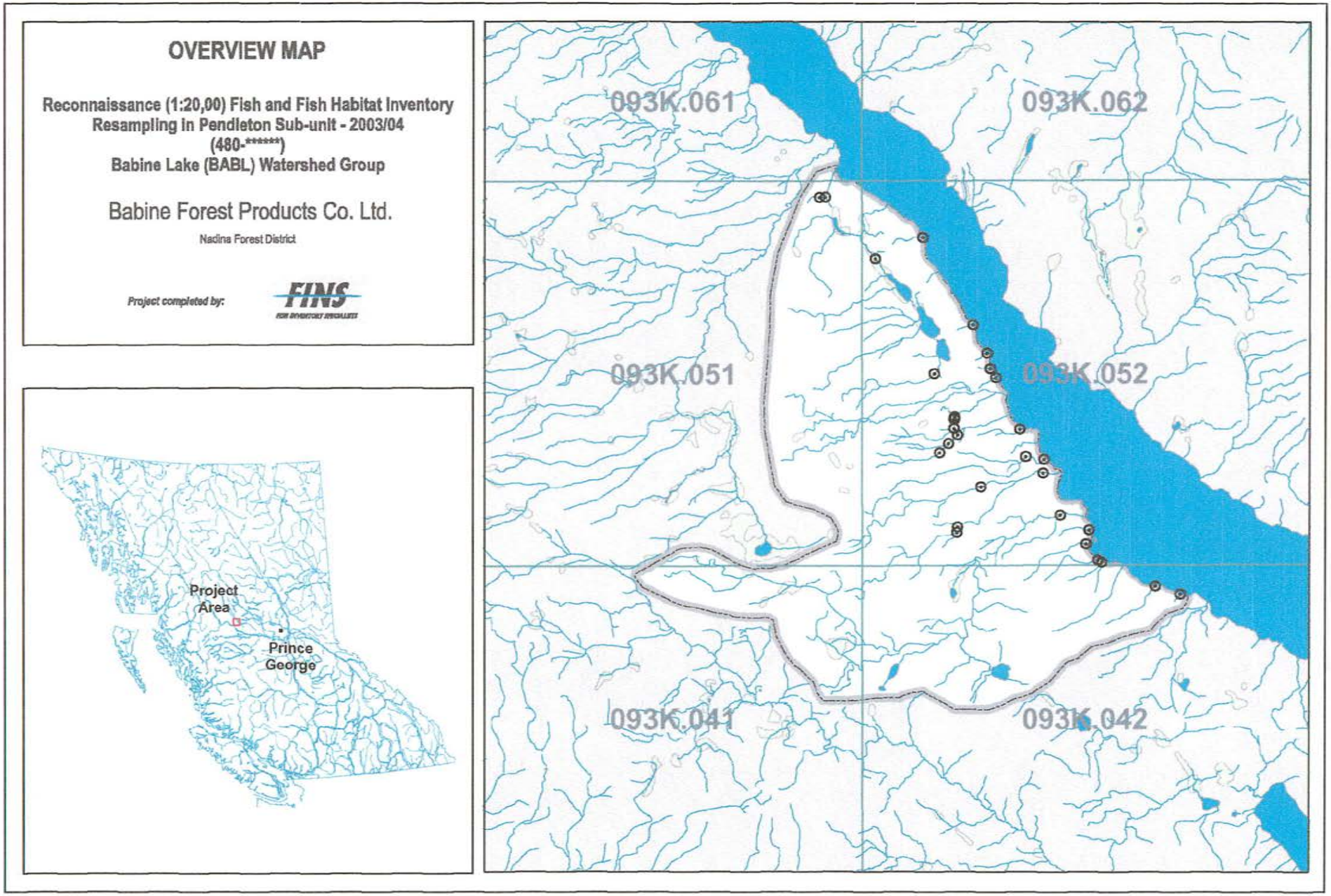

Figure 1: Project Area Overview Map.

Table 1: Historical information on fish presence in the Pendleton Sub-unit Area.

Stream ID/ ILP	Watershed Code	Reach	Historic Site #	Fish Species/ Sampling Results	Source/Comments
Cross C.	480-863300	9.0	1	LKC	Jedrzejczyk and Redden, 1997 (FFHI)
Cross C.	480-863300	10.0	2	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
Cross C.	480-863300	11.0	3	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
Cross C.	480-863300	12.0	4	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
CC2	480-863300-*****	1.0	1	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
CC2	480-863300-*****	2.0	2	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
CC4	480-863300-*****	1.0	1	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
Pacman C.	480-863300-40300	1.0	1	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
Pacman C.	480-863300-40300	2.0	2	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
Pacman C.	480-863300-40300	3.0	3	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
CC3	480-863300-46100	1.0	1	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
CC5	480-863300-55600	1.0	1	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
CC6	480-863300-61000	1.0	1	NFC	Jedrzejczyk and Redden, 1997 (FFHI)
	480-818600	1.0	227	CAS CO	FINS. 1998 (FFHI).
	480-818600	2.0	228	RB	FINS. 1998 (FFHI).
Sag C.	480-825200	1.1	229	CO RB	FINS. 1998 (FFHI).
Sag C.	480-825200	2.0	230	NFC	FINS. 1998 (FFHI).
52509	480-836984	1.0	231	NS	FINS. 1998 (FFHI).
	480-849100	1.0	232	CAS CO RB	FINS. 1998 (FFHI).
	480-849100	1.1	233	RB	FINS. 1998 (FFHI).
	480-849100	2.0	302	NFC	FINS. 1998 (FFHI).
	480-849100-03600	1.0	234	RB	FINS. 1998 (FFHI).
	480-849100-03600	2.0	235	RB	FINS. 1998 (FFHI).
	480-851000	1.0	236	NFC	FINS. 1998 (FFHI).
	480-855200	1.0	237	NFC	FINS. 1998 (FFHI).
	480-856600	1.0	238	NFC	FINS. 1998 (FFHI).
	480-858600	1.0	239	NFC(RB)	FINS. 1998 (FFHI).
	480-858600	2.0	240	NFC (RB)	FINS. 1998 (FFHI).
	480-858600-15000	1.0	241	NFC	FINS. 1998 (FFHI).
Cross C.	480-863300	2.0	242	CO RB SK	FINS. 1998 (FFHI).
Cross C.	480-863300	2.1	243	RB	FINS. 1998 (FFHI).
Cross C.	480-863300	4.0	244	NFC	FINS. 1998 (FFHI).
52539	480-871369	1.0	245	NS	FINS. 1998 (FFHI).
Sag C.	480-825200	4.0	78	LKC LNC	FINS. 2000

3. Methods

Planning for this project entailed compiling existing information and identifying "information gaps", with the intent being to fill in the gaps with additional sampling information that would supplement and/or solidify all FPC stream classifications. This incorporated any follow-up sampling recommendations made in the Reconnaissance Inventory report and past operational inventory results. All other aspects of the pre-field phases were conducted as part of the original

Reconnaissance Inventory. Sampling to determine upper extents of fish use followed the methodology as outlined in that project planning document.

FDIS data for this project has been consolidated into one FDIS database, which incorporates existing FDIS data from past inventories. Historic site data is not included in the FDIS database, but has included with the digital deliverables for this project. Summarized historic site information has been provided on the interpretive maps for this project.

3.1 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:

$$H=Ho\ (\text{gradient}\ (\%)\ \text{to top of falls})/(\text{gradient}\ (\%)\ \text{to bottom of falls}) + Ho$$

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:

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

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 photo documentation indices.

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. Photo documentation 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 II. An interpretive map has also been produced and is included in Appendix III.

Field Equipment
All sampling equipment specifications are listed below:
- Smith-Root model 12B P.O.W. Backpack Electrofisher
- 50 Gee-type minnow traps
- Garmin 12 handheld GPS unit
- 2 Oakton pHTestr2 pH meters (with pH 7 & 10 buffer solutions)
- 2 Oakton TDSTestr3 conductivity meters (with 1413µS/cm solution)
- Abney Levels, alcohol thermometers, Silva compasses
- Pentax Zoom 90WR cameras
- assorted other equipment including tight chains, hip chains, dip nets, fishing rods, magnifying lenses, meter sticks, meter tapes
- 4X4 truck equipped with Level 1 First Aid kits and 4 personal First Aid kits, as per WCB requirements
- 12'6" inflatable Quicksilver boat with Mariner 20 HP jet motor

4. Results and Discussion

The following sections present fish and fish habitat information for the project area as identified earlier in this report. Summarized information for all 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.

4.1 Logistics

No logistical problems were encountered throughout the course of the field sampling portion of this project.

4.2 Fish and Fish Habitat Information

4.2.1 Physical Barriers

Several physical obstructions to fish migration that influenced fish distribution in the project area were identified. Although some are permanent barriers that mark the upper extent of fish use, few are temporary or "soft" barriers that may influence upstream fish use but cannot be used to justify a non fish-bearing FPC classification.

All obstructions are summarized in Table 2 below. Historic barriers and their source information are also included in this table.

Table 2: Summary of historic and new barriers to fish migration found in the Pendleton Sub-unit.

Watershed Code/ILP	TRIM Map	Reach	Site	TYPE	Height (m)	Length (m)	Verified in Field?	Comments
480-825200	093K.052	1.1	229	Cascade	3	10	Y	**Historic**. Blocks anadromous fish passage and marks upper fish distribution limit for anadromous species (FINS, 1998). Located 0.39km u/s from Babine L.
480-825200	093K.052	1.1	229	Falls	6		Y	**Historic**. Blocks all fish passage and marks upper fish distribution limit for FPC species. (FINS1998). Located 049km u/s from Babine L.
480-849100	093K.052	1.1	233	Bedrock Chute	3	10	Y	**Historic**. Blocks all fish passage and marks upper fish distribution limit for FPC species. (FINS1998). Located 044km u/s from Babine L.
480-849100-036	093K.052	4	109	Subsurface Flow		100	Y	Blocks all fish passage and marks upper fish distribution limit for FPC species. Located 1.72km u/s from mouth.
480-851000	093K.052	4	105	Severe Dewatering		>100	Y	Blocks all fish passage and marks upper fish distribution limit for FPC species. Located 1.3km u/s from confluence with -849100-036.
480-858600	093K.052	1	239	Beaver Dam	2		Y	**Historic.** Temporarily blocks all fish passage. (FINS 1998). Located 10m from Babine L.
480-858600	093K.052	6	115	Falls	3		Y	Blocks all fish passage and marks upper fish distribution limit for FPC species. Located 3.92km u/s from Babine L.
480-863300	093K.052	2.1	243	Falls	9		Y	**Historic**. Blocks all fish passage and marks upper fish distribution limit for FPC species. (FINS1998). Located 1.48km u/s from Babine L.
480-873625	093K.042	1	123	Subsurface Flow		5	Y	Blocks all fish passage and marks upper fish distribution limit for FPC species. Located 67m u/s from Babine L.

4.2.2 Fish Presence and Distribution

Tributaries in this area cross a lacustrine terrace surrounding Babine Lake and generally descend to the lake down steep slopes. This geomorphology, combined with seasonal low Babine Lake water levels, constrains fish use and distribution within all lake tributaries. Most of the 1st and 2nd order streams were absorbed within the terrace or its slopes. The 3rd order and larger drainages frequently exhibited severe seasonal dewatering limiting fish use, and/or their accessible lengths were inhibited by the presence of permanent physical obstructions.

A total of 30 reaches were sampled in the project area during this inventory, supplementing the 13 and 20 original sample sites completed in the 1996 and 1998 inventories, respectively, in addition to one site completed during a 1999 operational inventory. Fish species found during this inventory include prickly sculpin (CAS), coho salmon (CO) and rainbow trout (RB).

Rainbow trout were found in only four drainages, all in reaches adjacent to those already known to be inhabited by this species. These include unnamed stream 480-85100 (affluent to 480-849100 – see section 4.3.2.) and its tributary 480-849100-03600, stream 480-856600, and stream 480-858600. Rainbow trout presence in these streams confirms findings from previous inventories that this specie is found in abundance within reaches containing diverse perennial habitat proximal to the lake. Incidental rainbow trout use also occurs within short sections of usable and accessible habitat near the confluence with known fish-bearing water. The use of perennial habitat by rainbow trout beyond approximately 1km from the lake is very scarce. Fish presence was assumed in other reaches, containing accessible fish habitat until either the habitat completely deteriorated, or a permanent obstruction blocked further fish passage.

Coho salmon were only found in the first reach of stream 480-858600 and its presence substantiates findings from previous inventories that this specie only utilizes accessible perennial habitat near Babine Lake.

Prickly sculpin were found in reach 1 of stream 480-856600 within seasonal habitat. It is expected that this specie is present within proximal reaches to Babine Lake in all tributaries where accessible habitat is available.

Out of 30 surveyed reaches, 26 reaches were confirmed to be non fish-bearing. Of these, 13 were determined to be non classified drainages (NCD's) and the remaining 13 had fish absence confirmed, either as a result of the lack of sufficient habitat or due to permanent fish barriers.

4.2.3 Habitat

The results of this inventory were consistent with findings from past surveys in this area in that diverse, perennial habitat is generally available only within the first reaches of 3rd order and larger tributaries to Babine Lake. In some of the 2nd order tributaries, accessible and usable seasonal rearing habitat was present near the mouth, while the 1st order systems were uninhabitable.

The presence of good spawning habitat in the perennial stream -849100-03600 in reach 3, good rearing habitat in reach 3.1 of the stream 480-851000 and excellent and diverse perennial habitat

in reach 5 of drainage 480-858600. These are the only notable exceptions to the above generalizations.

4.2.4 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.

Insufficient numbers of coho salmon, rainbow trout and prickly sculpin were sampled within this area to provide any meaningful interpretation of fish stage, size and life history for these species.

Juvenile coho salmon were caught in reach 1 of tributary 480-858600 upstream from a beaver dam obstruction (identified in 1998 inventory) which has been breached in recent years. This reach has excellent perennial coho and rainbow trout habitat but no fish were captured above the obstruction during the 1998 sampling. However, the present coho occurrence may suggest a reinstatement of an anadromous population in this drainage.

The scarce numbers of rainbow trout (only age classes 1+ and 2+ were present) in reaches 3 and 3.1 of streams -849100-03600 and 480-85100, respectively, indicates only incidental use of the available rearing habitat by the small fluvial population from the parent stream 480-849100 or by the resident population from Babine Lake. The presence of rainbow trout in streams 480-856600 and 480-858600 indicates that the Babine Lake resident fish uses those drainages only seasonally as there were no fish captured in the past.

Prickly sculpin were found in stream 480-856600 in reach 1. It is expected that both fluvial and resident populations of this species may inhabit proximal reaches to Babine Lake in all tributaries where accessible habitat is available.

The following table presents data for fish species encountered in this watershed. The CPUE column in the table indicates the number of fish captured in 1000 seconds of electrofishing. This data is extracted only from those reaches where the species were sampled.

Table 3: Summary of life stage, length and CPUE data from fish sampled within the Pendleton Sub-unit.

Stream Name	Watershed Code	Spp.	Stage	Number of Fish	Mean Length (mm)	Range of Lengths (mm)	CPUE (# of fish/1000 sec electrofishing)
	480-******	CAS	J	1	64	64	6
		CO	J	1	77	77	7
		RB	J	6	64.2	51-82	7

4.3 Significant Features and Fisheries Observations

4.3.1 Fish and Fish Habitat

The beaver dam identified in the 1998 inventory at the mouth of stream 480-858600 has been breached in recent years. Coho salmon along with rainbow trout were sampled in this previously uninhabited drainage. This opened access to significant diverse and perennial habitat and will likely result in their permanent establishment, both in this stream and in accessible tributary reaches upstream.

4.3.2 TRIM Base Map Anomaly

An important TRIM base map anomaly was found during the field portion of this project. The stream 480-851000 from the point at UTM coordinates 10.321612.6046423 flows north and joins stream 480-849100-03600 at UTM coordinates 10.321560.6046910 (Appendix III - map 093K.052). This drainage is inhabited by rainbow trout and has received an FPC classification of S3 for 1.3km before becoming non fish-bearing.

Currently the TRIM base notes stream 480-851000 flows due east to Babine Lake from UTM coordinates 10.321612.6046423.

4.3.3 Habitat Protection Concerns

4.3.3.1 Fisheries Sensitive Zones

No fisheries sensitive zones were identified in this inventory.

4.3.3.2 Fish Above 20% Gradients

No fish were captured within gradients greater than 20% and no isolated fish population were found above barriers to fish migration in this inventory.

4.3.3.3 Restoration and Rehabilitation Opportunities

No restoration or rehabilitation opportunities were identified in this inventory.

4.4 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 2 on the following page.

4.4.1 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" section of this report.

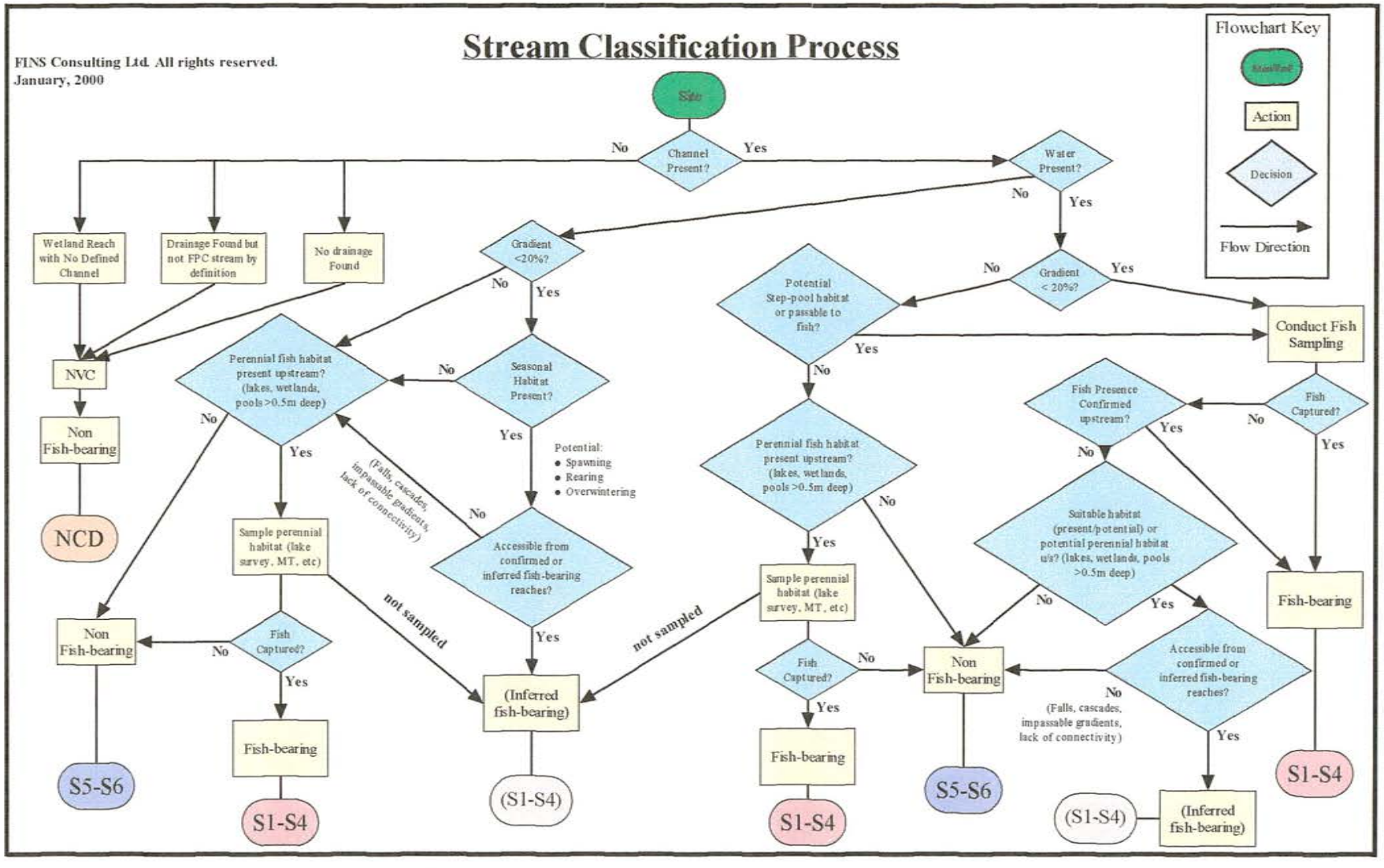

Figure 2: Flowchart of the stream classification process used in determining fish-bearing status of surveyed reaches

Table 4: Summary of data from all surveyed reaches in the Pendleton Sub-unit.

Stream Name	Watershed Code	ILP	Reach	Site	Species	Avg CW (m)	Avg Grad (%)	Proposed FPC Class	Follow-up Sampling?	Comments
	480-818600		3	95	NFC	1.36	6.00	S6	N	Confirmed non fish-bearing.
	480-818600-91997	51500	1	96	NS	NA	28.00	NCD	N	Confirmed non fish-bearing.
Sag C.	480-825200		7	97	NFC	4.50	0.50	S5	N	Confirmed non fish-bearing.
Sag C.	480-825200		14	98	NFC	1.85	5.00	S6	N	Confirmed non fish-bearing.
	480-830238	52508	1	99	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-842938	52510	1	100	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-847187	52511	1	101	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-847907	52512	1	102	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-848269	52513	1	103	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-851000		3.1	104	RB	1.90	2.75	S3	N	Confirmed fish-bearing.
	480-851000		4	105	NS	1.52	5.25	S6	N	Confirmed non fish-bearing.
	480-849100-03600-55387	52514	1	106	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-849100-03600-59045	52515	1	107	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-849100-03600		3	108	RB	1.15	3.25	S4	N	Confirmed fish-bearing.
	480-849100-03600		4	109	NFC	1.00	4.00	S6	N	Confirmed non fish-bearing.
	480-851000-98983-12711	52520	1	110	NFC	1.18	12.25	S6	N	Confirmed non fish-bearing.
	480-852091	52523	1	111	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-856600		1	112	CAS RB	1.95	3.25	S3	N	Confirmed fish-bearing.
	480-856600		2	113	NS	1.88	6.00	S6	N	Confirmed non fish-bearing.
	480-858600		1	114	CO RB	2.92	2.75	S3	N	Confirmed fish-bearing.
	480-858600		6	115	NFC	1.73	5.75	S6	N	Confirmed non fish-bearing.
	480-858600-15000		2	116	NS	2.13	4.50	S6	N	Confirmed non fish-bearing.
	480-858600-44923	52527	1	117	NS	1.32	11.50	S6	N	Confirmed non fish-bearing.
	480-863300-14300		1	118	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-868855	52534	1	119	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-869799	52535	1	120	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-870326	52536	1	121	NS	NA	NA	NCD	N	Confirmed non fish-bearing.
	480-870717	52537	1	122	NFC	1.42	8.75	S6	N	Confirmed non fish-bearing.
	480-873625	42500	1	123	NFC	1.02	5.25	S6	N	Confirmed non fish-bearing.
	480-876893	42501	1	124	NFC	0.62	5.00	S6	N	Confirmed non fish-bearing.

4.4.2 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 in the area (Lakes/Nadina Forest District 1996 through 2003 Reconnaissance and Operational Inventories) have also been taken into consideration in this section. Table 5 below summarizes this categorized information.

Table 5: Fish sampling results for categorized reach classes (from 1996 through 2003 inventory data).

Reach Gradient Class	Reach Pattern Type	Reach Size Class								
		Small (1st order)			Medium (2nd and 3rd order)			Large (4th 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	428	14	3.27	836	222	26.56	138	105	76.09
(≤4%)	IM/ME/TM	57	4	7.02	159	40	25.16	36	19	52.78
2	ST/SI/IR	233	4	1.72	407	85	20.88	37	22	59.46
(>4% and ≤8%)	IM/ME/TM	0	0	0.00	3	1	33.33	1	0	0.00
3	ST/SI/IR	248	5	2.02	195	21	10.77	15	8	53.33
(>8% and ≤20%)	IM/ME/TM	0	0	0.00	0	0	0.00	0	0	0.00
4	ST/SI/IR	83	0	0.00	39	1	2.56	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	28	0	0.00	9	0	0.00	1	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 2 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, and 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 tributaries in the Pendleton Sub-unit.

Watershed Code/ILP	Reach	Site	Date	Average CW (m)	Average Gradient (%)	Average Wb Depth (m)	Expected FPC Spp.	FPC Class	Sampling Specifications						Stream Conditions				Categorized Historical Sampling Results (1996-2003 Data)				Comments
									Method	EF Distance (m)	EF Time	Voltage (V)	Frequency (Hz)	Pulse Width (µsec)	Flow Stage	Water Temp (°C)	Conductivity (µS/cm)	Turbidity	Gradient Group	Pattern Group	Order Group	Fish Capture (%)	
480-818600	3	95	12-Aug-03	1.4	6.0	0.27	RB	S6	EF	150	294	400	80	6	L	13	60	C	2	SSI	S	1.72	Confirmed non-fish bearing stream from reach 3. Marginal FPC stream in sections - frequently trickle over moss, but mainly channelized. Overall shallow and seasonal stream with algae-filled water. No overwintering, rearing or spawning habitat. NFC in upper reach 2 in 1998 FFHI.
480-818600-91997	1	96	12-Aug-03		28.0		RB	NCD											4	SSI	S	0.00	No fish habitat, passage or potential - drainage is a steep trickle over organics with no fluvium or continuous channel bed.
480-825200	7	97	11-Aug-03	4.5	0.5	0.67	RB	S5	EF	150	268	500	80	6	L	12	80	C	1	SSI	M	26.56	Confirmed sport fish absence in the system above falls at the start of reach 2. Overall not suitable salmonid habitat - shrubby wetland with stagnant water over organics with abundant ISV, good cyprinids habitat. Only LNC and LKC captured in 1999 FFHI above falls and NFC now and in 1998 FFHI.
480-825200	14	98	11-Aug-03	1.8	5.0	0.33	RB	S6	EF	150	313	400	80	6	L	12	210	C	2	SSI	M	20.88	Sampled to confirm FPC non-fish bearing status above falls. LKC and LNC caught below first lake during previous sampling and no RB present in system above falls. Overwintering habitat - poor - lacks sufficient deep pools. Rearing habitat - fair to moderate potential in occasional pools, but overall quite shallow. Spawning habitat - good potential - abundant suitable uniform gravels present. All habitat inaccessible to salmonids due to falls barrier. See comments above.
480-830238	1	99	16-Jul-03				RB	NCD											4	SSI	S	0.00	No fish habitat - no channel, no water - drainage is just an occasionally moist devil's club depression on valley wall.
480-842938	1	100	16-Jul-03				RB	NCD											3	SSI	S	2.02	No fish habitat or access, not an FPC stream - no continuous channel bed - disconnected moss puddles in devil's club.
480-847187	1	101	16-Jul-03				RB	NCD											3	SSI	S	2.02	No fish habitat, passage or potential. Occasionally flooded near mouth at high Babine Lake level. Drainage is just a seepage through devil's club down valley wall.
480-847907	1	102	16-Jul-03				RB	NCD											3	SSI	S	2.02	No fish habitat - drainage is just a steep seepage in depression lacking fluvium and continuous channel bed. No connection to Babine L., no water, no fisheries potential.

Table 6: Summary of data from surveyed non-fish bearing reaches in tributaries in the Pendleton Sub-unit.

Watershed Code/ILP	Reach	Site	Date	Average CW (m)	Average Gradient (%)	Average Wb Depth (m)	Expected FPC Spp.	FPC Class	Sampling Specifications						Stream Conditions				Categorized Historical Sampling Results (1996-2003 Data)				Comments
									Method	EF Distance (m)	EF Time	Voltage (V)	Frequency (Hz)	Pulse Width (µsec)	Flow Stage	Water Temp (°C)	Conductivity (µS/cm)	Turbidity	Gradient Group	Pattern Group	Order Group	Fish Capture (%)	
480-848269	1	103	16-Jul-03				RB	NCD											3	SSI	S	2.02	No fish habitat or potential - no channel or water present. Drainage just a slight gully seepage through devil's club with no continuous defined channel with occasional shallow wetted organic spots.
480-851000	4	105	10-Aug-03	1.5	5.3	0.23	RB	S6							L				2	SSI	M	20.88	Confirmed non-fish bearing stream from this point. Channel totally dry. Flow abruptly stops here, huge dewatering and water present only during scouring flows. Spring observed immediately d/s, which likely provides persistent flow, but u/s from spring there is no fish habitat or potential.
480-849100-03600-55387	1	106	10-Aug-03				RB	NCD											1	SSI	S	3.27	No fish habitat - seepage at mapped location, no channel, no water - not an FPC stream.
480-849100-03600-59045	1	107	10-Aug-03				RB	NCD											2	SSI	S	1.72	No fish habitat - no channel or water present, occasionally moist dip in terrain.
480-849100-03600	4	109	10-Aug-03	1.0	4.0	0.27	RB	S6	EF	100	216	400	80	6	L	9	210	C	1	SSI	M	26.56	No fish habitat due to underground flow (90%) and impassable FSB obstruction (100m long) at the start of the reach.
480-851000-98983-12711	1	110	10-Aug-03	1.2	12.3	0.10	RB	S6	EF	100	48	500	80	6	L	9	80	C	3	SSI	M	10.77	No fish habitat - moderately steep and extremely shallow stream with no pools and overall very poor instream cover. No suitable seasonal rearing, lacks spawning substrate and is too shallow for overwintering. NFC in parent stream below.
480-852091	1	111	16-Jul-03				RB	NCD											3	SSI	M	10.77	No fish habitat - gully seepage with no defined channel.
480-856600	2	113	11-Aug-03	1.9	6.0	0.43	RB	S6							L				2	SSI	M	20.88	No fish habitat - moderately steep seasonal stream with poor instream cover and fast scouring flow during high water, then stream dries quickly. No potential for seasonal fish use this far from Babine L.
480-858600	6	115	11-Aug-03	1.7	5.8	0.33	RB	S6	EF	150	388	600	80	6	L	12	40	C	2	SSI	M	20.88	Confirmed non-fish bearing stream from falls barrier. Potentially suitable rearing and overwintering habitat within deep pools and boulder cover is affected by extremely low flows. No spawning habitat observed. NFC in this reach as well in lower reaches during total of 1626 seconds of electrofishing and falls barrier at the start of reach 6 renders this section of stream barren of fish.

Table 6: Summary of data from surveyed non-fish bearing reaches in tributaries in the Pendleton Sub-unit.

Watershed Code/ILP	Reach	Site	Date	Average CW (m)	Average Gradient (%)	Average Wb Depth (m)	Expected FPC Spp.	FPC Class	Sampling Specifications						Stream Conditions				Categorized Historical Sampling Results (1996-2003 Data)				Comments
									Method	EF Distance (m)	EF Time	Voltage (V)	Frequency (Hz)	Pulse Width (µsec)	Flow Stage	Water Temp (°C)	Conductivity (µS/cm)	Turbidity	Gradient Group	Pattern Group	Order Group	Fish Capture (%)	
480-858600-15000	2	116	12-Aug-03	2.1	4.5	0.43	RB	S6							L				2	SSI	M	20.88	Confirmed non-fish bearing stream from reach 2. Channel bone dry, potential - none. No overwintering, spawning or seasonal rearing habitat present. No fish caught up to here, NFC in parent stream. Seasonally usable habitat in reach 1 gradually deteriorates away from mouth.
480-858600-44923	1	117	11-Aug-03	1.3	11.5	0.17	RB	S6							L				3	SSI	S	2.02	No fish habitat - small and seasonal stream with no instream cover when flows with increasing gradient. NFC in parent stream, no overwintering, rearing or spawning habitat.
480-863300-14300	1	118	12-Aug-03				RB	NCD											3	SSI	S	2.02	No fish habitat - dry gully seepage with occasionally channelized sections over organics, no connection to u/s reaches.
480-868855	1	119	16-Jul-03				RB	NCD											3	SSI	S	2.02	No fish habitat - drainage is a dry meltwater runoff with no fluvium or continuous channel bed.
480-869799	1	120	16-Jul-03				RB	NCD											2	SSI	S	1.72	No fish habitat - no water and no channel present - no connection to lake, evidence of water collection, flooded shrubs, but dry now.
480-870326	1	121	16-Jul-03				RB	NCD											3	SSI	S	2.02	No fish habitat - seepage within terrain depression with no continuous channel bed, fluvium or water.
480-870717	1	122	16-Jul-03	1.4	8.8	0.27	RB	S6	EF	100	78	500	80	6	L	11	90	C	3	SSI	M	10.77	Confirmed non-fish bearing stream. Shallow trickle with steadily rising gradient and no suitable instream cover for seasonal rearing, no spawning or overwintering habitat present.
480-873625	1	123	16-Jul-03	1.0	5.3	0.27	RB	S6	EF	100	264	500	80	6	L	11	80	C	2	SSI	S	1.72	Confirmed non-fish bearing stream from reach 1. Potentially usable habitat present for seasonal rearing, but inaccessible due to FSB obstruction d/s.
480-876893	1	124	16-Jul-03	0.6	5.0	0.10	RB	S6	EF	100	237	500	80	6	L	11	80	C	2	SSI	S	1.72	No fish habitat - a tiny, shallow trickle over organic substrate without potential for seasonal rearing, no spawning or overwintering habitat.

4.4.3 Follow-up Sampling Required

No follow-up sampling within sampled streams has been recommended for this project. All upper extents of confirmed or inferred fish use have been identified.

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MELP: Resource Analysis Branch. Aquatic Biophysical Maps - B.C. Min. of Environment, Victoria, B.C.

6. List of Abbreviations

Avg	Average	MT	Minnow trap
BD	Stream bed, beaver dam	MW	Mountain whitefish (*Prosopium williamsoni*)
BEC	Biogeoclimatic Ecosystem Classification	N	No
BFP	Babine Forest Products Company	NA	Not applicable
C	Clear (not turbid)	NCD	Not classified drainage
C.	Creek	NCD*	No drainage present at mapped location
CAS	Prickly sculpin (*Cottus asper*)	Neg	Film negative
CD	Compact disc	NFC	No fish captured
CH	Chinook salmon (*O. tshawytscha*)	NS	Not sampled
cm	Centimeter	NTS	National Topographic Survey
CO	Coho salmon (*O. kisutch*)	NVC	No visible channel
CPUE	Catch per unit effort	pH	Acidity or alkalinity measurement unit
CW	Channel width	R.	River
D	Downstream	RB	Rainbow trout (*O. mykiss*)
DFO	Department of Fisheries and Oceans	Rd	Road
d/s	Downstream	RIC	Resource Information Committee
EF	Electrofishing	RJA	RJA Consulting Ltd.
FDIS	Field Data Information System	RSC	Redside shiner (*Richardsonius balteatus*)
FFHI	Reconnaissance (1:20,000) Fish and Fish Habitat Inventory	RSS	Regionally significant species
FIA	Forest Investment Account	S	Small size stream
FINS	FINS Consulting Ltd.	sec	Seconds
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	Spp.	Species
FRIM	Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures (Version 1.1)	SSI	Straight, sinuous or irregular wandering channels
FW	Fish and Wildlife	STD	Standard
Grad	Slope gradient	ST/SI/IR	Straight, sinuous or irregular wandering channels
H	High flow	S1 - S6	Riparian classes
HP	Horsepower	T	Turbid
Hz	Hertz	Temp	Temperature
ID	Identifier	TDS	Total Dissolved Solids
ILP	Interim Locational Point	TRIM	Terrain Resource Information Management
IMT	Irregular meandering, meandering or tortuous meandering channels	U	Upstream
IM/ME/TM	Irregular meandering, meandering or tortuous meandering channels	u/s	Upstream
km	Kilometer	UTM	Universal Transverse Mercator coordinates
KO	Kokanee (*O. nerka*)	V	Volt
L	Low flow, lightly turbid or large size stream	Wb	Bankfull depth
L.	Lake	WCB	Workers Compensation Board
LKC	Lake chub (*Couesius plumbeus*)	WSC	Watershed code
LNC	Longnose dace (*Rhinichthys cataractae*)	X	Across
LSU	Longnose sucker (*Catostomus catostomus*)	Y	Yes
m	Meter	µsec	Microseconds
M	Moderate flow, moderate turbid or medium size stream	µS	Microsiemens
MELP	Ministry of Environment, Lands and Parks	°C	Temperature
mm	Millimeter	%	Slope gradient
MSRM	Ministry of Sustained Resource Management		

7. List of Appendices

Appendix I: **FDIS Reach/Site Summaries**

Appendix II: **Photographs**

Appendix III: **Hardcopy Maps**

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

Resampling in the Pendleton Sub-unit 2003/04

- **Appendix I: FDIS Reach/Site Summaries**

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 3 **Site #:** 95
WSC: 480-818600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.317656.6053473. **Air Photo #:** BCC96154: 16 **Setting:** MP **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 805 **Length (km):** 0.40 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 790 **Gradient (%):** 3.75 **Open Water:** A **Bars:** N
Channel Pattern: IR **Coupling:** PC **Disturbance:** **Rip Veg:** M
Confinement: FC **Valley Flat:** B - D **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 150 **Access:** FT **Date:** 2003-08-12 **Time:** 1410 **Fish Card:** Y **FPC Class:** S6
NID: 3095 **GIS UTM (ZEN):** 10.317899.6053468 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.051 **Field UTM (ZEN):** 10.317902.6053498. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** Bed scour **Temp /C/:** 13
Avg Channel Width (m): 1.36 **Avg Pool Depth (m):** 0.09 **Avg Gradient (%):** 6 **pH:** 8.30
Avg Wetted Width (m): 0.38 **Avg Bankfull Depth (m):** 0.27 **Turbidity:** C **Conductivity:** 80

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** AM

LB SHP: V **RB SHP:** S
LB Tex: F **RB Tex:** F
LB RIP: D **RB RIP:** D
LB STG: MF **RB STG:** MF

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 2 **Morph:** CP **Pattern:** SI **Confinement:** OC **Coupling:** PC
Bed Subst Subdom: G **D90 (cm):** 30 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	294	150	400	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	17	STD	U	cam bag
SITE	13	18	STD	D	dog

HABITAT COMMENTS

Overwintering habitat	None.
Rearing habitat	No deep enough sections for seasonal rearing
Spawning habitat	None.
Other habitat	Poor - marginal FPC stream in sections - frequently trickle over moss, but mainly channelized; shallow, seasonal algae-filled water. Observed dry 0.8m wide organic channel u/s.

SITE COMMENTS

Site = UTM = all reach=S6. Confirmed presence of accessible habitat (marginal) to the end of reach 2, but NFC in upper reach in 1998.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 96
WSC: 480-818600-91997
ILP: 51500 **ILP Map:** 93K.051

REACH INFORMATION

Reach UTM (ZEN): 10.318244.6053162. **Air Photo #:** BCC96154: 16 **Setting:** MP **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 800 **Length (km):** 0.38 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 780 **Gradient (%):** 5.26 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** M
Confinement: FC **Valley Flat:** B - D **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-12 **Time:** 1350 **Fish Card:** N **FPC Class:** NCD
NID: 3096 **GIS UTM (ZEN):** 10.318074.6053465 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.051 **Field UTM (ZEN):** 10.318075.6053465. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** 28 **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	Amount:							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**

LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	16	STD	U	boot

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - drainage is steep trickle (28%) over organics, no fluvium, no continuous channel bed, no fish habitat, passage or potential.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** Sag C. **Reach #:** 7 **Site #:** 97
WSC: 480-825200
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.319690.6051189. **Air Photo #:** BCC96049: 44 **Setting:** MP **BEC Zone:** SBS
Order: 3 **US Elevation (m):** 796 **Length (km):** 0.60 **Floodplain Width (m):** None
Magnitude: 13 **DS Elevation (m):** 795 **Gradient (%):** 0.17 **Open Water:** P **Bars:** N
Channel Pattern: SI **Coupling:** DC **Disturbance:** O1B1C4 **Rip Veg:** S
Confinement: UN **Valley Flat:** B/C **Islands:** I **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-11 **Time:** 0940 **Fish Card:** Y **FPC Class:** S5
NID: 3097 **GIS UTM (ZEN):** 10.319444.6051629 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.319445.6051630. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 12
Avg Channel Width (m): 4.5 **Avg Pool Depth (m):** 0.5 **Avg Gradient (%):** 0.5 **pH:** 8.10
Avg Wetted Width (m): 4 **Avg Bankfull Depth (m):** 0.67 **Turbidity:** C **Conductivity:** 80

COVER

Cover Total: A

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	D	S	S
Loc P/S/O:					P	P	P

LB SHP: S **RB SHP:** S
LB Tex: F **RB Tex:** F
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

Canopy: 21-40% **LWD Distr:** N **ISV (NAMV):** AMV

MORPHOLOGY

Bed Subst Dom: F **D (cm):** 0.01 **Morph:** LC **Pattern:** IR **Confinement:** UN **Coupling:** DC
Bed Subst Subdom: NA **D90 (cm):** 0.10 **Disturb:** O1 **Islands:** O **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	268	150	500	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	16	STD	U	MJ
SITE	12	17	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	Poor -no flow, likely freezes.
Rearing habitat	
Spawning habitat	None.
Other habitat	Poor salmonid habitat - shrubby wetland with stagnant water over organics with abundant ISV, good cyprinids habitat.

SITE COMMENTS

Site = UTM. Resampled to confirm FPC non-fish bearing status above falls.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** Sag C. **Reach #:** 14 **Site #:** 98
WSC: 480-825200
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.320683.6048015. **Air Photo #:** BCC96049: 84 **Setting:** MP **BEC Zone:** SBS

Order:	2	**US Elevation (m):**	844	**Length (km):**	0.74	**Floodplain Width (m):**	None		
Magnitude:	3	**DS Elevation (m):**	799	**Gradient (%):**	6.08	**Open Water:**	A	**Bars:**	N
Channel Pattern:	SI	**Coupling:**	DC	**Disturbance:**		**Rip Veg:**	C		
Confinement:	OC	**Valley Flat:**	B/C	**Islands:**	N	**Land Use:**	OT		

SITE REFERENCING

Site Length (m): 150 **Access:** FT **Date:** 2003-08-11 **Time:** 1015 **Fish Card:** Y **FPC Class:** S6
NID: 3098 **GIS UTM (ZEN):** 10.321011.6048237 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321009.6048240. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** Rafted debris **Temp /C/:** 12
Avg Channel Width (m): 1.85 **Avg Pool Depth (m):** 0.12 **Avg Gradient (%):** 5 **pH:** 8
Avg Wetted Width (m): 1.05 **Avg Bankfull Depth (m):** 0.33 **Turbidity:** C **Conductivity:** 210

COVER

Cover Total: T

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	T	T	N	T	D	S	N
Loc P/S/O:	P	P		P	P	P	

LB SHP: S **RB SHP:** V
LB Tex: FG **RB Tex:** FG
LB RIP: C **RB RIP:** C
LB STG: SHR **RB STG:** SHR

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

MORPHOLOGY

Bed Subst Dom:	G	**D (cm):**	2	**Morph:**	RP	**Pattern:**	IR	**Confinement:**	UN	**Coupling:** DC
Bed Subst Subdom:	C	**D90 (cm):**	8	**Disturb:**		**Islands:**	I	**Bars:**	SIDE,MID	

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	313	150	400	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	18	STD	U	cam bag
SITE	12	19	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	Poor - lacks sufficient deep pools.
Rearing habitat	Fair to moderate in occasional pools, but overall quite shallow.
Spawning habitat	Good - abundant suitable uniform gravels.
Other habitat	

SITE COMMENTS

Site = UTM. Sampled to confirm FPC non-fish bearing status above falls. LKC and LND caught below first lake; no RB present in system above falls.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 99
WSC: 480-830238
ILP: 52508 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.320640.6052193. **Air Photo #:** BCC96049: 45 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 760 **Length (km):** 0.22 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 20.9 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** NS
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 0925 **Fish Card:** N **FPC Class:** NCD
NID: 3099 **GIS UTM (ZEN):** 10.320844.6052190 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.320845.6052190. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	**Amount:**							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	15	STD	U	no scale

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no channel, no water; drainage just occasionally moist devil's Club depression on valley wall.

SITE COMMENTS

Site = UTM = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 100
WSC: 480-842938
ILP: 52510 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.321713.6049464. **Air Photo #:** BCC96049: 82 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 803 **Length (km):** 0.53 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 16.8 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 0945 **Fish Card:** N **FPC Class:** NCD
NID: 3100 **GIS UTM (ZEN):** 10.322192.6049595 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.322192.6049595. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

Cover Total:	Type:	SWD	LWD	B	C	DP	OV	IV
	Amount:							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	16	STD	X	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no channel, no water.

SITE COMMENTS

Site = UTM = "mouth". Not an FPC stream - no continuous channel bed - disconnected moss puddles in devil's club, no fish habitat or access.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 101
WSC: 480-847187
ILP: 52511 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.322215.6048560. **Air Photo #:** BCC96049: 82 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 790 **Length (km):** 0.44 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 17.3 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1010 **Fish Card:** N **FPC Class:** NCD
NID: 3101 **GIS UTM (ZEN):** 10.322563.6048770 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.322563.6048770. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	**Amount:**							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	17	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no channel or water. Stream just a seepage through devil's club down valley wall.

SITE COMMENTS

Site = UTM = "mouth". No fish habitat, passage or potential. Occasionally flooded near mouth at high lake level.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 102
WSC: 480-847907
ILP: 52512 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.322286.6048359. **Air Photo #:** BCC96049: 82 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 780 **Length (km):** 0.40 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 16.5 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1040 **Fish Card:** N **FPC Class:** NCD
NID: 3102 **GIS UTM (ZEN):** 10.322635.6048312 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.322636.6048313. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

Cover Total:	Type:	SWD	LWD	B	C	DP	OV	IV
	Amount:							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	18	STD	U	no scale

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - drainage just steep devil's club depression lacking fluvium and continuous channel bed. No connection to Babine L., no water, no potential.

SITE COMMENTS

Site = 20m from "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 103
WSC: 480-848269
ILP: 52513 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.322277.6047741. **Air Photo #:** BCC96049: 82 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 795 **Length (km):** 0.64 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 12.7 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1053 **Fish Card:** N **FPC Class:** NCD
NID: 3103 **GIS UTM (ZEN):** 10.322783.6048046 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.322783.6048047. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

Cover Total:

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:							
Loc P/S/O:							

LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

Canopy: **LWD Distr:** **ISV (NAMV):**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	19	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no channel or water present. Drainage just a slight gully seepage through devil's club with no continuous defined channel, occasional wetted spots, shallow, organic, but no fish habitat or potential.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 3.1 **Site #:** 104
WSC: 480-851000
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.321068.6045938. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 3 **US Elevation (m):** 899 **Length (km):** 0.78 **Floodplain Width (m):** None
Magnitude: 4 **DS Elevation (m):** 835 **Gradient (%):** 8.21 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** S
Confinement: CO **Valley Flat:** B - D **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-10 **Time:** 1210 **Fish Card:** Y **FPC Class:** S3
NID: 3104 **GIS UTM (ZEN):** 10.321613.6046421 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321612.6046423. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 9
Avg Channel Width (m): 1.9 **Avg Pool Depth (m):** 0.23 **Avg Gradient (%):** 2.75 **pH:** 8.10
Avg Wetted Width (m): 1.52 **Avg Bankfull Depth (m):** 0.37 **Turbidity:** C **Conductivity:** 140

COVER

Cover Total: A

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	T	T	S	T	D	S	N
Loc P/S/O:	P	P	P	P	P	P	

LB SHP: V **RB SHP:** S
LB Tex: F **RB Tex:** F
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 5 **Morph:** RP **Pattern:** IR **Confinement:** UN **Coupling:** DC
Bed Subst Subdom: F **D90 (cm):** 16 **Disturb:** **Islands:** N **Bars:** SIDE,,

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	364	100	500	80	6	RB	J	1	82	82	R

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	26	STD	U	cam bag
SITE	12	27	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	Poor - lacks sufficient depth in pools.
Rearing habitat	Good in occasional deep pools/cutbanks - plenty of OSV cover (devil's club), although pools not that abundant or deep.
Spawning habitat	Poor - substrate mainly angular cobbles.
Other habitat	

SITE COMMENTS

Site = UTM. This stream mapped wrong on TRIM - not part of 480-851000 system, but flows into -03600 system. No RB caught past 100m u/s from -03600.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 4 **Site #:** 105
WSC: 480-851000
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.319221.6045570. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 1060 **Length (km):** 1.98 **Floodplain Width (m):** None
Magnitude: 2 **DS Elevation (m):** 899 **Gradient (%):** 8.13 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** B - D **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-10 **Time:** 1520 **Fish Card:** N **FPC Class:** S6
NID: 3105 **GIS UTM (ZEN):** 10.321072.6045940 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321068.6045950. **Crew:** SR/MJ

CHANNEL

Channel Status: INT **Flow Stage:** L **Flood Signs:** None **Temp /C/:**
Avg Channel Width (m): 1.52 **Avg Pool Depth (m):** 0 **Avg Gradient (%):** 5.25 **pH:**
Avg Wetted Width (m): 0 **Avg Bankfull Depth (m):** 0.23 **Turbidity:** **Conductivity:**

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

Canopy: 41-70% **LWD Distr:** N **ISV (NAMV):** N

LB SHP: S **RB SHP:** S
LB Tex: FC **RB Tex:** FC
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 5 **Morph:** RP **Pattern:** SI **Confinement:** OC **Coupling:** DC
Bed Subst Subdom: F **D90 (cm):** 35 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)
093K.052	31051	FLD		100	R13F2	as as site at least	10.321067.6045949.	10.321068.6045950.
093K.052	31052	SP				flow contributor - stream dry above	10.321083.6045959.	10.321083.6045959.

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	1	STD	U	cam bag
SITE	13	2	STD	D	cam bag - dewatering in features

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - cannel totally dry. Flow abruptly stops here, huge dewatering and only water present during scouring flows. Spring observed immediately d/s, which likely provides persistent flow, but u/s from spring there is no fish habitat or potential.

SITE COMMENTS

Site = UTM = start of non-fish bearing reach.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 106
WSC: 480-849100-03600-55387
ILP: 52514 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.321144.6047155. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 845 **Length (km):** 0.82 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 825 **Gradient (%):** 2.44 **Open Water:** A **Bars:** N
Channel Pattern: IR **Coupling:** DC **Disturbance:** **Rip Veg:** M
Confinement: UN **Valley Flat:** B/C **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-10 **Time:** 1045 **Fish Card:** N **FPC Class:** NCD
NID: 3106 **GIS UTM (ZEN):** 10.321552.6046955 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321553.6046955. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC Flow Stage: **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): Avg Pool Depth (m): **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): Avg Bankfull Depth (m): **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	Amount:							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	20	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no channel, no water - not an FPC stream. Only evidence of drainage is moist ground at mapped stream location.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 107
WSC: 480-849100-03600-59045
ILP: 52515 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.321405.6046719. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 837 **Length (km):** 0.22 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 828 **Gradient (%):** 4.09 **Open Water:** A **Bars:** N
Channel Pattern: IR **Coupling:** DC **Disturbance:** **Rip Veg:** C
Confinement: UN **Valley Flat:** B/C **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-10 **Time:** 1055 **Fish Card:** N **FPC Class:** NCD
NID: 3107 **GIS UTM (ZEN):** 10.321540.6046885 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321540.6046886. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): Avg Pool Depth (m): **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): Avg Bankfull Depth (m): **Turbidity:** **Conductivity:**

COVER

Cover Total:

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:							
Loc P/S/O:							

LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

Canopy: **LWD Distr:** **ISV (NAMV):**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	21	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no channel or water present, occasionally moist dip in terrain.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 3 **Site #:** 108
WSC: 480-849100-03600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.321525.6046622. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 835 **Length (km):** 0.62 **Floodplain Width (m):** None
Magnitude: 3 **DS Elevation (m):** 815 **Gradient (%):** 3.23 **Open Water:** A **Bars:** N
Channel Pattern: IR **Coupling:** DC **Disturbance:** **Rip Veg:** C
Confinement: UN **Valley Flat:** B/C **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 400 **Access:** FT **Date:** 2003-08-10 **Time:** 1115 **Fish Card:** Y **FPC Class:** S4
NID: 3108 **GIS UTM (ZEN):** 10.321561.6046909 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321560.6046910. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 9
Avg Channel Width (m): 1.15 **Avg Pool Depth (m):** 0.14 **Avg Gradient (%):** 3.25 **pH:** 8
Avg Wetted Width (m): 0.9 **Avg Bankfull Depth (m):** 0.33 **Turbidity:** C **Conductivity:** 210

COVER

Cover Total: M

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	T	T	N	S	D	T	N
Loc P/S/O:	P	P		P	P	P	

LB SHP: S **RB SHP:** V
LB Tex: FGC **RB Tex:** FGC
LB RIP: C **RB RIP:** C
LB STG: MF **RB STG:** MF

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

MORPHOLOGY

Bed Subst Dom: G **D (cm):** 2 **Morph:** RP **Pattern:** IR **Confinement:** UN **Coupling:** DC
Bed Subst Subdom: F **D90 (cm):** 8 **Disturb:** **Islands:** N **Bars:** SIDE

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)
093K.052	31081	BMA				channel splits at site utm	10.321560.6046909.	10.321560.6046910.

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	138	400	400	80	6	RB	J	1	61	61	R

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	22	STD	U	cam bag
SITE	12	23	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	Poor - lacks sufficient deep pool cover.
Rearing habitat	Moderate - fairly shallow but decent flow and few pools provide moderate-good rearing.
Spawning habitat	Good - abundant uniform rounded gravels throughout reach.
Other habitat	

SITE COMMENTS

This is mapped west branch = S4, caught RB to here, S3, than splits - eastern branch is S3 and is actually 480-851000 system. RB captured here.
Site = UTM = point of confluence

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 4 **Site #:** 109
WSC: 480-849100-03600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.320402.6046477. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 930 **Length (km):** 1.27 **Floodplain Width (m):** None
Magnitude: 3 **DS Elevation (m):** 835 **Gradient (%):** 7.48 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** NS **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-10 **Time:** 1140 **Fish Card:** Y **FPC Class:** S6
NID: 3109 **GIS UTM (ZEN):** 10.321524.6046619 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321519.6046620. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 9
Avg Channel Width (m): 1 **Avg Pool Depth (m):** 0.1 **Avg Gradient (%):** 4 **pH:** 8
Avg Wetted Width (m): 0.9 **Avg Bankfull Depth (m):** 0.27 **Turbidity:** C **Conductivity:** 210

COVER

Cover Total: T

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	S	T	D	N
Loc P/S/O:				P	P	P	

Canopy: 71-90% **LWD Distr:** N **ISV (NAMV):** N

LB SHP: U **RB SHP:** U
LB Tex: F **RB Tex:** F
LB RIP: C **RB RIP:** C
LB STG: MF **RB STG:** MF

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 3 **Morph:** CP **Pattern:** IR **Confinement:** OC **Coupling:** DC
Bed Subst Subdom: F **D90 (cm):** 10 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)
093K.052	31091	FSB		100	R12F25	impassable to fish	10.321518.6046620.	10.321519.6046620.

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	216	100	400	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	24	STD	U	cam bag
SITE	12	25	STD	D	boot - FSB in features

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	Poor overall - still flowing in this reach, but FSB blocks any potential fish passage. Most of channel is underground u/s from this point, resulting in an overall lack of fish habitat.

SITE COMMENTS

Site = UTM = 1st FSB = start of non-fish bearing section. Move reach 4 boundary d/s to EFU. Most of reach flows underground (90%), hence the ground estimates for channel measurements, cover, etc.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 110
WSC: 480-851000-98983-12711
ILP: 52520 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.319806.6046221. **Air Photo #:** BCC98018: 14 **Setting:** MP **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 1030 **Length (km):** 1.60 **Floodplain Width (m):** None
Magnitude: 2 **DS Elevation (m):** 865 **Gradient (%):** 10.3 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-10 **Time:** 1330 **Fish Card:** Y **FPC Class:** S6
NID: 3110 **GIS UTM (ZEN):** 10.321347.6046190 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.025 **Field UTM (ZEN):** 10.321348.6046190. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 9
Avg Channel Width (m): 1.18 Avg Pool Depth (m): 0.02 **Avg Gradient (%):** 12.3 **pH:** 8
Avg Wetted Width (m): 0.3 Avg Bankfull Depth (m): 0.1 **Turbidity:** C **Conductivity:** 80

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

LB SHP: S **RB SHP:** S
LB Tex: FC **RB Tex:** FC
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

Canopy: 41-70% **LWD Distr:** N **ISV (NAMV):** N

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 8 **Morph:** CP **Pattern:** SI **Confinement:** FC **Coupling:** PC
Bed Subst Subdom: F **D90 (cm):** 30 **Disturb:** C1 **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	48	100	500	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	12	28	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	No potential.
Rearing habitat	
Spawning habitat	No spawning substrate.
Other habitat	None - stream flows between angular cobbles down moderately steep valley wall with no pools; no potential for pools even at higher flow.

SITE COMMENTS

Site = mouth. Shocked all available habitat, generally too shallow to cover probe or fish, no habitat.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 111
WSC: 480-852091
ILP: 52523 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.323141.6046389. **Air Photo #:** BCC98018: 15 **Setting:** VW **BEC Zone:** SBS

Order:	2	**US Elevation (m):**	785	**Length (km):**	0.40	Floodplain Width (m):	None
Magnitude:	2	**DS Elevation (m):**	714	**Gradient (%):**	17.8	Open Water: A	Bars: N
Channel Pattern:	SI	**Coupling:**	CO	**Disturbance:**		Rip Veg: M	
Confinement:	CO	**Valley Flat:**	N	**Islands:**	N	Land Use: UD	

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1115 **Fish Card:** N **FPC Class:** NCD
NID: 3111 **GIS UTM (ZEN):** 10.323422.6046520 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.323423.6046521. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC	**Flow Stage:**	**Flood Signs:**	**Temp /C/:**
Avg Channel Width (m):	Avg Pool Depth (m):	**Avg Gradient (%):**	**pH:**
Avg Wetted Width (m):	Avg Bankfull Depth (m):	**Turbidity:**	**Conductivity:**

COVER

Cover Total:	**Type:**	**SWD**	**LWD**	**B**	**C**	**DP**	**OV**	**IV**
	Amount:							
	Loc P/S/O:							

LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

Canopy: **LWD Distr:** **ISV (NAMV):**

MORPHOLOGY

Bed Subst Dom:	**D (cm):**	**Morph:**	**Pattern:**	**Confinement:**	**Coupling:**
Bed Subst Subdom:	**D90 (cm):**	**Disturb:**	**Islands:**	**Bars:**	

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	20	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no water, no channel. Gully with no flow, but occasional signs of moistness - devil's club.

SITE COMMENTS

Site = "mouth". No defined channel, fluvium or potential, no fish habitat or potential.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 112
WSC: 480-856600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.323823.6045575. **Air Photo #:** BCC98023: 17 **Setting:** VF **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 735 **Length (km):** 0.38 **Floodplain Width (m):** None
Magnitude: 3 **DS Elevation (m):** 714 **Gradient (%):** 6.11 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** PC **Disturbance:** **Rip Veg:** M
Confinement: CO **Valley Flat:** B - D **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1135 **Fish Card:** Y **FPC Class:** S3
NID: 3112 **GIS UTM (ZEN):** 10.324084.6045625 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.324108.6045608. **Crew:** SR/MJ

CHANNEL

Channel Status: INT **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 11
Avg Channel Width (m): 1.95 Avg Pool Depth (m): 0.13 **Avg Gradient (%):** 3.25 **pH:** 8.30
Avg Wetted Width (m): 0.42 Avg Bankfull Depth (m): 0.33 **Turbidity:** C **Conductivity:** 80

COVER

Cover Total: T

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	T	T	N	N	D	S	N
Loc P/S/O:	P	P			P	P	

LB SHP: V **RB SHP:** S
LB Tex: FGC **RB Tex:** FGC
LB RIP: D **RB RIP:** D
LB STG: YF **RB STG:** YF

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** A

MORPHOLOGY

Bed Subst Dom: G **D (cm):** 5 **Morph:** RP **Pattern:** IR **Confinement:** UN **Coupling:** DC
Bed Subst Subdom: C **D90 (cm):** 15 **Disturb:** **Islands:** N **Bars:** SIDE

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	178	100	500	80	6	CAS	J	1	64	64	R
						RB	J	2	57	64	R

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	21	STD	U	cam bag
SITE	7	22	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	None - lacks sufficient deep pools.
Rearing habitat	Fair - seasonal and almost dry, but few small pools suitable for rearing.
Spawning habitat	Moderate - abundant suitable gravels but may lack persistent flow, already almost dry.
Other habitat	Low value habitat.

SITE COMMENTS

Site = UTM = ~40m from mouth. Resampled from 1998 FFHI - confirmed fish presence - CAS, RB - adjusted FPC class to S3. Shocked all available habitat

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 2 **Site #:** 113
WSC: 480-856600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.323295.6045333. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 787 **Length (km):** 0.40 **Floodplain Width (m):** None
Magnitude: 3 **DS Elevation (m):** 757 **Gradient (%):** 7.5 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** S
Confinement: CO **Valley Flat:** B - D **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 400 **Access:** FT **Date:** 2003-08-11 **Time:** 0940 **Fish Card:** N **FPC Class:** S6
NID: 3113 **GIS UTM (ZEN):** 10.323561.6045716 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.323568.6045708. **Crew:** SR/MJ

CHANNEL

Channel Status: INT **Flow Stage:** L **Flood Signs:** None **Temp /C/:**
Avg Channel Width (m): 1.88 **Avg Pool Depth (m):** 0 **Avg Gradient (%):** 6 **pH:**
Avg Wetted Width (m): 0 **Avg Bankfull Depth (m):** 0.43 **Turbidity:** **Conductivity:**

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

Canopy: 71-90% **LWD Distr:** F/E **ISV (NAMV):** N

LB SHP: V **RB SHP:** V
LB Tex: FGC **RB Tex:** FGC
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 10 **Morph:** CP **Pattern:** SI **Confinement:** CO **Coupling:** CO
Bed Subst Subdom: G **D90 (cm):** 50 **Disturb:** B2D2C1 **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	3	STD	U	cam bag
SITE	13	4	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	No fish habitat - seasonal stream with fast flow during high water, pools shallow and short when flooded, then stream dries quickly; very little instream cover when watered - no seasonal use from site UTM.

SITE COMMENTS

Site = UTM

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 114
WSC: 480-858600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.323831.6045277. **Air Photo #:** BCC98023: 17 **Setting:** VF **BEC Zone:** SBS
Order: 3 **US Elevation (m):** 736 **Length (km):** 0.76 Floodplain Width (m): 20
Magnitude: 12 **DS Elevation (m):** 714 **Gradient (%):** 2.89 Open Water: P Bars: Side
Channel Pattern: IR **Coupling:** DC **Disturbance:** O1C4 Rip Veg: S
Confinement: UN **Valley Flat:** B/C **Islands:** I Land Use: OT

SITE REFERENCING

Site Length (m): 200 **Access:** V4 **Date:** 2003-08-11 **Time:** 1050 **Fish Card:** Y **FPC Class:** S3
NID: 3114 **GIS UTM (ZEN):** 10.324042.6045230 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.324043.6045246. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 10
Avg Channel Width (m): 2.92 Avg Pool Depth (m): 0.4 **Avg Gradient (%):** 2.75 **pH:**
Avg Wetted Width (m): 1.4 Avg Bankfull Depth (m): 0.4 **Turbidity:** C **Conductivity:** 240

COVER

Cover Total: A

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	T	T	N	S	D	T	N
Loc P/S/O:	P	P		P	P	P	

LB SHP: S **RB SHP:** U
LB Tex: FG **RB Tex:** FG
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

MORPHOLOGY

Bed Subst Dom: G **D (cm):** 8 **Morph:** RP **Pattern:** IR **Confinement:** UN **Coupling:** DC
Bed Subst Subdom: C **D90 (cm):** 12 **Disturb:** B2 **Islands:** O **Bars:** SIDE,DIAG

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	142	200	300	80	6	CO	J	1	77	77	R
						RB	J	2	60	74	R

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	5	STD	U	cam bag
SITE	13	6	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	Good - many suitable pools observed.
Rearing habitat	Good-excellent - in mostly pool/cutbanks/LWD type cover.
Spawning habitat	Good - abundant gravels, good flow and good holding.
Other habitat	

SITE COMMENTS

Site = UTM = road crossing. Observed BD at mouth had been breached - fish moving in.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 6 **Site #:** 115
WSC: 480-858600
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.320387.6043011. **Air Photo #:** BCC98023: 17 **Setting:** MP **BEC Zone:** SBS

Order:	2	**US Elevation (m):**	975	**Length (km):**	1.33	**Floodplain Width (m):**	None
Magnitude:	5	**DS Elevation (m):**	918	**Gradient (%):**	4.29	**Open Water:** A	**Bars:** N
Channel Pattern:	SI	**Coupling:**	CO	**Disturbance:**		**Rip Veg:** C	
Confinement:	FC	**Valley Flat:**	N	**Islands:**	N	**Land Use:** NO	

SITE REFERENCING

Site Length (m): 150 **Access:** FT **Date:** 2003-08-11 **Time:** 1530 **Fish Card:** Y **FPC Class:** S6
NID: 3115 **GIS UTM (ZEN):** 10.321486.6043614 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321486.6043616. **Crew:** SR/MJ

CHANNEL

Channel Status:		**Flow Stage:** L	**Flood Signs:** None		**Temp /C/:** 12
Avg Channel Width (m):	1.73	**Avg Pool Depth (m):** 0.33	**Avg Gradient (%):** 5.75		**pH:**
Avg Wetted Width (m):	0.78	**Avg Bankfull Depth (m):** 0.33	**Turbidity:** C		**Conductivity:** 40

COVER

Cover Total: M

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	S	N	D	T	T
Loc P/S/O:			P		P	P	P

LB SHP: V **RB SHP:** V
LB Tex: R **RB Tex:** R
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

Canopy: 1-20% **LWD Distr:** N **ISV (NAMV):** A

MORPHOLOGY

Bed Subst Dom:	R	**D (cm):**	10	**Morph:**	CP	**Pattern:**	SI	**Confinement:**	EN	**Coupling:** CO
Bed Subst Subdom:	C	**D90 (cm):**	400	**Disturb:**		**Islands:**	N	**Bars:**	N	

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)
093K.052	31151	F	3		R13F10	Impassable falls	10.321486.6043615.	10.321486.6043616.

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	388	150	600	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	10	STD	U	MJ - falls in features
SITE	13	11	STD	U	cam bag
SITE	13	12	STD	D	SR

HABITAT COMMENTS

Overwintering habitat	Potentially suitable deep pools, but likely not enough flow.
Rearing habitat	Good - many pools and boulders, however affected by low flows.
Spawning habitat	None - mixed angular substrate on bedrock.
Other habitat	Habitat isolated above falls.

SITE COMMENTS

Site = UTM = from falls. Walked stream from reach 1. Reach 2 - easy access, many deep pools for overwintering and gravels for spawning. Reach 3 - Deep pools scarce - intermittent ~100m below reach boundary, conductivity change from 240 to 50. Reach 4 - intermittent, scarce cover, but deep pools still present - accessible and passable. Reach 5 - excellent rearing, spawning and overwintering habitat - pure gravel in substrate, all watered, best habitat except reach 1; channel width - 2.5m. Extensive scour in lower 100m of reach 2 - potential access problem at high water. Fish moving in after BD breach at Babine L. - NFC in 1998 FFHI. Walked and shocked reaches 2,3,4 and 5 (1238sec) with NFC, but all passable and usable.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 2 **Site #:** 116
WSC: 480-858600-15000
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.320019.6044414. **Air Photo #:** BCC98023: 17 **Setting:** MP **BEC Zone:** SBS
Order: 3 **US Elevation (m):** 1035 **Length (km):** 2.33 **Floodplain Width (m):** None
Magnitude: 5 **DS Elevation (m):** 852 **Gradient (%):** 7.85 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: FC **Valley Flat:** B - D **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 200 **Access:** FT **Date:** 2003-08-12 **Time:** 1010 **Fish Card:** N **FPC Class:** S6
NID: 3116 **GIS UTM (ZEN):** 10.322232.6044902 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.322230.6044885. **Crew:** SR/MJ

CHANNEL

Channel Status: INT **Flow Stage:** L **Flood Signs:** scour **Temp /C/:**
Avg Channel Width (m): 2.13 **Avg Pool Depth (m):** 0 **Avg Gradient (%):** 4.5 **pH:**
Avg Wetted Width (m): 0 **Avg Bankfull Depth (m):** 0.43 **Turbidity:** **Conductivity:**

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

LB SHP: V **RB SHP:** V
LB Tex: FGC **RB Tex:** FGC
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** M

MORPHOLOGY

Bed Subst Dom: G **D (cm):** 8 **Morph:** RP **Pattern:** IR **Confinement:** OC **Coupling:** DC
Bed Subst Subdom: C **D90 (cm):** 35 **Disturb:** **Islands:** N **Bars:** SIDE

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	13	STD	U	cam bag
SITE	13	14	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	None.
Rearing habitat	
Spawning habitat	None.
Other habitat	None - channel bone dry, potential - none. No fish caught up to here, NFC in parent.

SITE COMMENTS

Site = UTM = start of non-fish bearing reach. No overwintering present in watershed. If present, RB would have been captured in beautiful habitat in parent. Confirmed accessible for seasonal rearing to site UTM. NFC d/s from mouth to here.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 117
WSC: 480-858600-44923
ILP: 52527 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.320785.6043893. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 975 **Length (km):** 0.84 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 910 **Gradient (%):** 7.74 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: FC **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-11 **Time:** 1520 **Fish Card:** N **FPC Class:** S6
NID: 3117 **GIS UTM (ZEN):** 10.321539.6043807 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.321539.6043807. **Crew:** SR/MJ

CHANNEL

Channel Status: INT **Flow Stage:** L **Flood Signs:** None **Temp /C/:**
Avg Channel Width (m): 1.32 **Avg Pool Depth (m):** 0 **Avg Gradient (%):** 11.5 **pH:**
Avg Wetted Width (m): 0 **Avg Bankfull Depth (m):** 0.17 **Turbidity:** **Conductivity:**

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

LB SHP: V **RB SHP:** V
LB Tex: FGC **RB Tex:** FGC
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 10 **Morph:** CP **Pattern:** SI **Confinement:** CO **Coupling:** CO
Bed Subst Subdom: G **D90 (cm):** 15 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	8	STD	U	cam bag
SITE	13	9	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	None.
Rearing habitat	None.
Spawning habitat	None.
Other habitat	No fish habitat - small and seasonal stream with no instream cover when flow, increasing gradient, NFC in parent.

SITE COMMENTS

Site = UTM

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 118
WSC: 480-863300-14300
ILP: **ILP Map:**

REACH INFORMATION

Reach UTM (ZEN): 10.324081.6043336. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 820 **Length (km):** 0.88 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 732 **Gradient (%):** 10 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** NS
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** FT **Date:** 2003-08-12 **Time:** 1210 **Fish Card:** N **FPC Class:** NCD
NID: 3118 **GIS UTM (ZEN):** 10.324483.6044012 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.324483.6044017. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	**Amount:**							
	Loc P/S/O:							

LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

Canopy: **LWD Distr:** **ISV (NAMV):**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	13	15	STD	BD	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no water, no defined channel. Drainage just devil's club gully with occasional channelized sections over organics, which are dry, no habitat, no connection.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 119
WSC: 480-868855
ILP: 52534 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.324412.6043378. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 796 **Length (km):** 0.98 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 8.37 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** NS
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** UD

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1235 **Fish Card:** N **FPC Class:** NCD
NID: 3119 **GIS UTM (ZEN):** 10.325322.6043995 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.325322.6043995. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): Avg Pool Depth (m): **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): Avg Bankfull Depth (m): **Turbidity:** **Conductivity:**

COVER

Cover Total:

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:							
Loc P/S/O:							

LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

Canopy: **LWD Distr:** **ISV (NAMV):**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	23	STD	U	dog

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no water, no channel.

SITE COMMENTS

Site = "mouth". Drainage is dry meltwater runoff with no fluvium or continuous channel bed, no fish habitat.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 120
WSC: 480-869799
ILP: 52535 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.325004.6043165. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 727 **Length (km):** 0.24 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 5.42 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** NS
Confinement: FC **Valley Flat:** B - D **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** V2 **Date:** 2003-07-16 **Time:** 1440 **Fish Card:** N **FPC Class:** NCD
NID: 3120 **GIS UTM (ZEN):** 10.325197.6043103 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.325198.6043104. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	**Amount:**							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	8	7	STD	U	cam bag

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - no water, no channel present - no connection to lake, on u/s side of access road, evidence of water collection, flooded shrubs, but dry now. Water pump in park located near "mouth", may tap aquifer? Possibly a channel u/s, but no fish access.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 121
WSC: 480-870326
ILP: 52536 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.325002.6042591. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 807 **Length (km):** 0.58 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 16.0 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** M
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1420 **Fish Card:** N **FPC Class:** NCD
NID: 3121 **GIS UTM (ZEN):** 10.325497.6042664 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.325498.6042664. **Crew:** SR/MJ

CHANNEL

Channel Status: NVC **Flow Stage:** **Flood Signs:** **Temp /C/:**
Avg Channel Width (m): **Avg Pool Depth (m):** **Avg Gradient (%):** **pH:**
Avg Wetted Width (m): **Avg Bankfull Depth (m):** **Turbidity:** **Conductivity:**

COVER

	Type:	SWD	LWD	B	C	DP	OV	IV
Cover Total:	**Amount:**							
	Loc P/S/O:							

Canopy: **LWD Distr:** **ISV (NAMV):**
LB SHP: **RB SHP:**
LB Tex: **RB Tex:**
LB RIP: **RB RIP:**
LB STG: **RB STG:**

MORPHOLOGY

Bed Subst Dom: **D (cm):** **Morph:** **Pattern:** **Confinement:** **Coupling:**
Bed Subst Subdom: **D90 (cm):** **Disturb:** **Islands:** **Bars:**

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	8	6	STD	BD	no scale

HABITAT COMMENTS

Overwintering habitat	
Rearing habitat	
Spawning habitat	
Other habitat	None - drainage is devil's club depression, seepage with no continuous channel bed, fluvium or water, no habitat or potential.

SITE COMMENTS

Site = "mouth"

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 122
WSC: 480-870717
ILP: 52537 **ILP Map:** 93K.052

REACH INFORMATION

Reach UTM (ZEN): 10.324656.6042089. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 2 **US Elevation (m):** 880 **Length (km):** 1.18 **Floodplain Width (m):** None
Magnitude: 2 **DS Elevation (m):** 714 **Gradient (%):** 14.1 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1350 **Fish Card:** Y **FPC Class:** S6
NID: 3122 **GIS UTM (ZEN):** 10.325638.6042601 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.052 **Field UTM (ZEN):** 10.325638.6042601. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 11
Avg Channel Width (m): 1.42 **Avg Pool Depth (m):** 0.05 **Avg Gradient (%):** 8.75 **pH:** 8.10
Avg Wetted Width (m): 0.27 **Avg Bankfull Depth (m):** 0.27 **Turbidity:** C **Conductivity:** 90

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

LB SHP: V **RB SHP:** V
LB Tex: FC **RB Tex:** FC
LB RIP: S **RB RIP:** S
LB STG: NA **RB STG:** NA

MORPHOLOGY

Bed Subst Dom: C **D (cm):** 2 **Morph:** CP **Pattern:** IR **Confinement:** OC **Coupling:** DC
Bed Subst Subdom: G **D90 (cm):** 18 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	78	100	500	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	8	4	STD	U	cam bag
SITE	8	5	STD	D	SR

HABITAT COMMENTS

Overwintering habitat	None.
Rearing habitat	Poor - seasonal, shallow trickle through mixed cobble/gravel. No pools sufficient for RB, than rising gradient, channel dries. No reason for fish use.
Spawning habitat	None - mixed cobbles, lacks persistent flow.
Other habitat	

SITE COMMENTS

Site = mouth = UTM. Shocked all available habitat, than dry/steep.

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 123
WSC: 480-873625
ILP: 42500 **ILP Map:** 93K.042

REACH INFORMATION

Reach UTM (ZEN): 10.325670.6040782. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 920 **Length (km):** 2.04 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 719 **Gradient (%):** 9.85 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** C
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** OT

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1325 **Fish Card:** Y **FPC Class:** S6
NID: 3123 **GIS UTM (ZEN):** 10.327141.6041832 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.042 **Field UTM (ZEN):** 10.327141.6041832. **Crew:** SR/MJ

CHANNEL

Channel Status: INT Flow Stage: L **Flood Signs:** None **Temp /C/:** 11
Avg Channel Width (m): 1.02 Avg Pool Depth (m): 0.05 **Avg Gradient (%):** 5.25 **pH:** 8.2
Avg Wetted Width (m): 0.27 Avg Bankfull Depth (m): 0.27 **Turbidity:** C **Conductivity:** 80

COVER

Cover Total: T

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	T	T	T	T	D	S	N
Loc P/S/O:	P	P	P	P	P	P	

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** N

LB SHP: V **RB SHP:** U
LB Tex: F **RB Tex:** F
LB RIP: M **RB RIP:** M
LB STG: MF **RB STG:** MF

MORPHOLOGY

Bed Subst Dom: G **D (cm):** 1 **Morph:** RP **Pattern:** SI **Confinement:** OC **Coupling:** DC
Bed Subst Subdom: C **D90 (cm):** 16 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)
093K.042	31231	FSB		5	R8F3	subsurface percolation - no passage, no overwinterin	10.327141.6041832.	10.327141.6041832.

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	264	100	500	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	8	1	STD	U	cam bag
SITE	8	2	STD	D	cam bag
SITE	8	3	STD	U	cam bag - FSB in features

HABITAT COMMENTS

Overwintering habitat	None.
Rearing habitat	Fair - overall very shallow with marginal seasonal rearing, in occasional small pools.
Spawning habitat	Fair - suitable gravels present, but lacks persistent flow.
Other habitat	Inaccessible due to FSB obstruction.

SITE COMMENTS

Site = UTM = FSB. Assume fish use to FSB (S4) - habitat present and accessible, but low value. NFC below FSB, otherwise would have done Site card. Also NFC from mouth

FDIS Reach/Site Summary

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: **Local Name:** **Reach #:** 1 **Site #:** 124
WSC: 480-876893
ILP: 42501 **ILP Map:** 93K.042

REACH INFORMATION

Reach UTM (ZEN): 10.327679.6041355. **Air Photo #:** BCC98023: 17 **Setting:** VW **BEC Zone:** SBS
Order: 1 **US Elevation (m):** 770 **Length (km):** 0.30 **Floodplain Width (m):** None
Magnitude: 1 **DS Elevation (m):** 714 **Gradient (%):** 18.7 **Open Water:** A **Bars:** N
Channel Pattern: SI **Coupling:** CO **Disturbance:** **Rip Veg:** S
Confinement: CO **Valley Flat:** N **Islands:** N **Land Use:** NO

SITE REFERENCING

Site Length (m): 100 **Access:** B **Date:** 2003-07-16 **Time:** 1250 **Fish Card:** Y **FPC Class:** S6
NID: 3124 **GIS UTM (ZEN):** 10.327877.6041563 **Agency Code:** C016 **Agency Name:** FINS Consulting Ltd.
NID Map: 093K.042 **Field UTM (ZEN):** 10.327877.6041564. **Crew:** SR/MJ

CHANNEL

Channel Status: **Flow Stage:** L **Flood Signs:** None **Temp /C/:** 11
Avg Channel Width (m): 0.62 Avg Pool Depth (m): 0.03 **Avg Gradient (%):** 5 **pH:** 8.10
Avg Wetted Width (m): 0.52 Avg Bankfull Depth (m): 0.1 **Turbidity:** C **Conductivity:** 80

COVER

Cover Total: N

Type:	SWD	LWD	B	C	DP	OV	IV
Amount:	N	N	N	N	N	N	N
Loc P/S/O:							

LB SHP: V **RB SHP:** V
LB Tex: F **RB Tex:** F
LB RIP: M **RB RIP:** M
LB STG: MF **RB STG:** MF

Canopy: 41-70% **LWD Distr:** F/E **ISV (NAMV):** A

MORPHOLOGY

Bed Subst Dom: F **D (cm):** 0.01 **Morph:** RP **Pattern:** SI **Confinement:** OC **Coupling:** DC
Bed Subst Subdom: NA **D90 (cm):** 1 **Disturb:** **Islands:** N **Bars:** N

FEATURES

NID MAP	NID	Type	Height (m)	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)

SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	Total Fish	Min Length (mm)	Max Length (mm)	Activity
EF	237	100	500	80	6	NFC		0			

PHOTOS

Owner	Roll #	Frame #	Focal Length	Direction	Comment
SITE	7	24	STD	U	dog
SITE	7	25	STD	D	cam bag

HABITAT COMMENTS

Overwintering habitat	None.
Rearing habitat	No suitable seasonal rearing potential.
Spawning habitat	No spawning substrate.
Other habitat	None - tiny, shallow, organic trickle not deep enough for fish.

SITE COMMENTS

Site = mouth. Surprised had channel and flow.

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

Resampling in the Pendleton Sub-unit 2003/04

- **Appendix II: Photographs**

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

Roll #	Frame #	Neg #	CD #	Image #	site #	WSC	Gazetted/Local Name	ILP Map	ILP	Reach	Dir	Owner	Focal Length	Date	Scale/Comment
7	15	15	2	161	99	480-830238		93K.052	52508	1	U	SITE	STD	2003-07-16	no scale
7	16	16	2	162	100	480-842938		93K.052	52510	1	X	SITE	STD	2003-07-16	cam bag
7	17	17	2	163	101	480-847187		93K.052	52511	1	U	SITE	STD	2003-07-16	cam bag
7	18	18	2	164	102	480-847907		93K.052	52512	1	U	SITE	STD	2003-07-16	no scale
7	19	19	2	165	103	480-848269		93K.052	52513	1	U	SITE	STD	2003-07-16	cam bag
7	20	20	2	166	111	480-852091		93K.052	52523	1	U	SITE	STD	2003-07-16	cam bag
7	21	21	2	167	112	480-856600				1	U	SITE	STD	2003-07-16	cam bag
7	22	22	2	168	112	480-856600				1	D	SITE	STD	2003-07-16	cam bag
7	23	23	2	169	119	480-868855		93K.052	52534	1	U	SITE	STD	2003-07-16	dog
7	24	24	2	170	124	480-876893		93K.042	42501	1	U	SITE	STD	2003-07-16	dog
7	25	25	2	171	124	480-876893		93K.042	42501	1	D	SITE	STD	2003-07-16	cam bag
8	1	1A	2	172	123	480-873625		93K.042	42500	1	U	SITE	STD	2003-07-16	cam bag
8	2	2A	2	173	123	480-873625		93K.042	42500	1	D	SITE	STD	2003-07-16	cam bag
8	3	3A	2	174	123	480-873625		93K.042	42500	1	U	SITE	STD	2003-07-16	cam bag - FSB in features
8	4	4A	2	175	122	480-870717		93K.052	52537	1	U	SITE	STD	2003-07-16	cam bag
8	5	5A	2	176	122	480-870717		93K.052	52537	1	D	SITE	STD	2003-07-16	SR
8	6	6A	2	177	121	480-870326		93K.052	52536	1	BD	SITE	STD	2003-07-16	no scale
8	7	7A	2	178	120	480-869799		93K.052	52535	1	U	SITE	STD	2003-07-16	cam bag
12	16	16	3	276	97	480-825200	Sag C.			7	U	SITE	STD	2003-08-11	MJ
12	17	17	3	277	97	480-825200	Sag C.			7	D	SITE	STD	2003-08-11	cam bag
12	18	18	3	278	98	480-825200	Sag C.			14	U	SITE	STD	2003-08-11	cam bag
12	19	19	3	279	98	480-825200	Sag C.			14	D	SITE	STD	2003-08-11	cam bag
12	20	20	3	280	106	480-849100-03600-55387		93K.052	52514	1	U	SITE	STD	2003-08-10	cam bag
12	21	21	3	281	107	480-849100-03600-59045		93K.052	52515	1	U	SITE	STD	2003-08-10	cam bag
12	22	22	3	282	108	480-849100-03600				3	U	SITE	STD	2003-08-10	cam bag
12	23	23	3	283	108	480-849100-03600				3	D	SITE	STD	2003-08-10	cam bag
12	24	24	3	284	109	480-849100-03600				4	U	SITE	STD	2003-08-10	cam bag
12	25	25	3	285	109	480-849100-03600				4	D	SITE	STD	2003-08-10	boot - FSB in features
12	26	26	3	286	104	480-851000				3.1	U	SITE	STD	2003-08-10	cam bag
12	27	27	3	287	104	480-851000				3.1	D	SITE	STD	2003-08-10	cam bag
12	28	28	3	288	110	480-851000-98983-12711		93K.052	52520	1	U	SITE	STD	2003-08-10	cam bag
13	1	1A	3	289	105	480-851000				4	U	SITE	STD	2003-08-10	cam bag
13	2	2A	3	290	105	480-851000				4	D	SITE	STD	2003-08-10	cam bag - dewatering in features
13	3	3A	3	291	113	480-856600				2	U	SITE	STD	2003-08-11	cam bag
13	4	4A	3	292	113	480-856600				2	D	SITE	STD	2003-08-11	cam bag
13	5	5A	3	293	114	480-858600				1	U	SITE	STD	2003-08-11	cam bag
13	6	6A	3	294	114	480-858600				1	D	SITE	STD	2003-08-11	cam bag
13	8	8A	3	295	117	480-858600-44923		93K.052	52527	1	U	SITE	STD	2003-08-11	cam bag

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

Roll #	Frame #	Neg #	CD #	Image #	site #	WSC	Gazetted/Local Name	ILP Map	ILP	Reach	Dir	Owner	Focal Length	Date	Scale/Comment
13	9	9A	3	296	117	480-858600-44923		93K.052	52527	1	D	SITE	STD	2003-08-11	cam bag
13	10	10A	3	297	115	480-858600				6	U	SITE	STD	2003-08-11	MJ - falls in features
13	11	11A	3	298	115	480-858600				6	U	SITE	STD	2003-08-11	cam bag
13	12	12A	3	299	115	480-858600				6	D	SITE	STD	2003-08-11	SR
13	13	13A	3	300	116	480-858600-15000				2	U	SITE	STD	2003-08-12	cam bag
13	14	14A	3	301	116	480-858600-15000				2	D	SITE	STD	2003-08-12	cam bag
13	15	15A	3	302	118	480-863300-14300				1	BD	SITE	STD	2003-08-12	cam bag
13	16	16A	3	303	96	480-818600-91997		93K.051	51500	1	U	SITE	STD	2003-08-12	boot
13	17	17A	3	304	95	480-818600				3	U	SITE	STD	2003-08-12	cam bag
13	18	18A	3	305	95	480-818600				3	D	SITE	STD	2003-08-12	dog


R7F15 WSC 480-830238
Reach 1 Site 99 - u/s view


R7F16 WSC 480-842938
Reach 1 Site 100 - across view


R7F17 WSC 480-847187
Reach 1 Site 101 - u/s view


R7F18 WSC 480-847907
Reach 1 Site 102 - u/s view


R7F19 WSC 480-848269
Reach 1 Site 103 - u/s view


R7F20 WSC 480-852091 Reach 1 Site 111 - u/s view


R7F21 WSC 480-856600 Reach 1 Site 112 - u/s view


R7F22 WSC 480-856600 Reach 1 Site 112 - d/s view

R7F23 WSC 480-868855 Reach 1 Site 119 - u/s view

R7F24 WSC 480-876894 Reach 1 Site 124 - u/s view

R7F25 WSC 480-876893 Reach 1 Site 124 - d/s view

R8F1 WSC 480-873626 Reach 1 Site 123 - u/s view

R8F2 WSC 480-873625 Reach 1 Site 123 - d/s view

R8F3 WSC 480-873627 Reach 1 Site 123 - u/s view

R8F4 WSC 480-870718 Reach 1 Site 122 - u/s view

R8F5 WSC 480-870717 Reach 1 Site 122 - d/s view


R8F6 WSC 480-870326 Reach 1 Site 121 - stream bed view

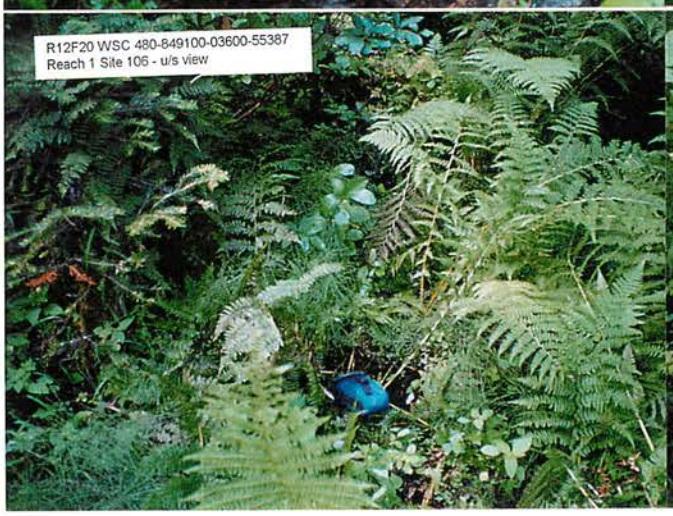

R8F7 WSC 480-869799 Reach 1 Site 120 - d/s view


R12F16 WSC 480-825200 Reach 7 Site 97 - u/s view


R12F17 WSC 480-825200 Reach 7 Site 97 - d/s view


R12F18 WSC 480-825200 Reach 14 Site 98 - u/s view

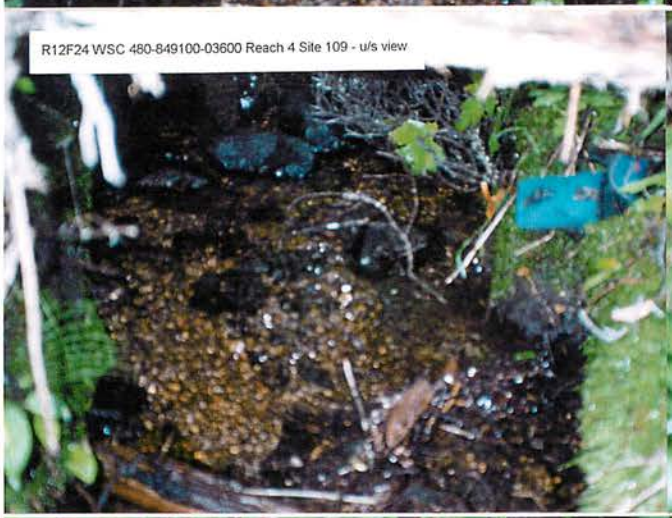

R12F19 WSC 480-825200 Reach 14 Site 98 - d/s view


R12F20 WSC 480-849100-03600-55387
Reach 1 Site 105 - u/s view


R12F21 WSC 480-849100-03600-59045
Reach 1 Site 107 - u/s view


R12F22 WSC 480-849100-03600 Reach 3 Site 108 - u/s view


R12F23 WSC 480-849100-03600 Reach 3 Site 108 - d/s view


R12F24 WSC 480-849100-03600 Reach 4 Site 109 - u/s view


R12F25 WSC 480-849100-03600 Reach 4 Site 109 - d/s view


R12F26 WSC 480-851000 Reach 3.1 Site 104 - u/s view


R12F27 WSC 480-851000 Reach 3.1 Site 104 - d/s view


R12F28 WSC 480-851000-98983-12711
Reach 1 Site 110 - u/s view


R13F1 WSC 480-851000 Reach 4 Site 105 - u/s view


R13F2 WSC 480-851000 Reach 4 Site 105 - d/s view

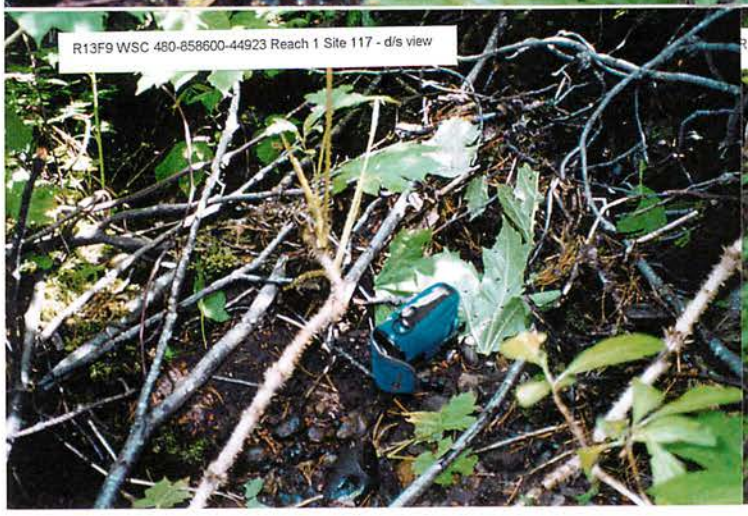

R13F3 WSC 480-856600 Reach 2 Site 113 - u/s view


R13F4 WSC 480-856600 Reach 2 Site 113 - d/s view


R13F5 WSC 480-858600 Reach 1 Site 114 - u/s view

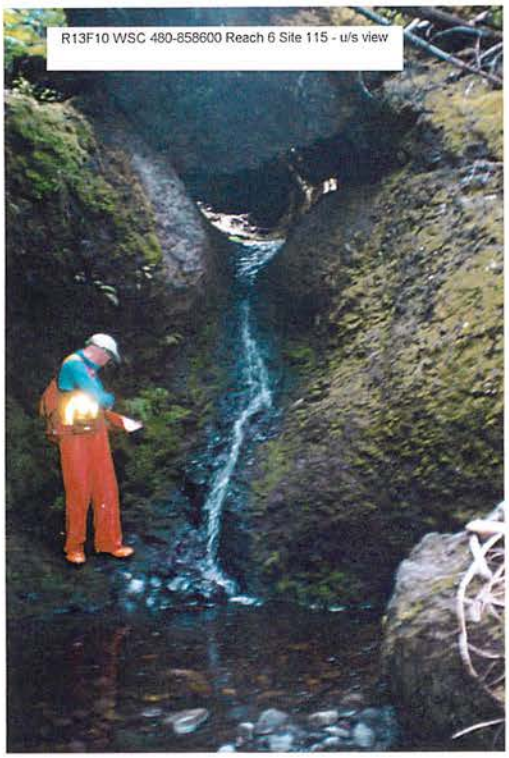

R13F6 WSC 480-858600 Reach 1 Site 114 - d/s view


R13F8 WSC 480-858600-44923 Reach 1 Site 117 - u/s view


R13F9 WSC 480-858600-44923 Reach 1 Site 117 - d/s view


R13F11 WSC 480-858600 Reach 6 Site 115 - u/s view


R13F12 WSC 480-858600 Reach 6 Site 115 - d/s view


R13F10 WSC 480-858600 Reach 6 Site 115 - u/s view


R13F13 WSC 480-858600-15000 Reach 2 Site 116 - u/s view


R13F14 WSC 480-858600-15000 Reach 2 Site 116 - d/s view


R13F15 WSC 480-863300-14300
Reach 1 Site 118 - stream bed view


R13F16 WSC 480-818600-91997
Reach 1 Site 96 - u/s view


R13F17 WSC 480-818600
Reach 3 Site 95 - u/s view


R13F18 WSC 480-818600
Reach 3 Site 95 - d/s view

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

Resampling in the Pendleton Sub-unit 2003/04

- **Appendix III: Hardcopy Maps**