# 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:

**Babine Forest Products Co.** 

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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 (km²) 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 Reaches203Random Sample Reaches0Discretionary Sample Reaches30Total Sample Reaches30% of Reaches Sampled14.6

Field Sampling Dates July 16 – Aug 12, 2003

# **Contractor Information**

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## **Disclaimer**

This product has been accepted as being in accordance with approved standards within the limits of Ministry quality assurance procedures. Users are cautioned that interpreted information on this product developed for the purposes of the Forest Practices Code Act and Regulations, for example stream classifications, 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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# **List of Attachments**

#### Attachment I Field Notes

Site Cards/Fish Collection Forms/Individual Fish Data Forms

# Attachment II Photo documentation

- Photodocumentation Form 1
- Photo Summary Report
- 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.



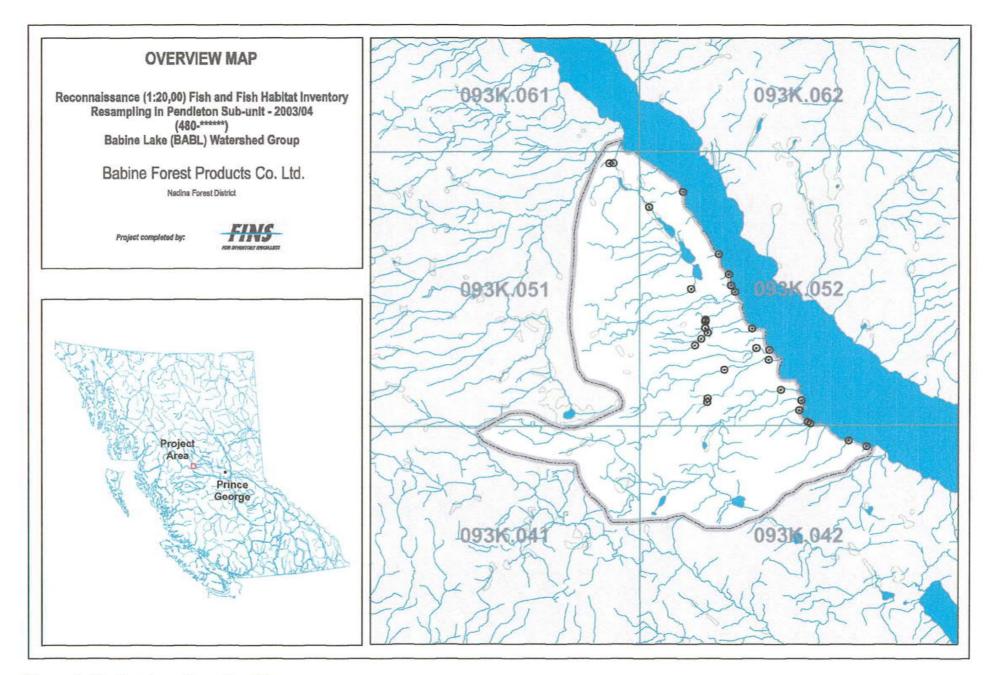


Figure 1: Project Area Overview Map.



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	I	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	CORB	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 (gradient (%) to top of falls)/(gradient (%) to bottom of falls) + Ho

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

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

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

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)		Verified in Field?	
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 1<sup>st</sup> and 2<sup>nd</sup> order streams were absorbed within the terrace or its slopes. The 3<sup>rd</sup> 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 3<sup>rd</sup> order and larger tributaries to Babine Lake. In some of the 2<sup>nd</sup> order tributaries, accessible and usable seasonal rearing habitat was present near the mouth, while the 1<sup>st</sup> 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)
		CAS	J	1	64	64	6
	480-*****	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.



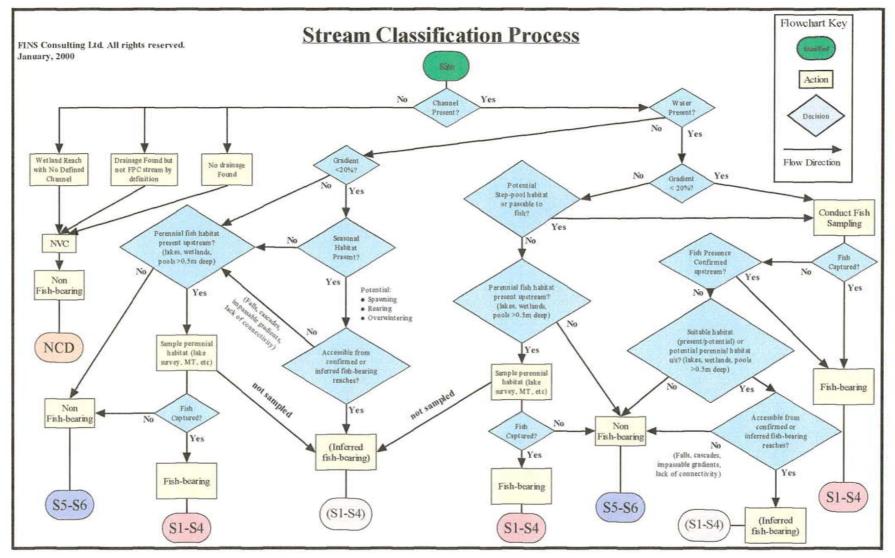


Figure 2: Flowchart of the stream classification process used in determining fish-bearing status of surveyed reaches

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	<u>\$4</u>	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	83	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	<b>S</b> 6	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	<b>S</b> 6	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).

					Reac	h Size C	lass						
Reach Gradient	Reach Pattern		Small <sup>st</sup> order)			Medium nd 3 <sup>rd</sup> or	der)	(4 <sup>th</sup> and	Large (4 <sup>th</sup> and higher order)				
Class	Type	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:	Su	mm	ary of d	lata	from	surv	eyec	l non-	-fish	bear	ing i	reach	ies ii	n tri	but	arie	s in	th	e Po	endl	eton	Suk	o-unit.
				»	adient	Depth	C Spp.	SSI		Samj	pling S <sub>I</sub>	pecifica	itions		Str	eam C	ondit	ions	S	amplii	ed His ng Res 003 D		
Watershed Code/ILP	Reach	Site	Date	Average CW (m)	Average Gradient (%)	Average Wb Depth (m)	Expected FPC Spp.	FPC Class	Method	EF Distance (m)	EF Time	Voltage (V)	Frequency (Hz)	Pulse Width (µsec)	Flow Stage	Water Temp (°C)	Conductivity (uS/cm)	Turbidity	Gradient Group	Pattern Group	Order	Fish Capture (%)	Comments
480-818600	3	95	12-Aug-03	1.4	6.0	0.27	RB	<b>S</b> 6	EF	150	294	400	80	6	L	13	60	С	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	С	1	SSI	М	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	\$6	EF	150	313	400	80	6	L	12	210	С	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		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:	Su	mm	ary of d	lata	from	surv	eyec	l non-	fish	bear	ing 1	reach	es ii	n tril	but	arie	s in	th	e Po	endl	eton	Sub	-unit.
				CW.	adient	Depth	C Spp.	SSI		Sampling Specifications			Str	eam C	ondit	ions	S	amplii	ed His ng Res 003 D				
Watershed Code/ILP	Reach	Site	Date	Average CW (m)	Average Gradient (%)	Average Wb Depth (m)	Expected FPC Spp.	FPC Class	Method	EF Distance (m)	EF Time	Voltage (V)	Frequency (Hz)	Pulse Width (µsec)	Flow Stage	Water Temp (°C)	Conductivity (uS/cm)	Turbidity	Gradient Group	Pattern Group	Order Group	Fish Capture (%)	Comments
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	\$6							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		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	С	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	\$6	EF	100	48	500	80	6	L	9	80	С	3	SSI	М	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	<b>S</b> 6							L				2	SSI	М	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	С	2	SSI	М	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:	Su	mm	ary of d	lata	from	sur	veyed	l non-	-fish	bear	ing	react	ies i	n tri	but	arie	s in	th	e Po	end	leton	Sub	o-unit.
				CW	adient	Depth	C Spp.	SS	-	Sampling Specifications Stream Conditions Sampling				Categorized Historical Sampling Results (1996-2003 Data)									
Watershed Code/ILP	Reach	Site	Date	Average (m)	Average Gradient (%)	Average Wb (m)	Expected FPC	FPC Class	Method	EF Distance (m)	EF Time	Voltage (V)	Frequency (Hz)	Pulse Width (µsec)	Flow Stage	Water Temp (°C)	Conductivity (uS/cm)	Turbidity	Gradient Group	Pattern Group	Order Group	Fish Capture (%)	Comments
480-858600- 15000	2	116	12-Aug-03	2.1	4.5	0.43	RB	\$6							L				2	SSI	М		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	<b>S</b> 6							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	<b>S</b> 6	EF	100	78	500	80	6	L	11	90	С	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	<b>S</b> 6	EF	100	264	500	80	6	L	11	80	С	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	С	2	SSI	s		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
С	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
СН	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	pН	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	RSS	Regionally significant species
	Inventory		
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	Т	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	изес	Microseconds
M	Moderate flow, moderate turbid or medium size stream	μS	Microsiemens
MELP	Ministry of Environment, Lands and Parks	°C	Temperature
·	Millimeter	%	Slope gradient
MSRM		100	Diope Branient
MSKW	Ministry of Sustained Resource Management	1	<u> </u>

# 7. List of Appendices

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

Appendix II: **Photographs** 

Hardcopy Maps **Appendix III:** 

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

Resampling in the Pendleton Sub-unit 2003/04

• Appendix I: FDIS Reach/Site Summaries

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC:

		FEREN	

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**Gazetted Name:** Local Name: Reach #: Site #:

WSC: 480-818600

ILP: ILP Map:

#### REACH INFORMATION

Reach UTM (ZEN): 10.317656.6053473. Setting: MP Air Photo #: BCC96154: 16 BEC Zone: SBS Order: 1 US Elevation (m): 805 Length (km): 0.40 Floodplain Width (m): None Magnitude: DS Elevation (m): Gradient (%): Open Water: A Bars: 3.75 Channel Pattern: IR PC

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

COVER

Type: SWD LWD В C DP ov LB SHP: RB SHP: Cover IV V s Amount: Ν N Ν LB Tex: F **RB** Tex: F Total: LB RIP: Loc P/S/O: D RB RIP: D

Canopy: 41-70% LWD Distr: F/F ISV (NAMV): LB STG: MF RB STG: MF

#### MORPHOLOGY

Bed Subst Dom: D (cm): 2 Morph: Pattern: Si Confinement: OC Coupling: PC Bed Subst Subdom: D90 (cm): 30 Disturb: Islands: N Bars:

#### FEATURES

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

#### SAMPLING SPECIFICATIONS

Capture	EF	EF distance	Voltage	Frequency	Pulse	Species	Life	Total	Min Length	Max Length	Activity
Method	(sec)	(m)	(V)	(Hz)	(µs)		Stage	Fish	(mm)	(mm)	
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	None.
habitat	
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.

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

					W.	AIEKS	HED F	EFER	ENCI	NG				
			_		Loca	al Name:				Rea	ich #: 1	Site	#: 96	
LP:	30-81860	0-9199 515			ILP I	Map: 93K	.051							
							H INF	ORMA	TION					
Reach UTI	M (ZEN):	10	.318244	.605316	2.	Air Photo	#: BCC9	6154: 16	************	***************************************	Setting: MP	BEC Z	one: SBS	**************************************
	Order:	1			tion (m):			th (km):	0.38		Floodplain	Width (m): I	None	
Channel	gnitude: Pattern:	1 SI	ט		tion (m): oupling:			ient (%): ırbance:	5.26		Open Wate Rip	r: A Ba √Veg:Mi	rs: N	
Confi	nement:	FC		Va	lev Flat:	B-D		islands:	N		Land	Use: NO		
						SITE	REF	RENC	ING					
Site Leng		10			ess: FT		ate: 2003		Time:		Fish Card:		Class:	NCD
NID NID I		309 093K.	-			•	18074.6053 18075.6053		_	y Code SR/MJ	•	ncy Name: F	INS Consu	ling Lid
						-	CHAI	200000000000000000						
	Channe					Flow Stage	):	Flo	od Sign:	<b>5:</b>		Te	mp /C/:	************
	annel Wi Vetted Wi			Δν		ol Depth (m) il Depth (m)		Avg Gra	dient (% Turbidity	•		Condi	pH: activity:	
Avg v	velled vv	ium (ii	• <b>/</b> -		y Dankiu	ii Deptii (iii)	COI		i di Didit	/•		Condi	ictivity.	
Cover			Type:	SWD	LWD	В	C DF		IV	7 .	.B SHP:	RB SH	ı <b>p</b> .	
Total:		$\overline{}$	mount:	3110			0 0,		10	<b>⊣</b>	B Tex:	RB Te		
Canop	w.	Loc	P/S/O:	LWD	Distr-		ISV	(NAMV):		_	LB RIP: .B STG:	RB R RB ST		
	· <b>y</b> ·					N.	ORPH		Y	•			<b>-</b> .	
Red	Subst D	om.	*********	D (c	·m)-		r <b>ph</b> :		ttern:	2020000000000	Confinen	nent:	Couplin	**************************************
	ost Subd			D90 (c	-	Dist	•		ands:		Bars:	ilent.	Couping	4.
							FEAT	URES						
NID MAP	NID 1	Гуре	Height	_	Photo		(	Comment			GIS U	TM (ZEN)	Field UTM	(ZEN)
			(m)	(m)										
											1	1		
					SA	MPLIN	IG SPI	CIFIC	ATIO	) N S				
[6	Capture	EF	EF di	stance	S A		IG SP	E C I F I C	ATIC	) N S Total	Min Length	Max Length	Activity	
1	Capture Method	EF (sec	1	istance (m)				· · · · · · · · · · · · · · · · · · ·		100000000000000000000000000000000000000	Min Length (mm)	Max Length (mm)	Activity	
1	•	1	1		Voltage	Frequer	ncy Pulse	· · · · · · · · · · · · · · · · · · ·	Life	Total	_	1	Activity	
1	•	1	1		Voltage	Frequer	Pulse (µs)	Species	Life	Total	_	1	Activity	
1	•	1	1		Voltage	Frequer	ncy Pulse	Species	Life	Total	_	1	Activity	
Ow	Method	(sec	) ( Frame #	m)	Voltage (V)	Frequer (Hz)	Pulse (μs)	Species	Life	Total Fish	_	1	Activity	
Ow	Method	(sec	)   (	m)	Voltage (V)	Frequer (Hz)	Pulse (µs)	Species	Life	Total Fish	(mm)	1	Activity	
Ow	Method	(sec	) ( Frame #	m)	Voltage (V)	Frequer (Hz)	Pulse (μs)	Species	Life	Total Fish	(mm)	1	Activity	
Ow	Method	(sec	) ( Frame #	m)	Voltage (V)	Prequer (Hz)  Direction	PHO	Species T O S	Life Stage	Total Fish	(mm)	1	Activity	
O <sub>M</sub> Si	wner Ro	(sec	) ( Frame #	m)	Voltage (V)	Prequer (Hz)  Direction	Pulse (μs)	Species T O S	Life Stage	Total Fish	(mm)	1	Activity	
Ow Si Overwinter habitat	wner Ro	(sec	) ( Frame #	m)	Voltage (V)	Prequer (Hz)  Direction	PHO	Species T O S	Life Stage	Total Fish	(mm)	1	Activity	
Overwinter habitat Rearing	wner Ro	(sec	) ( Frame #	m)	Voltage (V)	Prequer (Hz)  Direction	PHO	Species T O S	Life Stage	Total Fish	(mm)	1	Activity	
Overwinter habitat Rearing habitat Spawnin	wner Ro	(sec	) ( Frame #	m)	Voltage (V)	Prequer (Hz)  Direction	PHO	Species T O S	Life Stage	Total Fish	(mm)	1	Activity	
Overwinter habitat Rearing habitat Spawnin habitat	wner Ro	(sec	Frame # 16	Focal S	Voltage (V)	Direction U HAB	PHO boot	TOS	Life Stage	Total Fish	nment	(mm)		ential
Overwinter habitat Rearing habitat Spawnin	vner Ro	(sec	Frame # 16	Focal S	Voltage (V)	Direction U HAB	PHO boot	TOS	Life Stage	Total Fish	nment	1		ential.

Site = "mouth"

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

azetted f	Name:				Loca	al Name:	Sag C	3.			Rea	ach #:	7		Site	#:	97
/SC: 48 .P:	80-8252	200			ILP	Man:											
••					<b>16.</b> )		СН	INF	ORMA	TION							
•	Order gnitude	: 3 e: 13		S Eleval S Eleval	tion (m): tion (m):	Air Pho 796 795	Arrest Control Control	BCC96 Leng Gradi	6049: 44 jth (km): ient (%):	0.60 0.17	;	Setting: Floodpl Open W	ain W /ater:	/idth ( P	В:	one: None ars:	SBS N
hannel l Confi	rattern nemeni				oupling: lev Flat:				ırbance: İslands:	OIBIC <sup>2</sup>	•	L	Rip ۱ and ۱	/eg: Jse:	S NO		
						SIT	E R	EFE	RENC	ING							
Site Leng NIC NID I	<b>D</b> :	30	00 097 K.052	GI	•	ZEN): 10.3 ZEN): 10.3	319444 319445	.60516	629			Fish Ca : C016		Y cy Na		C Clas	
Avg Ch Avg W	Chann annel V /etted V	Vidth (	m): 4.5	Av	_	Flow Stag of Depth (n If Depth (n	n): 0. n): 0.6	.5	Avg Gra	od Sign: dient (% Furbidity	): 0.5					•	d: 12 d: 8.10 y: 80
Cover			Туре:	SWD	LWD	В	С	DP		IV	<b>⊣</b>	LB SHP:	s		RB SI		s
Total:	Α	\—	Amount: oc P/S/O:	N	N	N	N	D	S	S	-	LB Tex: LB RIP:	F		RB T		F S
Canop	v: 21		JC 17370.		1	11		-,			→ .					<b>.</b>	•
	Subst		F NA		: <b>m):</b> 0.	01 M	orph: sturb:	R P H LC O1	OLOG Pa	AMV Y ttern: ands:	IR O	LB STG: Confl Bars:		ent:	RB ST		NA .pling: D
Bed Bed Sub	Subst	Dom: odom:	NA Helght	D (c D90 (c Length	:m): 0. :m): 0.	01 <b>M</b>	orph: sturb:	RPH LC O1	OLOG Pa Isl	Y ttern:	IR	Confi Bars:	neme N	ent:	UN	Cot	NA ıpling: D UTM (ZEI
Bed Sub	Subst ost Sub	Dom: odom:	NA	D (c	:m): 0. :m): 0.	01 <b>M</b>	orph: sturb:	RPH LC O1	OLOG Pa Isi URES	Y ttern:	IR	Confi Bars:	neme N	ent:	UN	Cot	ıpling: D
Bed Sub	Subst ost Sub	Dom: odom:	NA Helght	D (c D90 (c Length	:m): 0: :m): 0. Photo	01 M 10 Dis	orph: sturb: F I	RPH LC O1 EAT	OLOG Pa Isl URES Comment	Y ttern: ands:	IR O	Confi Bars:	neme N	ent:	UN	Cot	ıpling: D
Bed Sub	Subst ost Sub NID	Dom: odom: Type	NA Height (m) F EF d	D (c D90 (c Length (m)	em): 0. em): 0. Photo	01 M 10 Dis	orph: sturb: F E N:G	RPH LC O1 EAT C	OLOG Pa Isi URES	ttern: ands:	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	ıpling: D
Bed Sub	Subst ost Sub NID	Type	Height (m)	D (c D90 (c Length (m)	em): 0.:m): 0.  Photo	01 M 10 Dis	orph: sturb:  Fi  NG ency	RPH LC O1 EAT C	OLOG Pa Isl URES Comment	Y ttern: ands:	IR O	Confl Bars:	S UT	ent: I M (ZE	UN	Cot	upling: D
D MAP	Subst ost Sub NID Capture Metho	Type	Height (m)	D (c D90 (c Length (m) istance (m)	em): 0. em): 0. Photo S I Voltage (V)	01 M 10 Dis	orph: sturb:  Fi  NG ency	LC O1 EAT CO	OLOG Pa Isl URES Comment  ECIFIC Species	ttern: ands:	IR O O N S Total Fish	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP	Subst ost Sub NID Capture Metho	Type	Height (m)	D (c D90 (c Length (m) istance (m)	em): 0. em): 0. Photo S I Voltage (V)	01 M 10 Dis	N G	COLUMN SPE Pulse (µs)	OLOG Pa Isl URES Comment  ECIFIC Species	ttern: ands:	IR O O N S Total Fish	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP	Subst ost Sub NID Capture Metho	Dom: odom:  Type  e El d (se	Height (m)	D (c Ds0 (c Length (m) istance (m)	em): 0. em): 0. Photo S I Voltage (V)	01 M 10 Dis	orph: sturb:  F i  N G ency   z)	COLUMN SPE Pulse (µs)	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands:	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP	Subst	Type  Type  E E (sc / 26	Height (m)  F EF dec)  Frame #	D (c D90 (c D90 (c) Length (m) istance (m) 150	Photo  Photo  Voltage (V) 500  Length	01 M 10 Dis	NG ency	CO1 EAT: CO2 SPE Pulse (µs) 6	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands:	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP	Subst	Type  Type  Golf #	Height (m)  F EF dec) Frame#	D (c D90 (c D90 (c) Length (m) istance (m) 150	Photo  Photo  S I  Voltage (V) 500	01 M 10 Dis	NG ency	COLUMN SPE Pulse (µs)	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands:	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP	Subst	Type  Type  E E (sc / 26	Height (m)  F EF dec)  Frame #	D (c D90 (c D90 (c) Length (m) istance (m) 150	Photo  Photo  Voltage (V) 500  Length	O1 M 10 Dis	N G ency	SPE CO1 SPE Pulse (µs) 6	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands: ATIC Life Stage	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP Ow Si Si	Subst pst Subst Su	Type  e E (second # 12 12 12	Height (m)  F EF dec)  Frame #	D (c D90 (c D90 (c) C D90	Photo S. J. Voltage (V) 500  Length TD	O1 M 10 Dis	N G ency	SPE CO1 SPE Pulse (µs) 6	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands: ATIC Life Stage	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
D MAP Owerwinte habital Rearing	Subst pst Subst pst Subst Subs	Type  e E (second # 12 12 12	Height (m)  Feb EF d ac) 38  Frame # 16 17	D (c D90 (c D90 (c) C D90	Photo S. J. Voltage (V) 500  Length TD	O1 M 10 Dis	N G ency	SPE CO1 SPE Pulse (µs) 6	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands: ATIC Life Stage	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D
Downwinte habitat	Subst pst Subst Su	Type  e E (second # 12 12 12	Height (m)  Feb EF d ac) 38  Frame # 16 17	D (c D90 (c D90 (c) C D90	Photo S. J. Voltage (V) 500  Length TD	O1 M 10 Dis	N G ency	SPE CO1 SPE Pulse (µs) 6	OLOG Pa Isl URES Comment  ECIFIC Species NFC	ttern: ands: ATIC Life Stage	IR O	Confi Bars:	S UT	ent: I M (ZE	UN EN) Lengti	Cot	upling: D

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

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC:

		R											

**Gazetted Name:** Local Name: Sag C. Site #: Reach #:

WSC: 480-825200

ILP: ILP Map:

#### REACH INFORMATION

Reach UTM (ZEN): 10.320683.6048015. Air Photo #: BCC96049: 84 Setting: MP BEC Zone: 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: Coupling: Channel Pattern: Si DC Rip Veg: C Disturbance:

Confinement: OC Valley Flat: B/C Islands: N Land Use: OT

#### SITE REFERENCING

Site Length (m): FPC Class: 150 Access: FT Date: 2003-08-11 Time: 1015 Fish Card: Agency Code: C016 Agency Name: FINS Consulting Ltd. NID: 3098 GIS UTM (ZEN): 10.321011.6048237

NID Map: 093K.052 Field UTM (ZEN): 10.321009.6048240. Crew: SR/MJ

#### CHANNEL

Channel Status: Flood Signs: Rafted debris Flow Stage: 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: Conductivity: 210 COVER

RB SHP:

## Type: SWD LWD B C DP OV IV

Cover _	Type:	SWD	LWD	В	С	DP	OV	IV	LB SHP:	s	RB SHP:	٧
Total: T	Amount:	T	Т	N	Т	D	S	N	LB Tex:	FG	RB Tex:	FG
	Loc P/S/O:	P	Р		Р	P	Р		LB RIP:	С	RB RIP:	С
Canopy:	41-70%	LWD	Distr:	F/E		ISV (NA	AMV):	N	LB STG:	SHR	RB STG:	SHR

#### MORPHOLOGY

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

#### **FEATURES**

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

#### SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage	1	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.

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

				MA	TERS	HED	REFER	ENCI	NG					
Gazetted Name: NSC: 480-83023	8			Local	Name:				Rea	<b>ch#:</b> 1	Site	Site #: 99		
_P:	52508			ILP M	lap: 93K.	052								
					REAC	H INF	ORMA	TION						
Reach UTM (ZEN): Order: Magnitude: Channel Pattern: Confinement:	1 1 SI	US	0.6052193. US Elevation (m): DS Elevation (m): Coupling: Valley Flat:		760	Gra	96049: 45 gth (km): dient (%): turbance: Islands:	0.22 20.9 N	s	Open Wa	n Width (m):	one: SBS None ars: N		
					SITE	REF	ERENC	ING						
Site Length (m): NID: NID Map:	100 3099 093K.05	2	GI	-	EN): 10.32	Date: 200 20844.6052 20845.6052 CHA	2190			Fish Card : C016 A	i: N FP gency Name: F		NCD Iting Li	
Channe Avg Channel W Avg Wetted W		NVC		Avg Pool	Flow Stage Depth (m) Depth (m)	<b>)</b> :	Avg Gra	od Signs dient (% Turbidity	):			emp /C/: pH: uctivity:		
						CO	VER							
Cover Total:		unt:	SWD	LWD	В	C D	P OV	IV	i	.B SHP: .B Tex: LB RIP:	RB SI RB To RB F	ex:		
Canopy:	LOC PI	3/0.	LWD	Distr:		ISI	/ (NAMV):		_	B STG:	RB S			
					ħ	AORPI	10L0G	Υ						
Bed Subst D Bed Subst Subs			D (c D90 (c	-	Moi Dist	rph: urb:		attern: lands:		Confine Bars:	ement:	Coupling	<b>j</b> :	
						FEAT	TURES							
NID MAP NID	Type He	ight i m)	Length (m)	Photo	Comment					GIS	UTM (ZEN)	Field UTM (ZEN		
				SA	MPLII	VG SP	ECIFIC	CATIO	) N S					
Capture		ananananan	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			************							ı	
Method			stance m)	Voltage (V)	Frequer (Hz)	- 1		Life Stage	Total Fish	Min Lengt (mm)	h Max Lengti (mm)	h Activity		
	1 1					- 1		1			_	h Activity		
	1 1					) (µs)		1			_	h Activity		
Method Owner Ro	oll # Fra	( ime #	m)	(V)	(Hz)	PH(	) '	1	Fish		_	h Activity		
Method	oll # Fra	(	m)	(V)	(Hz)	PH(	) '	1	Fish	(mm)	_	h Activity		
Method Owner Ro	oll # Fra	( ime #	m)	(V)	(Hz)	PH(	) '	1	Fish	(mm)	_	h Activity		
Method Owner Ro	oll # Fra	( ime #	m)	(V)	Direction	PH (	) '	Stage	Fish Con	(mm)	_	h Activity		
Owner ReSITE	oll # Fra	( ime #	m)	(V)	Direction	PH (	entos	Stage	Fish Con	(mm)	_	h Activity		
Owner Rough SITE  Overwintering habitat  Rearing habitat	oll # Fra	( ime #	m)	(V)	Direction	PH (	entos	Stage	Fish Con	(mm)	_	h Activity		
Owner Rouse SITE  Overwintering habitat  Rearing	oll # Fra	( ime #	m)	(V)	Direction	PH (	entos	Stage	Fish Con	(mm)	_	h Activity		

Site = UTM = "mouth"

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

				W	ATER	SHE	D R	EFER	ENCI	NG						
Gazetted Name: WSC: 480-8429	38			Loca	al Name:					Rea	sch #:	1	Site	#: 100		
ILP:	525	10		ILP I	Map: 93		00000000000	****************			000000000000000000000000000000000000000	555500000000000000000000000000000000000		*************	•••••	
					REA	CH	INF	AMAC	TION							
Reach UTM (ZEN Order Magnitude Channel Pattern Confinement	: 1 : 1 : SI	U	S Eleva C	4. tion (m): tion (m): oupling: lley Flat:	803 714	oto#:	Leng Gradi Distu	6049: 82 th (km): ent (%): rbance: slands:	0.53 16.8 N	;		in Width	À Bai C	lone	5	
					SIT	E R	EFE	RENC	ING							
Site Length (m): NID: NID Map:	100 310 093K.	0	G	ess: B IS UTM (2 Id UTM (2		322192 322192	.60495	95 95.	_		Fish Car : C016 A	***		Class: NS Consu	NCD Iting Ltd	
Chann Avg Channel W Avg Wetted W	/idth (m	•			Flow Sta	ge: n):	H ASN	Avg Grad	od Signs lient (% Furbidity	):				mp /C/: pH: ctivity:		
		·,·		y Janka	. Вер (.	seeneeneene	cov		· u. biuit	, . 		000000000000000000000000000000000000000	Conda	cuvity.		
Cover Total:		Type: mount:	SWD	LWD	В	С	DP	OV	IV	_	_B SHP: LB Tex:		RB SH			
Canopy:	Loc	P/S/O:	LWD	Distr:	1		ISV (	NAMV):	1	_	LB RIP: LB STG:		RB RI			
						MOF	<b>RPH</b> (	) LOG	f							
Bed Subst I Bed Subst Sub			D (c	•		orph: sturb:			ttern: ands:		Confin Bars:	ement:		Couplin	g:	
				, , , , , , , , , , , , , , , , , , , ,		Fi	AT	JRES								
NID MAP NID	Type	ype Height Length Photo (m) (m)			Comment						GIS UTM (ZEN)			Field UTM (ZEN)		
		1		SA	MPLI	NG	SPE	CIFIC	ATIC	NS						
Capture Method		. 1	istance (m)	Voltage (V)	Freque (H:		Pulse (µs)	Species	Life Stage	Total Fish	Min Lengt (mm)	1	Length mm)	Activity		
	<u> </u>															
						F	HO.	ros								
Owner R		rame #		Length			Comme					ent				
SITE	7	16	S	TD	X cam bag											
					HAE	LITA	T C	OMME	NTS						]	
Overwintering habitat																
Rearing habitat																
Spawning habitat																
Other No	ne - no	channel	, no wate	er.												
habitat																

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

## BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

					W	ATEF	RSHE	D RE	FER	ENCI	NG					
Gazetted WSC: 4	Name:	87			Loca	il Name	:				Rea	ich #:	1	S	ite #:	101
ILP:	100-047 1	525	11		ILP I	Vlap: 9	3K.052									
						RE	ACH	INFO	RMA	TION						
Channel	Order agnitude	: 1 :: 1 :: SI	U	S Eleva C	0. tion (m): tion (m): oupling: lley Flat:	790 714	noto #:	BCC960- Length Gradier Disturb	(km): nt (%):	0.44 17.3 N	S	Open V	lain Wie Vater: Rip Ve	dth (m):	Zone Non Bars:	
						SI	TE F	EFEF	RENC	ING						
	gth (m): ID: Map:	10/ 310 093K.	)1	G	•	-	).322563 ).322563	2003-07 3.6048770 3.6048770 HANN	) ).	_				-	FPC C FINS	lass: NCD Consulting Ltd
_	Chann hannel V Vetted V	Vidth (m	•		Avg Poo g Bankful		(m):	COVE	lvg Grad	od Signs dient (% Furbidity	):				Temp nducti	pH:
Cover			Type:	SWD	LWD	В	С	DP	OV	IV	 ا	.B SHP:	888888888888888888888888888888888888888	RB	SHP:	
Total:			mount: P/S/O:					-			_	B Tex: LB RIP:			Tex:	
Cano	ру:		1700.	LWD	Distr:		1	ISV (N	AMV):		_	B STG:			STG:	
							MOI	RPHO	FOG.	Ψ						
	i Subst ibst Sub			D (c D90 (c	:m): :m):		Morph:			ttern: ands:		Confl Bars:	nemer	it:	C	oupling:
200000000000000000000000000000000000000	*****			,-	,.	_										
							F	EATU	RES							
NID MAP	NID	Туре	Height (m)	Length (m)	Photo		F)	2000000000000000	R E S mment			GI	S UTM	(ZEN)	Fie	ld UTM (ZEN)
NID MAP	NID	Туре	1	_				Coi	mment			GI	S UTM	(ZEN)	Fie	d UTM (ZEN)
NID MAP			(m)	(m)	SA		ING	Coi	mment							
NID MAP	NID Capture Method	e EF	(m)	_		Frequ		Coi	mment	A T I C	INS Total Fish	Gi Min Len (mm)	gth M	(ZEN) lax Leng (mm)		ctivity
NID MAP	Capture	e EF	(m)	(m)	S A	Frequ	I N G	Col	mment	Life	Total	Min Len	gth M	lax Leng		
NID MAP	Capture	e EF	(m)	(m)	S A	Frequ	ING uency lz)	S P E ( Pulse S (µs)	mment	Life	Total	Min Len	gth M	lax Leng		
	Capture	e EF d (sec	(m)	(m)	S.A Voltage (V)	Frequ (H	ING uency Iz)	Col	mment	Life	Total Fish	Min Len (mm)	gth M	lax Leng		
[	Capture	e EF d (sec	(m)	(m) istance (m) Focal	S A	Frequ	ING uency lz)	S P E ( Pulse S (µs)	mment	Life	Total Fish	Min Len	gth M	lax Leng		
[	Capture Method	e EF (sec	(m) EF di )	(m) istance (m) Focal	S A Voltage (V)	Frequency (H	ING uency lz)	SPE(Pulse S (µs)	mment	Life	Total Fish	Min Len (mm)	gth M	lax Leng		
[	Capture Method	e EF (sec	(m) EF di )	(m) istance (m) Focal	S A Voltage (V)	Frequency (F	ING uency lz) I	SPEC Pulse S (µs) S	OS	Life Stage	Total Fish	Min Len (mm)	gth M	lax Leng		
Overwinte	Capture Method	e EF (sec	(m) EF di )	(m) istance (m) Focal	S A Voltage (V)	Frequency (F	ING uency lz) I	SPE(Pulse S (µs)	OS	Life Stage	Total Fish	Min Len (mm)	gth M	lax Leng		
Overwinte habite	Capture Method	e EF (sec	(m) EF di )	(m) istance (m) Focal	S A Voltage (V)	Frequency (F	ING uency lz) I	SPEC Pulse S (µs) S	OS	Life Stage	Total Fish	Min Len (mm)	gth M	lax Leng		
Overwinte habite Rearin habite Spawni	Capture Method	e EF (sec	(m) EF di )	(m) istance (m) Focal	S A Voltage (V)	Frequency (F	ING uency lz) I	SPEC Pulse S (µs) S	OS	Life Stage	Total Fish	Min Len (mm)	gth M	lax Leng		
Overwinte habite Rearin habite	Capture Method	el EF (sec	(m) ) EF di	(m) istance (m) Focal S	S A Voltage (V)  Length	Pirecti U	ING uency lz) I on cam	SPEC Pulse S (µs) S	mment CIFIC Species OS	Life Stage	Total Fish Com	Min Len (mm)	gth M	lax Leng		

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

## BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

					W	ATERS	HED F	REFER	ENCI	NG			
	ed Name: 480-847				Loca	il Name:				Rea	nch #: 1	Site	#: 102
.P:	400-047		2512		ILP	Vlap: 93K	.052						
						REAC	H INF	ORMA	TION				
each (	UTM (ZE Orde	•	0.322286 U		9. tion (m):		o#: BCC9	6049: 82 gth (km):	0.40	;	Setting: VW Floodplain		ne: SBS lone
hann	Magnitud el Patter	m: Si		C	tion (m): oupling:		Dist	ient (%): urbance:	16.5			Veg: C	rs: N
Cor	nfinemei	nt: CC	) *********	Val	lley Flat:	N		isiands:	N	500000000000	Land	Use: NO	
						SITE	**************	RENC	100000000000000000000000000000000000000				
I	ength (m NID: ID Map:	3	00 102 K.052	GI	_	ZEN): 10.32	0ate: 2003 22635.60483 22636.60483	312	_		•		Class: NC NS Consulting
							CHAI	90000000000000000					
_	Channel	Width (	•		Avg Poo	Flow Stage I Depth (m)	):	Avg Gra	-	):			mp /C/: pH:
Avg	Wetted	width (	m):	Av	g Bankfu	l Depth (m)			<b>Furbidit</b> y	<b>y:</b> **********	************	Condu	ctivity:
•	_		<b>T</b>	CIAD	1.145		601		T 10.0	┈┈.	D 011D	DD 611	-
Cove Total	-		Type: Amount:	SWD	LWD	В	C DF	ov ov	IV.	<b>⊣</b> '	_B SHP: LB Tex:	RB SH RB Te:	
Con		Lo	oc P/S/O:	LWD	Dieter		16)4	(NARO).	<u> </u>		LB RIP:	RB RI	
Can	юру:			LWD	Distr.		ISV AORPH	(NAMV):			LB STG:	RB ST	G:
	ed Subsi Subst Su			D (d D90 (d		Moi Disti	rph: urb: FEAT	lsi	ttern: ands:		Confinen Bars:	nent:	Coupling:
D MA	P NID	Туре	Height (m)	Length (m)	Photo		C	Comment			GIS U	TM (ZEN)	Field UTM (ZE
								-					
	Captu	re E	F EF di	istance		M P L I N		CIFIC	ATI0	) N S Total	Min Length	Max Length	Activity
	Captu Metho		- 1	istance (m)	S A Voltage (V)		ncy Pulse	C   F   C	1 1		Min Length (mm)	Max Length (mm)	Activity
		- 1	- 1		Voltage	Frequer	ncy Pulse	1	Life	Total	_		Activity
		- 1	- 1		Voltage	Frequer	ncy Pulse	Species	Life	Total	_		Activity
[	Metho	- 1	- 1	(m)	Voltage	Frequer	Pulse (µs)	Species	Life	Total Fish	_		Activity
[	Metho	od (se	ec) (	(m)	Voltage (V)	Frequer (Hz)	Pulse (µs)	Species	Life	Total Fish	(mm)		Activity
[•	Metho	Roll#	Frame #	(m)	Voltage (V)	Frequer (Hz)	PHO	Species	Life	Total Fish	(mm)		Activity
[	Metho	Roll#	Frame #	(m)	Voltage (V)	Frequer (Hz)	Pulse (μs) PHO no scale	TOS	Life Stage	Total Fish	(mm)		Activity
[	Metho	Roll#	Frame #	(m)	Voltage (V)	Frequer (Hz)	PHO	TOS	Life Stage	Total Fish	(mm)		Activity
[	Owner SITE SITE	Roll#	Frame #	(m)	Voltage (V)	Frequer (Hz)	Pulse (μs) PHO no scale	TOS	Life Stage	Total Fish	(mm)		Activity
verwin habi Rear	Owner SITE	Roll#	Frame #	(m)	Voltage (V)	Frequer (Hz)	Pulse (μs) PHO no scale	TOS	Life Stage	Total Fish	(mm)		Activity
verwin habi	Owner SITE Intering itat itat ining	Roll#	Frame #	(m)	Voltage (V)	Frequer (Hz)	Pulse (μs) PHO no scale	TOS	Life Stage	Total Fish	(mm)		Activity
verwin habi Rear habi Spawi	Owner SITE Intering itat ining itat itat iter ining itat itat ining itat iter ining iter inin	Roll# 7	Frame # 18	Focal S	Voltage (V)	Direction U	PHO no scale	T O S	Life Stage	Total Fish Con	(mm)		

Site = 20m from "mouth"

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

					W.	ATERS	HED F	EFER	ENCI	NG				
Gazetted					Loca	il Name:				Rea	ich #: 1	Site	#: 103	
VSC: LP:	480-84		2513		ILP I	Map: 93K.	.052							
						REAC	H INF	ORMA	TION					
Reach U	JTM (ZI	EN):	10.322277	7.604774	1.	Air Phote	#: BCC9	6049: 82		\$	Setting: VM	/ BEC Z	one: SBS	3
		der: 1			tion (m):			th (km):	0.64		•		None	
m Channe	lagnitu el Patte				tion (m): oupling:	714 CO		ient (%): ırbance:	12.7		Open Wate Rip	er: A Ba oVeg: C	ars: N	
Con	fineme	ent: CC	)	Va	liev Flat:	N		islands:	N	*********	Land	Use: NO		
						SITE	REF	RENC	ING					
Site Le		•	100 103		ess: B	_	ate: 2003		Time:		Fish Card:		C Class:	NCD
	VID: D Map:	_	K.052		•	•	2783.6048 2783.6048		Crew:	-	_	ency Name: F	ino Consu	iling Li
							CHAI	INEL						
	Cha	nnel Sta	itus: NVC	;		Flow Stage	<b>:</b> :	Flo	od Signs	<b>:</b> :		Te	mp /C/:	
		el Width d Width		Δν	_	l Depth (m) I Depth (m)		Avg Gra	dient (%) Turbidity			Condi	pH: uctivity:	
	•••	u vviatii	(1117.		y Dankidi	i Deptii (iii)	CO	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	r ar Diait y	·•		OONG	activity.	
Cove	-	*********	Type:	SWD	LWD	В	C DI	7	IV	7 .	B SHP:	RB SI	<b>:</b> P∙	200000000000
Total:	•		Amount:				5 5.		ļ	] [	LB Tex:	RB Te	ex:	
Cano	ODV:	LL	oc P/S/O:	LWD	Distr:		ISV	(NAMV):			LB RIP: LB STG:	RB R RB S1		
						٨	ORPH		Y					
Вє	d Sub	st Dom:		D (c	:m):	Mo	rph:	Pa	ittern:	agus seguina a cana	Confiner	nent:	Couplin	a:
		ubdom		D90 (d	•	Dist	-	Isl	ands:		D			
											Bars:			
							FEAT		u		bars:			
ID MAF	P NIC	Э Тур	Height	_	Photo							ITM (ZEN)	Field UTM	(ZEN)
ID MAI	P NIC	Э Тур	Height (m)	Length (m)	Photo			URES				ITM (ZEN)	Field UTM	I (ZEN)
ID MAI	P NIC	О Тур	, -	_	Photo			URES				ITM (ZEN)	Field UTM	(ZEN)
ID MAI	P NIC	О Тур	, -	_		MPLIN	(	URES		) N S		ITM (ZEN)	Field UTM	I (ZEN)
ID MAI	Capt	ure E	(m)	(m)	S A	Frequer	IG SP	URES	: ATIC	Total	GIS U	Max Length		I (ZEN)
ID MAI		ure E	(m)	(m)	SA	******	IG SP	URES Comment	ЗАТІС		GISU			(ZEN
ID MA	Capt	ure E	(m)	(m)	S A	Frequer	IG SP	URES Comment	: ATIC	Total	GIS U	Max Length		I (ZEN)
ID MAI	Capt	ure E	(m)	(m)	S A	Frequer	i G S P	URES Comment  COMMENT  Species	: ATIC	Total	GIS U	Max Length		i (ZEN)
	Capt Meti	ure E hod (s	(m)	(m)	S A Voltage (V)	Frequer (Hz)	IG SP	URES Comment  COMMENT  Species	: ATIC	Total Fish	GIS U	Max Length		(ZEN)
[6	Capt	ure E	(m)	(m)	S A	Frequer	i G S P	URES Comment  COMMENT  Species	: ATIC	Total Fish	GIS U	Max Length		I (ZEN)
[6	Capt Meth	ure Endod (s	(m)	(m)	S A Voltage (V)	Frequer (Hz)	IG SP	URES Comment  COMMENT  Species	: ATIC	Total Fish	GIS U	Max Length		(ZEN)
[6	Capt Meth	ure Endod (s	(m)	(m)	S A Voltage (V)	Frequer (Hz)	IG SP	URES Comment  COMMENT  Species	: ATIC	Total Fish	GIS U	Max Length		I (ZEN
[6	Capt Meth	ure Endod (s	(m)	(m)	S A Voltage (V)	Prequer (Hz)  Direction	IG SP	URES Comment  CIFIC Species TOS	: A T I C	Total Fish	GIS U	Max Length		J (ZEN)
Q	Capt Metring Commer SITE	ure Endod (s	(m)	(m)	S A Voltage (V)	Prequer (Hz)  Direction	PHO	URES Comment  CIFIC Species TOS	: A T I C	Total Fish	GIS U	Max Length		]
[ -	Capt Meti Dwner SITE	ure Endod (s	(m)	(m)	S A Voltage (V)	Prequer (Hz)  Direction	PHO	URES Comment  CIFIC Species TOS	: A T I C	Total Fish	GIS U	Max Length		J (ZEN)
Overwin habi Reari habi	Capt Meth SITE	ure Endod (s	(m)	(m)	S A Voltage (V)	Prequer (Hz)  Direction	PHO	URES Comment  CIFIC Species TOS	: A T I C	Total Fish	GIS U	Max Length		J (ZEN)
Overwin habi Reari	Capt Meti	ure Endod (s	(m)	(m)	S A Voltage (V)	Prequer (Hz)  Direction	PHO	URES Comment  CIFIC Species TOS	: A T I C	Total Fish	GIS U	Max Length		(ZEN)
Overwin habi Reari habi Spawr	Capt Meth SITE	Roll #	Frame # 19	(m)  listance (m)  Focal S	S.A. Voltage (V)	Direction U HAB	IG SP  ICY Pulse (µs)  PHO  cam bag	URES Comment  ECIFIC Species  TOS  OMMI	ENTS	Total Fish	Min Length (mm)	Max Length	Activity	

Site = "mouth"

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC:

#### 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: Floodplain Width (m): None Order: 3 US Elevation (m): Length (km): 0.78 Magnitude: 835 DS Elevation (m): Gradient (%): 8.21 Open Water: Bars: Channel Pattern: SI Coupling: CO Disturbance: Rip Veg: S

Confinement: CO Valley Flat: B - D Islands: Land Use: NO

#### SITE REFERENCING

Site Length (m): 100 Date: 2003-08-10 Time: 1210 Fish Card: Y FPC Class: Access: FT 3104 GIS UTM (ZEN): 10.321613.6046421 Agency Code: C016 Agency Name: FINS Consulting Ltd. NID:

NID Map: 093K.052 Field UTM (ZEN): 10.321612.6046423.

Crew: SR/MJ

#### CHANNEL

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

#### COVER

Cover	Type:	SWD	LWD	В	С	DP	OV	IV	LB SHP:	V	RB SHP:	S
Total: A	Amount:	T	Т	S	Т	D	S	N	LB Tex:	F	RB Tex:	F
	Loc P/S/O:	Ρ	P	P	Р	P	P		LB RIP:	s	RB RIP:	s
Canopy:	41-70%	LWD	Distr:	F/E		ISV (N/	AMV):	N	LB STG:	NA	RB STG:	NA

#### MORPHOLOGY

Bed Subst Dom: D (cm): 5 Morph: Pattern: IR Confinement: UN Coupling: DC

Bed Subst Subdom: D90 (cm): 16 Disturb: Islands: Ν Bars: SIDE.,

#### **FEATURES**

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

#### SAMPLING SPECIFICATIONS

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

#### PHOTOS

Owner	Roli#	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 -

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

#### WATERSHED REFERENCING **Gazetted Name:** Local Name: Reach #: WSC: 480-851000 ILP: ILP Map: REACH INFORMATION 10.319221.6045570. Air Photo #: BCC98018: 14 Setting: MP **BEC Zone:** Reach UTM (ZEN): Order: US Elevation (m): 1060 Length (km): 1.98 Floodplain Width (m): None Bars: Magnitude: 2 DS Elevation (m): 899 Gradient (%): 8.13 Open Water: Α Channel Pattern: SI CO Disturbance: Rip Veg: C Coupling: Confinement: CO Valley Flat: B-D Islands: N Land Use: OT SITE REFERENCING Date: 2003-08-10 Time: 1520 Fish Card: N FPC Class: Site Length (m): 100 Access: FT Agency Code: C016 Agency Name: FINS Consulting Ltd. NID: 3105 GIS UTM (ZEN): 10.321072.6045940 NID Map: 093K.052 Field UTM (ZEN): 10.321068.6045950. Crew: SR/MJ Channel Status: INT Flow Stage: Flood Signs: None Temp /C/: Avg Channel Width (m): 1.52 Avg Pool Depth (m): 0 Avg Gradient (%): 5.25 pH: **Turbidity:** Conductivity: Avg Wetted Width (m): Avg Bankfull Depth (m): 0.23 COVER Type: SWD LWD ١V LB SHP: S **RB SHP:** s R C DΡ OV N LB Tex: FC **RB Tex:** FC Amount: Ν Ν Total: LB RIP: s **RB RIP:** s Loc P/S/O: ISV (NAMV): LB STG: NA RB STG: NA Canopy: 41-70% LWD Distr: MORPHOLOGY Morph: Pattern: SI Confinement: OC Coupling: DC Bed Subst Dom: D (cm): Islands: N Bars: **Bed Subst Subdom:** D90 (cm): 35 Disturb: FEATURES NID MAP NID Type Height Length Photo Comment GIS UTM (ZEN) Field UTM (ZEN) (m) (m) 093K.052 31051 FLD 10.321067.6045949. 10.321068.6045950. 100 R13F2 as as site at least 093K.052 31052 flow contributor - stream dry above 10.321083.6045959. 10.321083.6045959. SAMPLING SPECIFICATIONS Voltage Frequency Pulse Species Life Total Min Length Max Length Activity EF EF distance Capture Stage (mm) (mm) Fish Method (sec) (m) (V) (Hz) (µs) PHOTOS Owner Roll # Focal Length Direction Frame # Comment SITE 13 STD D cam bag - dewatering in features SITE 13 STD HABITAT COMMENTS Overwintering habitat Rearing habitat Spawning habitat None - cannel totally dry. Flow abruptly stops here, huge dewatering and only water present during scouring flows. Spring observed Other immediately d/s, which likely provides persistent flow, but u/s from spring there is no fish habitat or potential. habitat SITE COMMENTS

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

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

azetted N	lame:				Loca	l Name:				Read	ch #:	1	Sit	te #:	106	
SC: 480 P:	0-849		600-55387 2514	7	ILP N	Лар: 93K	.052									
						REAC	H INF	ORMA	TION							
each UTM Mag Channel F Confin	Orde Initud Patter	er: 1 le: 1 n: IR	D	S Elevat S Elevat Co	5. tion (m): tion (m): oupling: llev Flat:	845	Grad	8018: 14 gth (km): lient (%): urbance: Islands:	0.82 2.44 N	s	Floodpl Open W	MP ain Widt /ater: Rip Veg and Use	h (m): A ! : M	Zone: None Bars:	SBS N	
			•	• •		SITI	REF	RENC			_					
ite Lengt NID NID N	): `	3	100 106 K.052	GI		EN): 10.3	Date: 2003 21552.6046 21553.6046 CHA!	955 955.	Time: 1 Agency Crew: 3	Code:	Fish Ca C016		-	PC Cla FINS (		NC ing
Avg Cha	annel \	Width (			Avg Poo	Flow Stage I Depth (m I Depth (m	):	Avg Grad	od Signs: dient (%): (urbidity:	:				Femp / F ductiv	H:	
							ÇO)	I E R		**************************************						****
Cover Fotal:			Type: Amount:	SWD	LWD	В	C DF	OV	IV	L	B SHP: B Tex:		RB S	Tex:		
Canopy	y:	L	oc P/S/O:	LWD	Distr:		ISV	(NAMV):	İ	_	_B RIP: B STG:			RIP: STG:		
						•	AORPH	oLog'	Y			***********				
Bed :	Subst	Dom:		D (c	:m):	***********	rph:	**********	ttern:		Confl	nement:	:	Co	upling	: :
3ed Sub		bdom:	Height	D90 (c	•	Mo	rph: urb: FEAT	Pa Isla	vinas sa sa sa sa sa sa sa sa sa sa sa sa s		Bars:	nement: S UTM (2		T	gnilque	
Bed Sub	st Sul	bdom:		D90 (c	:m):	Mo	rph: urb: FEAT	Pa Isl: URES	ttern:		Bars:			T		
Bed Sub	st Sul	bdom:	Height	D90 (c	Photo	Mo Dist	rph: urb: FEAT	Pa' Isli URES Comment	ttern: ands:	N S	Bars:			T		
D MAP	st Sul	Type	Height (m)	D90 (c	Photo	Mo Dist	rph: urb: FEAT	Pa' Isli URES Comment	ATIO		Bars:	S UTM (		Fiek		
D MAP	NID	Type	Height (m)	Length (m)	Photo S A	M P L I I	rph: urb: FEAT	Parision (18) (18) (18) (18) (18) (18) (18) (18)	ATIO	Total	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
D MAP	NID	Type	Height (m)	Length (m)	Photo S A	M P L I I	rph: urb: FEAT	Parision (Section 1997)  URES  Comment  ECIFIC  Species	ATIO	Total	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
D MAP	NID  aptur  Metho	Type  Type  Fe E  God (se	Height (m)  Fec) EF di	Length (m)	Photo S A Voltage (V)	M P L I I Frequei (Hz)	rph: urb: FEAT  NG SPI ncy Pulse (µs)	Parision (Section 1997)  URES  Comment  ECIFIC  Species	ATIO	Total Fish	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
D MAP	NID NID	Type Type Te E	Height (m)	Length (m)	Photo S A Voltage (V)	MPLII Frequei (Hz)	rph: urb: FEAT  NG SPI ncy Pulse (µs)	Parision (Section 1997)  URES  Comment  ECIFIC  Species	ATIO	Total Fish	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
D MAP	NID  aptur  Metho	Type  Type  Fe E  God (se	Height (m)  Fec) EF di	Length (m)	Photo S A Voltage (V)	M P L I I Frequei (Hz)	rph: urb: FEAT  NG SPI ncy Pulse (µs)	Parision (Section 1997)  URES  Comment  ECIFIC  Species	ATIO	Total Fish	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
D MAP	NID  aptur  Metho	Type  Type  Fe E  God (se	Height (m)  Fec) EF di	Length (m)	Photo S A Voltage (V)	MPLII Freque (Hz)  Direction U	rph: urb: FEAT  NG SPI  ncy Pulse (µs)  PHO  cam bag	Parisit URES Comment ECIFIC Species TOS	ttern: ands: ATIO Life T	Total Fish	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
D MAP  Own  Si	NID Captur Metho	Type  Type  Fe E  God (se	Height (m)  Fec) EF di	Length (m)	Photo S A Voltage (V)	MPLII Freque (Hz)  Direction U	rph: urb: FEAT  NG SPI ncy Pulse (µs)	Parisit URES Comment ECIFIC Species TOS	ttern: ands: ATIO Life T	Total Fish	Bars:	S UTM (	ZEN) x Leng	Fiek	) MTU E	
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# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

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Site = "mouth"

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC:

#### WATERSHED REFERENCING

**Gazetted Name:** 

Local Name:

Reach #:

Site #: 108

WSC: 480-849100-03600

ILP:

ILP Map:

#### REACH INFORMATION

Reach UTM (ZEN): 10.321525.6046622. US Elevation (m): Order: 2

093K.052

Air Photo #: BCC98018: 14 835 815

Length (km): 0.62 Gradient (%): 3.23 Setting: MP BEC Zone: Floodplain Width (m): None Open Water: Bars: Α

Rip Veg: C

3

Magnitude: Channel Pattern: IR Confinement: UN DS Elevation (m): Coupling: DC Valley Flat: R/C

Disturbance: islands:

Land Use: NO

#### SITE REFERENCING

Site Length (m): NID: 3108

NID Map:

Access: FT

Date: 2003-08-10 GIS UTM (ZEN): 10.321561.6046909 Field UTM (ZEN): 10.321560.6046910.

Time: 1115 Fish Card: Y FPC Class: **S4** Agency Code: C016 Agency Name: FINS Consulting Ltd.

Crew: SR/MJ

N

CHANNEL

Channel Status:

Flow Stage: Ava Pool Depth (m): 0.14

Flood Signs: None Avg Gradient (%): 3.25 Temp /C/: 9 pH: 8

SBS

Avg Channel Width (m): 1.15 Avg Wetted Width (m): 0.9

Avg Bankfull Depth (m): 0.33

Turbidity:

Conductivity: 210

#### COVER

Cover Total:

LWD В DP IV SWD Type: Amount: Т N S D Ν Loc P/S/O: Canopy: 41-70% LWD Distr: F/E ISV (NAMV):

LB SHP: s RB SHP: v LB Tex: **FGC RB** Tex: **FGC** LB RIP: С **RB RIP:** С LB STG: MF MF **RB STG:** 

#### MORPHOLOGY

Bed Subst Dom: Bed Subst Subdom:

D (cm): 2 D90 (cm): 8

Morph: Disturb: Pattern:

ìR

Ν

Confinement: UN SIDE

Coupling: DC

### FEATURES

	NID MAP	NID	Туре	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
i									

#### SAMPLING SPECIFICATIONS

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

#### PHOTOS

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

#### HABITAT COMMENTS

Overwintering	Poor - lacks sufficient deep pool cover.
habitat	
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 = \$4, caught RB to here, \$3, than splits - eastern branch is \$3 and is actually 480-851000 system. RB captured here. Site = UTM = point of confluence

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

#### WATERSHED REFERENCING **Gazetted Name:** Local Name: Reach #: 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: US Elevation (m): 930 Length (km): 1.27 Floodplain Width (m): None Magnitude: DS Elevation (m): Gradient (%): 7.48 Open Water: A Bars: Channel Pattern: SI Coupling: CO Disturbance: Rip Veg: C Confinement: CO Valley Flat: NS Islands: Land Use: OT SITE REFERENCING Site Length (m): 100 Date: 2003-08-10 Access: FT 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: Flood Signs: None Temp /C/: Avg Channel Width (m): Avg Pool Depth (m): 0.1 Avg Gradient (%): pH: Avg Wetted Width (m): 0.9 Avg Bankfull Depth (m): 0.27 Turbidity: Conductivity: 210 COVER LWD C SWD В DP ov IV LB SHP: Cover Type: H RB SHP 11 Amount: Ν Ν s D Ν LB Tex: F **RB** Tex: F Total: Loc P/S/O: LB RIP: С **RB RIP:** C LWD Distr Canopy: 71-90% N ISV (NAMV): LB STG: MF **RB STG:** MF MORPHOLOGY Bed Subst Dom: D (cm): 3 Morph: Confinement: Coupling: DC Bed Subst Subdom: D90 (cm): 10 Disturb: islands: Ν Bars: FEATURES NID MAP NID Photo Type Height Length Comment GIS UTM (ZEN) Field UTM (ZEN) (m) (m) 093K.052 31091 R12F25 impassable to fish FSB 100 10.321518.6046620. 10.321519.6046620. SAMPLING SPECIFICATIONS Capture EF distance Voltage Frequency Pulse **Species** Life Total Min Length Max Length | Activity Method (sec) (Hz) (m) **(V)** (µs) Stage Fish (mm) (mm) 100 80 NFC 0 PHOTOS Owner Roll # Frame # Focal Length Direction Comment SITE 12 24 STD SITE STD D boot - FSB in features HABITAT COMMENTS Overwintering habitat Rearing habitat Spawning habitat Poor overall - still flowing in this reach, but FSB blocks any potential fish passage. Most of channel is underground u/s from this Other habitat 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

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.

## BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

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### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

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Avg Channel Widtl		,		:N): 1U.32	3423.6046	520 521.	Time: Agency Crew:	Code:	Fish Card C016 Ag		FPC Cla	ess: NCD Consulting L
Avg Channel Widtl						NNEL						
	h (m):	A	vg Pool [	low Stage Depth (m) Depth (m)	:	Avg Grad	od Signs dient (%) Turbidity	:		Co	Temp / ا Inductiv	H:
					CO	VER						
Cover Total:	Type: Amount: Loc P/S/O:	SWD I	_WD	В	C D	P OV	IV	LE	SHP: STex: BRIP:	RE	SHP: Tex: BRIP:	
Canopy:	LOC FISIO.	LWD Dis	tr:		ISV	(NAMV):	1		STG:		STG:	
				N	IORPH	OLOG'	<b>Y</b>					
Bed Subst Don Bed Subst Subdon		D (cm D90 (cm		Mor Distu	•		ttern: ands:		Confine Bars:	ment:	Co	oupling:
					FEAT	URES			,			
NID MAP NID TY	pe Height (m)	Length P	hoto		:	Comment			GIS	JTM (ZEN)	Fiek	H UTM (ZEN
			SAF	A P L I N	G SP	ECIFIC	ATIG	NS				
		stance V m)	oltage (V)	Frequen (Hz)	cy Pulse (µs)	Species		Total I	lin Length (mm)	Max Len (mm	- 1	tivity
		<u>.</u>								-		
					PHC	TOS						
Owner Roll #								Comn	nent			
SITE 7	20	STE	<u>'</u>	U	cam bag							
	-											
LL		.1		HARI	TAT (	COMME	NTS					
Overwintering habitat												
Rearing habitat	,											
Spawning habitat												
Other None -	no water, n	o channel.	Gully wit	th no flow	, but occas	ional signs	of moistr	ess - de	vil's club.			

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

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

	V	IATERSHE	D REF	RENCING					
Gazetted Name: WSC: 480-856600	Lo	cal Name:		R	each#:	1	Site #:	112	
ILP:		Map:							
		REACH	INFORM	TATION					
People LITM /7EN): 1/	0 222022 <i>CD4EE7E</i>	Air Dhoto #	PCC000000	17	Cottings	\∕E	DEC Zonos	cpc	

Reach UTM (ZEN): 10.323823.6045575. Setting: Floodplain Width (m): None US Elevation (m): 735 Length (km): 0.38 Order: Magnitude: 3 DS Elevation (m): 714 Gradient (%): 6.11 Open Water: Bars: Channel Pattern: SI Coupling: PC Disturbance: Rip Veg: M Confinement: CO Valley Flat: B - D Islands: N Land Use: QT

SITE REFERENCING

Site Length (m): 100 Date: 2003-07-16 Time: 1135 Fish Card: Y FPC Class: 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: 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: Conductivity: 80

COVER

С IV Type: Cover Amount: N N Ð s Ν Total:

LB SHP: RB SHP: FGC RB Tex: FGC LB Tex: Loc P/S/O: LB RIP: D **RB RIP:** D ISV (NAMV): Canopy: 41-70% LWD Distr: F/E LB STG: ΥF **RB STG:** 

MORPHOLOGY

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

1	IID MAP	NID	Туре	Length (m)	Photo	Comment	GIS UTM (ZEN)	Field UTM (ZEN)
E								

#### SAMPLING SPECIFICATIONS

Capture Method	EF (sec)	EF distance	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage		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

Overwinterin	None - lacks sufficient deep pools.
habitat	
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

# BFP FFHI 2003/04 - Pendleton Resampling Project WSC: 480

azetted N					Loca	ai Name:				Rea	ich #:	2		310	e #:	113
/SC: 480 .P:	)-8566	600			ILP I	Мар:										
						REAG	CH INF	ORMA	TION							
each UTM	I (ZEN	N): 1	0.323295	.604533	3.	Air Phot	to#: BCC9	8023: 17		5	Setting:	vw	1	BEC 2	Zone:	SBS
	Orde: nitude				tion (m): tion (m):			gth (km): lient (%):	0.40 7.5		Floodp Open V				None Bars:	N
Channel P			<u> </u>		oupling:			urbance:	1.5		Open		.       ∧ Veg:	้ร	<b>ж</b> 15.	IN.
Confine	emen	t: CO		Val	ley Flat:	B-D		Islands:	N		1	Land	Use:	OT	Waterstein	
						SITI	E REFI	ERENC	ING							
Site Lengt			00		ess: FT		Date: 2003		Time:		Fish C		N		PC Cla	
NID: NID M			113 (.052		•	•	23561.6045 23568.6045		Agency Crew:	•		Ager	icy iva	me:	LIN2 C	Consulting
					•		CHAI	44444444444444								
(	Chanr	nel Stat	us: INT			Flow Stage	e: L	Flo	od Signs	: None				Т	emp /	C/:
			m): 1.88		_	ol Depth (m	•	Avg Gra							•	H:
Avg We	etted \	vvicth (	m): 0	Αν	g Banklu	ll Depth (m			Turbidity	<b>r:</b> **********		30000000	******	Conc	ductivi	ty:
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Cover Total:	N	-	Type: Amount:	SWD	LWD	B N	C DI		IV N		LB SHP: LB Tex:	۲		RB S RB T		V FGC
i Otal.		-	c P/S/O:							_	LB RIP:			RBI		s
Canopy	r: 71	1-90%		LWD	Dietr:	F/E	ISV	(NAMV):	N	ì	LB STG:	N.	Α	RB S	TG:	NA
Bed S Bed Subs	st Sul		C G	D (c D90 (c	:m): 1 :m): 5	D Mo	MORPH  orph: CP  turb: B2D2  FEAT	OLOG Pa	Y attern: lands:	SI N	Conf Bars		ent:	co		upling: (
Bed S Bed Subs		odom:		D (c D90 (c	:m): 1 :m): 5	D Mo	orph: CP turb: B2D2 FEAT	OLOG Pa C1 Isl	ittern:		Bars	: 1	ent:		Co	upling: (
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Bed S Bed Subs	NID aptur	Type	Helght (m)	D (c D90 (c Length (m)	em): 1 em): 5 Photo	0 Mo 0 Dist	Print: CP turb: B2D2 FEAT ( NG SP) ncy Pulse (µs)	OLOG Pa C1 Isl URES Comment  ECIFIC	ATIO	N INS	Bars G	: I	ent: N M (ZE	:N)	Co	UTM (ZI
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Bed S Bed Subs  ID MAP  C: N  SIT SIT	NID  aptur  Metho	Type  Type  Fe Effect (see	Helght (m)  Frame #	D (c D90 (c D90 (c) Stance m)	Photo S.A Voltage (V) Length	Direction	PHO	OLOG Pa C1 Isl URES Comment ECIFIC Species TOS	ittern: lands:	N NS Total Fish	Bars G Min Ler (mm	: I	ent: N M (ZE	:N)	Co	UTM (ZI
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# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

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

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC:

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**Gazetted Name: Local Name:** Reach #: Site #: 115

WSC: 480-858600

ILP: ILP Map:

#### REACH INFORMATION

Reach UTM (ZEN): 10.320387.6043011. Air Photo #: BCC98023: 17 Setting: MP BEC Zone: 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: Channel Pattern: Si Rip Veg: C Coupling: CO Disturbance:

Confinement: FC Valley Flat: Land Use: NO N Islands: Ν

#### SITE REFERENCING

Site Length (m): Date: 2003-08-11 Time: 1530 Fish Card: Y FPC Class: Access: FT GIS UTM (ZEN): 10.321486.6043614 Agency Code: C016 Agency Name: FINS Consulting Ltd. NID: 3115

NID Map: 093K.052 Field UTM (ZEN): 10.321486.6043616. Crew: SR/MJ

#### CHANNEL

Channel Status: Flow Stage: 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:

Cover	Type:	SWD	LWD	В	Ç	DP	OV	i V	LB SHP:	V	RB SHP:	V	
Total: M	Amount:	N	N	S	N	D	Т	Т	LB Tex:	R	RB Tex:	R	
	Loc P/S/O:			P		P	P	P	LB RIP:	S	RB RIP:	s	
Canony:	1-20%	LWD I	Distr.	N		ISV (NA	MV).	Δ	LB STG:	NΔ	RB STG:	NΑ	

#### MORPHOLOGY

Bed Subst Dom: D (cm): 10 Morph: Pattern: SI Confinement: EN Coupling: CO Bed Subst Subdom: D90 (cm): 400

#### FEATURES

NID MAP	NID	Туре	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		Min Length (mm)	Max Length (mm)	Activity
EF	388	150	600	80	6	NFC		0			
						· · · · · · · · · · · · · · · · · · ·					

Owner	Roil#	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.

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC:

#### WATERSHED REFERENCING Reach #: 2 **Gazetted Name: Local Name:** Site #: 116 WSC: 480-858600-15000 ILP: ILP Map: REACH INFORMATION SBS Reach UTM (ZEN): 10.320019.6044414. Air Photo #: BCC98023: 17 Setting: MP BEC Zone: US Elevation (m): 1035 Length (km): 2.33 Floodplain Width (m): None Order: 3 Open Water: Gradient (%): 7.85 Magnitude: 5 DS Elevation (m): 852 Α Bars: Channel Pattern: SI Disturbance: Rip Veg: C Coupling: CO Valley Flat: B - D Ν Land Use: NO Confinement: FC Islands: SITE REFERENCING Site Length (m): Date: 2003-08-12 Time: 1010 Fish Card: N FPC Class: **S6** Access: FT Agency Code: C016 Agency Name: FINS Consulting Ltd. GIS UTM (ZEN): 10.322232.6044902 NID: 3116 NID Map: 093K.052 Field UTM (ZEN): 10.322230.6044885. Crew: SR/MJ CHANNEL Channel Status: INT Flow Stage: Flood Signs: scour Temp /C/: 0 Avg Gradient (%): pH: Avg Channel Width (m): 2.13 Avg Pool Depth (m): **Turbidity:** Conductivity: Avg Wetted Width (m): Avg Bankfull Depth (m): 0.43 COVER LWD C IV LB SHP: ν **RB SHP:** SWD Cover Type: LB Tex: **FGC RB** Tex: **FGC** Ν Total: Amount: Ν Ν Loc P/S/O LB RIP: S RB RIP: s ISV (NAMV): LB STG: Canopy: 41-70% LWD Distr: NA RB STG: NA MORPHOLOGY **Bed Subst Dom:** 8 Morph: Pattern: ١R Confinement: OC Coupling: DC D (cm): **Bed Subst Subdom:** D90 (cm): 35 Disturb: Islands: Ν Bars: SIDE FEATURES GIS UTM (ZEN) Field UTM (ZEN) NID MAP NID Type Height Length **Photo** Comment (m) (m) SAMPLING SPECIFICATIONS Capture EF EF distance Voltage Frequency Pulse Species Life Total Min Length | Max Length | Activity (µs) Method (V) (Hz) Stage Fish (sec (m) PHOTOS Owner Roll # Frame # Focal Length Direction Comment SITE 13 13 STD cam bag SITE 13 STD D cam bag HABITAT COMMENTS Overwintering None. habitat Rearing habitat Spawning None. habitat Other None - channel bone dry, potential - none. No fish caught up to here, NFC in parent. habitat 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.

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

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azetted N 'SC: 48	Name: 80-8586	500-449	923		Loca	il Name:				Rea	ach #:	1		Site	e #:	117	
.P:			527		ILP N	<b>Лар:</b> 93К	.052										
						REAC	H INF	ORMA	TION								
Reach UT	M (ZEN Ordei	•		5.604389 IS Flevat	3. tion (m):	Air Phot 975	o#: BCC9 Len	98023: 17 gth (km):	0.84	:	Setting: Floods			BEC 2	one: None	SBS	
_	gnitude	e: 1		S Eleva	tion (m):	910	Grad	lient (%):	7.74		Open \	Water	: <i>F</i>	В	ars:	N	
Channel I Confir					oupling: lley Flat:	CO N	Dist	urbance: Islands:	N				Veg: Use:				
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Site Leng NID NID N	):	31	00 17 (.052	G	-	ZEN): 10.3	Date: 2003 21539.6043 21539.6043	807			Fish C :: C016		N ncy Na		PC Cla		S6 ting
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Cover	N		Type: Amount:	<b>+</b>	LWD N	B	C DI		IV N	_	LB SHP: LB Tex:	۲	/ 3C	RB S RB T		V FGC	
Total:	••		c P/S/O:		iN .	- IN	N N	N	- IN		LB RIP:		S	RB I	RIP:	S	
Canop	y: 41	1-70%		LWD	Distr: F	=/E 		(NAMV):	N	20000000	LB STG:	N	A	RB S	TG:	NA	000000
Bed Bed Sub	Subst ost Sub		C G	D (d	:m): 1 :m): 1		rph: CF urb;	Isl	ttern: ands:	SI N	Con Bars	finem s: f	ent: V	СО	Co	upling	j: (
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Owerwinter Rearing habitat	NID Captur Metho  ring Ni I I I I I I I I I I I I I I I I I I I	Type  e Eld (se  13  13  one.  one.	Height (m)  Frame 9  9	Length (m)  listance (m)  # Focal S	Photo S A Voltage (V) Length	MPLII Frequer (Hz)  Direction U D HAB	PHO cam bag	Palsi URES Comment ECIFIC Species	ttern: ands: ATI( Life Stage	N S Total Fish	Min Let (mn	ngth	Max (i	Lengt mm)	Field	MTU K	

Site = UTM

## BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

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azetted Nam			_		Loca	al Name:				Rea	ch#: 1	Sit	te#: 1	18
SC: 480-86 P:	63300	-1430	10		ILP f	Map:								
-							H INF	ORMA	TION					
each UTM (Z	ZEN):	10	324081	.604333	6.	****************	#: BCC9			S	etting: VW	BEC	Zone:	SBS
Or	der:	1	U	IS Eleva	tion (m):		_	th (km):	0.88		Floodplain \	, ,	None	
Magnite hannel Patt		1 SI	D		tion (m): oupling:			ient (%): ırbance:	10		Open Water Rip	r: A 1 Veq:NS	Bars: I	N
Confinem		-			lley Flat:	N		islands:	N		•	Use: NO		
						SITE	REFE	RENC	ING					
ite Length ( NID: NID Map		106 311 93K.	8	G	-	ZEN): 10.32 ZEN): 10.32		012	Time: Agency Crew:	Code	Fish Card: : C016 Age		PC Class FINS Co	
·						-	CHAI	INEL						
Ch	annel	Statu	s: NVC	;		Flow Stage	:	Floo	d Signs	:		•	Temp /C/	<b>:</b>
Avg Channe				۸.,	-	l Depth (m)		Avg Grad	lient (%) urbidity			Con	pH ductivity	
Avg Wette	SO AAIO	un (n	ı). 	AV	y Dankiu	II Depth (m)	COV	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ar Diany	'- *********		0011	uucuvit,	' <b>-</b>
^	 ا		Tuno	SWD	LWD	В	C DF		IV	] ı	.B SHP:	RR S	SHP:	000000000000000000000000000000000000000
Cover Total:	þ	Α	Type: mount:		LVVD		U Di	- Ov	1,0	-,	B Tex:	RB	Тех:	
Cononic	L	Loc	P/S/O:	LWD	Dietr	<u> </u>	ISV	(NAMV):	İ	_	LB RIP: _B STG:		RIP: STG:	
Canopy:	*******			LWD	Distr.	N.	IORPH		•	•	.5 010.			
Bed Sub			00000000000	-	cm):	Mo: Dist	ph:	Pa	ttern: ands:	************	Confinen Bars:	nent:	Cou	pling:
peu subst :	Subgo	m:		D90 (d				131	anas.					
						1	FEAT	URES	anus.				F:-14	· · · · · · · · · · · · · · · · · · ·
			Height (m)	Length (m)			FEAT		anus.			TM (ZEN)	Field (	JTM (ZE
				Length			FEAT	URES	anus.			TM (ZEN)	Field (	UTM (ZE
				Length	Photo		FEAT	URES				TM (ZEN)	Field (	UTM (ZE
D MAP NI	ID T	уре	(m)	Length (m)	Photo	AMPLIN	FEAT	URES Comment	ATIC		GIS U			
D MAP NI			(m)	Length	Photo	AMPLIN	FEAT	URES		) N S Total Fish		TM (ZEN)  Max Leng (mm)		
D MAP NI	ID T	ype	(m)	Length (m)	Photo S /	AMPLIA	FEAT	URES Comment	ATI (	Total	GIS U	Max Leng		
D MAP NI	ID T	ype	(m)	Length (m)	Photo S /	AMPLIA	IG SP	Comment  E C I F I C  Species	ATI (	Total	GIS U	Max Leng		
D MAP NI	ID T	ype EF (sec	(m)	Length (m)	S / Voltage (V)	X M P L I N e Frequer (Hz)	FEAT	Comment  E C I F I C  Species	ATI (	Total Fish	GIS U	Max Leng		
D MAP NI Cap Met	ture thod	EF (sec	(m) EF d	Length (m)	S / Voltage (V)	AMPLIA	IG SP	Comment  E C I F I C  Species	ATI (	Total Fish	GIS U	Max Leng		
Cap Met	ture thod	EF (sec	(m)	Length (m)	S / Voltage (V)	Frequer (Hz)	FEAT  IG SP  ICY Pulse (µs)	Comment  E C I F I C  Species	ATI (	Total Fish	GIS U	Max Leng		
Cap Met	ture thod	EF (sec	(m) EF d	Length (m)	S / Voltage (V)	Frequer (Hz)	FEAT  IG SP  ICY Pulse (µs)	Comment  E C I F I C  Species	ATI (	Total Fish	GIS U	Max Leng		
D MAP NI Cap Met	ture thod	EF (sec	(m) EF d	Length (m)	S / Voltage (V)	PLIM Frequer (Hz)	FEAT  IG SP  ICY Pulse (µs)	URES Comment  ECIFIC Species TOS	ATIC Life Stage	Total Fish	GIS U	Max Leng		
D MAP NI  Cap Met  Ownet SITE	oture the thought of	EF (sec	(m) EF d	Length (m)	S / Voltage (V)	PLIM Frequer (Hz)	FEAT  IG SP  ICY Pulse (µs)  PHO  cam bag	URES Comment  ECIFIC Species TOS	ATIC Life Stage	Total Fish	GIS U	Max Leng		
Cap Met  Owner SITE  verwintering habitat Rearing	oture the thought of	EF (sec	(m) EF d	Length (m)	S / Voltage (V)	PLIM Frequer (Hz)	FEAT  IG SP  ICY Pulse (µs)  PHO  cam bag	URES Comment  ECIFIC Species TOS	ATIC Life Stage	Total Fish	GIS U	Max Leng		
Owner SITE habitat Rearing habitat Spawning	oture the thought of	EF (sec	(m) EF d	Length (m)	S / Voltage (V)	PLIM Frequer (Hz)	FEAT  IG SP  ICY Pulse (µs)  PHO  cam bag	URES Comment  ECIFIC Species TOS	ATIC Life Stage	Total Fish	GIS U	Max Leng		
Cap Met  Owner SITE  Inverwintering habitat  Rearing habitat	sture thod	EF (sec	Frame # 15	Length (m)	Photo S J Voltage (V)	Direction BD	FEAT  IG SPI  ICY Pulse (µs)  PHO  cam bag	URES Comment  ECIFIC Species  TOS	AT10 Life Stage	Total Fish	GIS U	Max Leng (mm)	th Activ	vity

## BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

					W A	TERS	HED R	EFER	ENCI	NG			
Gazetted WSC: 4	Name: 80-8688	55			Local	Name:				Read	ch#: 1	Site	#: 119
ILP:	00-0000		534		ILP N	lap: 93K.	052						
						REAC	H INF	ORMA	TION				
Channel	Order: gnitude	: 1 : 1 : SI	U	S Elevat Co	ion (m): ion (m): ion (m): oupling: ley Flat:	796 714 CO N	Gradi Distu	8023: 17  (th (km): ient (%): irbance: Islands:  RENC	0.98 8.37 N	S		` '	one: SBS None Irs: N
	gth (m): D: Map:	10 31 093K		GI		EN): 10.32	ate: 2003 5322.60439 5322.60439	-07-16 195 195.	Time: Agenc		Fish Card: C016 Age		C Class: NCD INS Consulting Ltd
							CHAN	INEL					
•	Chann hannel V Vetted V	vidth (r	•		Avg Pool	Flow Stage Depth (m) Depth (m)	:	Avg Grad	od Signs dient (% Furbidity	):			mp /C/: pH: uctivity:
Cover Total:			Type:		LWD	В	C DF		IV	L	B SHP: B Tex: LB RIP:	RB SH RB Te RB R	ex:
Cano	py:	Lo	c P/S/O:	LWD	Distr:		ISV	(NAMV):	<u> </u>		B STG:	RB ST	
						N	ORPH	oLog'	Y				
	i Subst i bst Sub			D) (c	•	Moi Dist	-		ttern: ands:		Confinen Bars:	ent:	Coupling:
							FEAT	URES					
NID MAP	NID	Туре	Height (m)	Length (m)	Photo			Comment	,		GIS U	TM (ZEN)	Field UTM (ZEN)
					A 2	MPLIN	IG SPI	CIFIC	ΔΤΙ	) N S			
	Capture			listance (m)	Voltage (V)		Pulse (μs)	Species	Life	Total	Min Length	Max Length	Activity
į						(112)	(43)		Stage	Fish	(mm)	(mm)	
L				, <u>, , , , , , , , , , , , , , , , , , </u>		(1.2)	(43)		Stage	Fish	(mm)	(mm)	
Į.						(112)	PHO	TOS	Stage	Fish	(mm)	(mm)	
			Frame #	<b>♯</b> Focal	Length	Direction	PHO	TOS	Stage		(mm)	(mm)	
<u> </u>	wner R	coll #		<b>♯</b> Focal				Tos	Stage			(mm)	
			Frame #	<b>♯</b> Focal	Length	Direction U	PHO					(mm)	
			Frame #	<b>♯</b> Focal	Length	Direction U	PHO					(mm)	
	BITE Print P		Frame #	<b>♯</b> Focal	Length	Direction U	PHO					(mm)	
Overwinte	ering at		Frame #	<b>♯</b> Focal	Length	Direction U	PHO					(mm)	
Overwinte habita Rearin	ering at ing at ing		Frame #	<b>♯</b> Focal	Length	Direction U	PHO					(mm)	
Overwinte habita Rearin habita Spawni	ering eat eat eat eat eat eat eat eat eat eat	7	Frame #	<b>♯</b> Focal	Length TD	Direction U	PHO					(mm)	

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

BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

						0.00.00 C	~ 11 L P	REFER		NO			
	d Name:	-			Loca	al Name:				Re	ach #: 1	Site	#: 120
30. P:	400-003		535		ILP I	Map: 93	K.052						
						REA	CH IN	FORMA	TION				
each L	JTM (ZEI	•	0.325004					098023: 17	0.04		Setting: VW		
N	Orde Nagnitud				tion (m): tion (m):			ngth (km): adient (%):	0.24 5.42		Floodplain Open Wate		None ars: N
	el Patter nfinemer				oupling: ley Flat:		Di	sturbance: Islands:	N		•	Veg: NS Use: OT	
		O		V 41	icy i iat.	SIT	E REI	ERENC			Lanu	Use. U1	
ite Le	ngth (m	n): 10	00	Acc	ess: V2	000000000000000000000000000000000000000	Date: 20		Time:	1440	Fish Card:	N FP	C Class: N
f	NID:	31	20	GI	S UTM (2	ZEN): 10.3	325197.604	3103	Agend	y Code	: C016 Age	• •	
NI	D Map:	093	C. <b>05</b> 2	Fiel	id UTM (2	ZEN): 10.3	325198.604	000000000000000000000000000000000000000	Crew:	SR/M	J		190001110000000000000000000000000000000
	٥١					F: 0:		NNEL	• ••			_	
-	Chan Channel ' Wetted '	Width (	•		Avg Poo	Flow Stag I Depth (n I Depth (n	n):	Avg Gra	od Sign dient (% Turbidit	·):			emp /C/: pH: uctivity:
	,	************				(.		VER		<b>,</b>		Oone	ucarny.
Cove	r		Type:	SWD	LWD	В	С	OP OV	IV		LB SHP:	RB SI	<del>I</del> P:
Total	:		Amount: c P/S/O:							$\exists$	LB Tex: LB RIP:	RB Te	
Can	ору:	LO	C FISIO.	LWD	Distr:		IS	V (NAMV):	. 1		LB RIF: LB STG:	RB S1	
		***********			5555555555555555	4444444							
	1 011	• • • • • •				***************************************	2002-1000-00-00-00-00-00-00-00-00-00-00-00-0	HOLOG	000000000000000000000000000000000000000				_
	ed Subst Subst Sul			D (c D90 (c		M	orph: turb:	Pa	t attern: lands:		Confinen Bars:	nent:	Coupling:
Bed S	Subst Su	bdom:	Height (m)	D90 (c	m):	M	orph: turb:	Pa Isl	ittern:		Bars:	nent: TM (ZEN)	Coupling:
Bed S	Subst Su	bdom:		D90 (c	Photo	Me Dis	orph: sturb: FEA	Pa IsI TURES Comment	attern: lands:	zwe.	Bars:		
Bed S	Subst Su	Type	(m)	D90 (c	Photo	M P L I	orph: sturb: FEA	Pa Isi TURES Comment	attern: lands:	D N S	Bars:		Field UTM (2
Bed S	P NID	Type	(m)	D90 (c	m): Photo	M P L I	orph: sturb: FEA NG SI	Pa Isi TURES Comment PECIFIC	attern: lands:		Bars:	TM (ZEN)	Field UTM (2
Bed S	P NID	Type	(m)	D90 (c	Photo S A Voltage	M P L I	orph: sturb: FEA NG SI	Pa Isi TURES Comment PECIFIC	attern: lands:	Total	Bars:  GIS U	TM (ZEN)	Field UTM (2
Bed S	P NID	Type	(m)	D90 (c	Photo S A Voltage	M P L I	NG SI	Pa Isi TURES Comment PECIFIC	attern: lands:	Total	Bars:  GIS U	TM (ZEN)	Field UTM (2
Bed S	P NID Captur Metho	Type  re EF od (see	EF dicc) (	Length (m)  stance m)	Photo S A Voltage (V)	M P L I Freque (Hz	NG SI	Pa Isl TURES Comment PECIFIC e Species	attern: lands:	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
D MAI	P NID  Captur  Metho	Type  re EF cod (see	EF di	Length (m)  stance m)	Photo S A Voltage (V)	M P L I	NG SI	Pa Isl TURES Comment PECIFIC e Species	attern: lands:	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
Bed S	P NID Captur Metho	Type  re EF od (see	EF dicc) (	Length (m)  stance m)	Photo S A Voltage (V)	M P L I Freque (Hz	NG SI	Pa Isl TURES Comment PECIFIC e Species	attern: lands:	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
Bed S	P NID Captur Metho	Type  re EF od (see	EF dicc) (	Length (m)  stance m)	Photo S A Voltage (V)	M P L I Freque (Hz	NG SI	Pa Isl TURES Comment PECIFIC e Species	ATH	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
C C	P NID  Captur Metho  Dwner I SITE	Type  re EF od (see	EF dicc) (	Length (m)  stance m)	Photo S A Voltage (V)	M P L I Freque (Hz	NG SI	Pa Isi TURES Comment PECIFIC e Species )	ATH	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
D MAI	Captur Metho	Type  re EF od (see	EF dicc) (	Length (m)  stance m)	Photo S A Voltage (V)	M P L I Freque (Hz	NG SI	Pa Isi TURES Comment PECIFIC e Species )	ATH	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
D MAI	Captur Metho  Ca	Type  re EF od (see	EF dicc) (	Length (m)  stance m)	Photo S A Voltage (V)	M P L I Freque (Hz	NG SI	Pa Isi TURES Comment PECIFIC e Species )	ATH	Total Fish	Bars:  GIS U	TM (ZEN)	Field UTM (2
verwin habi	Captui Metho	Type  Type  re EFod (see	Frame #	D90 (c Length (m)  stance m)  Focal S	Photo S A Voltage (V)  Length TD	M P L I Freque (Hz	NG SI PH cam bag	Palsi ITURES Comment PECIFIC e Species ) OTOS COMME	ATU Life Stage	Total Fish Cor	Bars:  GIS U	Max Length (mm)	Field UTM (2

Site = "mouth"

# BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

					ITER	70.78.78.						200020000000000000000000000000000000000	0000000000	
azetted Name SC: 480-870				Loca	l Name:					Rea	ich #: 1		Site #	: 121
P:	5253	6		ILP N	1ap: 93	K.052								
					REA	CH	INFO	ORMA	TION					
each UTM (ZE Ord Magnitue Channel Patte Confineme	er: 1 de: 1 ern: Si	U	S Elevat Co	i. ion (m): ion (m): oupling: ley Flat:	807 714	to #:	Leng Gradi Distu	3023: 17 th (km): ent (%): irbance: Islands:	0.58 16.0 N	\$	-	Width (m	Bars <i>I</i> I	one
					SIT	E R	EFE	RENC	ING					
Site Length (n NID: NID Map:	n): 100 3121 093K.0		GI	ess: B SUTM (2 d UTM (2	EN): 10.3	325498	.60426 .60426	64	-		Fish Card: : C016 Age			Class: IS Consul
Chai Avg Channel Avg Wetted		:			Flow Stag I Depth (n	n):		Avg Grad	od Sign: lient (% 'urbidit	):		C	Tem	ip /C/: pH: tivity:
	•		•	-			COV	'ER						
Cover Total:		Type:	SWD	LWD	В	С	DP	OV	IV	_ i	B SHP: LB Tex:	F	RB SHP RB Tex RB RIP	:
Canopy:	Loc	P/S/O:	LWD [	Distr:			ISV (	(NAMV):		_	LB RIP: LB STG:		RB STG	
Bed Subs			D (c	•	M	orph:	RPH (		ttern:		Confine	ment:		Coupling
Bed Subst Si	ubdom:	elght (m)	D (c D90 (c Length (m)	•	M	orph: sturb:	<b>∄ΑΤ</b> Ι	Pa	0-		Bars:	ment: JTM (ZEN	l) F	Coupling
Bed Subst Si	ubdom:		D90 (c	m): Photo	M Dis	orph: sturb: # E	EATI	Pa Isl	ttern: ands:	) NS	Bars:		i) F	
Bed Subst Si	Type H	(m)	D90 (c	m): Photo	M Dis	orph: sturb: FE	EATI	Pa Isl URES Comment	ttern: ands:	) N S Total Fish	Bars:	JTM (ZEN	ength	
Bed Subst Si	Type H	(m)	D90 (c	Photo S A	M P L I	orph: sturb: FE NG	EATI C SPE Pulse	Pa Isl URES Comment COMMENT	ATIC	Total	Bars: GIS L Min Length	JTM (ZEN	ength	ield UTM
Bed Subst Si	Type H	(m)	D90 (c	Photo S A Voltage (V)	M P L I	orph: sturb:  FE  NG ency   1 z)	SPE Pulse (µs)	Pa Isl URES Comment COMMENT	ATIC	Total Fish	Bars: GIS L Min Length	JTM (ZEN	ength	ield UTM
Bed Subst Si	Type H	(m)	D90 (c	Photo S A Voltage (V)	M PLI Freque (Hz	orph: sturb:  FE  NG ency   1 z)	SPE Pulse (µs)	Pa Isl URES Comment COMMENT	ATIC	Total Fish	Bars:  GIS L  Min Length (mm)	JTM (ZEN	ength	ield UTM
DWNer	Type H  Type H  Graph (Sec)	EF di	D90 (c	Photo S A Voltage (V)	M P L I Freque (H:	orph: sturb:  FE  NG ency z)	SPE Pulse (µs)	Pa Isl URES Comment COMMENT	ATIC	Total Fish	Bars:  GIS L  Min Length (mm)	JTM (ZEN	ength	ield UTM
DWNer	Type H  Type H  Graph (Sec)	EF di	D90 (c	Photo S A Voltage (V)	M P L I Freque (H:	N:G ency	SPE Pulse (µs)	Pa Isl URES Comment COMMENT	ATIC	Total Fish Cor	Bars:  GIS L  Min Length (mm)	JTM (ZEN	ength	ield UTM
DWner SITE	Type H  Type H  Graph (Sec)	EF di	D90 (c	Photo S A Voltage (V)	M P L I Freque (H:	N:G ency	SPE Pulse (µs)	Parisit URES Comment  COMMENT  COMMENT  Species  TOS	ATIC	Total Fish Cor	Bars:  GIS L  Min Length (mm)	JTM (ZEN	ength	ield UTM
Downer SITE  Doverwintering habitat  Rearing habitat	Type H  Type H  Graph (Sec)	EF di	D90 (c	Photo S A Voltage (V)	M P L I Freque (H:	N:G ency	SPE Pulse (µs)	Parisit URES Comment  COMMENT  COMMENT  COMMENT  TOS	ATIC	Total Fish Cor	Bars:  GIS L  Min Length (mm)	JTM (ZEN	ength	ield UTM
Dwner SITE  Dverwintering habitat  Rearing habitat  Spawning habitat	Type H	EF di	D90 (c	Photo S A Voltage (V)	M PLI Freque (H:	orph: sturb: FE  NG ency   n   no s	SPE SPE (µs)	Parisite Par	ATIC Life Stage	Total Fish Cor	Bars:  GIS L  Min Length (mm)	JTM (ZEN	ength m)	Activity

Site = "mouth"

### BFP FFHI 2003/04 - Pendleton Resampling

Project WSC: 480

WATERSHED REFERENCING

Gazetted Name: Local Name: Reach #: 1 Site #: 122

WSC: 480-870717

52537 ILP Map: 93K.052 ILP:

REACH INFORMATION

BEC Zone: SBS Reach UTM (ZEN): 10.324656.6042089. Air Photo #: BCC98023: 17 Setting: VW Order: 2 US Elevation (m): 880 Length (km): 1.18 Floodplain Width (m): None

Open Water: Bars: Magnitude: 2 DS Elevation (m): 714 Gradient (%): 14.1 Α Channel Pattern: SI Coupling: CO Disturbance: Rip Veg: C

Land Use: OT Confinement: CO Valley Flat: N N Islands:

#### SITE REFERENCING

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

Crew: SR/MJ

NID Map: 093K.052 Field UTM (ZEN): 10.325638.6042601.

#### CHANNEL

Channel Status: Flow Stage: Flood Signs: None Temp /C/: 11 Avg Pool Depth (m): 0.05 Avg Channel Width (m): 1.42 Avg Gradient (%): 8.75 pH: 8.10

Avg Wetted Width (m): 0.27 Avg Bankfull Depth (m): 0.27 **Turbidity:** Conductivity: 90

#### COVER

LWD В С DP I۷ LB SHP: **RB SHP:** V SWD Cover Type: N N Ν LB Tex: FC RB Tex: FC Amount: Ν N Ν Total: Loc P/S/O: LB RIP: S RB RIP: S ISV (NAMV): LB STG: RB STG: NA LWD Distr: F/E NA Canopy: 41-70%

### MORPHOLOGY

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

#### FEATURES

NID MAP	NID	Туре	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		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.
	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.

### 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. Setting: VW BEC Zone: Air Photo #: BCC98023: 17 Floodplain Width (m): None Order: 1 US Elevation (m): 920 Length (km): 2 04 Magnitude: 1 DS Elevation (m): Gradient (%): Open Water: A Bars: 9.85 Channel Pattern: SI Rip Veg: C Coupling: CO Disturbance:

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 _		Type:	SWD	LWD	В	С	DP	OV	IV	LB SHP:	V	RB SHP:	U	
Total:	A	mount:	Т	Т	T	T	D	S	N	LB Tex:	F	RB Tex:	F	
	Loc	: P/S/O:	P	Р	P	Р	P	Р		LB RIP:	M	RB RIP:	M	
Canopy:	41-70%		I WD I		F/F		ISV (NA	MAV).	N	I R STG:	MF	RR STG:	ME	

#### MORPHOLOGY

Bed Subst Dom: D (cm): Morph: Pattern: SI Confinement: OC Coupling: DC **Bed Subst Subdom:** С D90 (cm): 16 Disturb: islands: N Bars: N

#### FEATURES

NID MAP NID	Туре	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 distance (m)	Voltage (V)	Frequency (Hz)	Pulse (µs)	Species	Life Stage		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

# BFP FFHI 2003/04 - Pendleton Resampling

Project W	ISC:	480													
					W.	ATEI	RSHE	D RE	FER	ENCII	NG				
Gazetted N	Name: 80-8768	93			Loca	i Name	:				React	h #:	1	Site #:	124
ILP:		42	501		ILP f	Map: 9	3K.042								
						RE.	ACH	INFO	RMA	TION					
	Order: gnitude	1 : 1	U	S Elevat	ion (m): ion (m):	770 714	noto #:	BCC980: Length Gradier	(km): nt (%):	0.30 18.7		Open W	ain Width ater:	A Bars:	
Channel i	raπern nement				oupling: lev Flat:			Disturb	oance: lands:	N			Rip Veg: and Use:	S NO	
					•		TE R	EFEF	RENC	ING					
Site Leng NIC NID I		10 31: 093K	24	GI	•	•	0.327877 0.327877	2003-07 7.6041563 7.6041564 HANN	3 4.	Time: Agency Crew:	Code:	Fish Ca C016 /		FPC C ame: FINS	lass: S6 Consulting Ltd
-		/idth (r	ıs: n): 0.62 n): 0.52		Avg Poo g Bankful	•	(m): 0. (m): 0	.1	Avg Grad	od Signs dient (%) Furbidity	: 5	*************	***************	Temp Conducti	pH: 8.10
								COVE	: R		-				
Cover Total:	N		Type: \mount: c P/S/O:	SWD N	LWD N	B N	C N	DP N	OV N	N N	LB	SHP: Tex: B RIP:	V F M	RB SHP: RB Tex: RB RIP:	V F M
Canop	y: 41	-70%		LWD	Distr:	F/E		ISV (N	AMV):	Α	LB	STG:	MF	RB STG:	MF
							MOI	RPHO	FOG.	Y					
Bed Bed Sub	Subst I ost Sub		F NA	D (c D90 (c	•		Morph: Disturb:	RP	isi	ttern: ands:	SI N	Confli Bars:	nement: N	oc <b>c</b>	oupling: DC
	,						- FI	EATU	(t.)::::::::::::::::::::::::::::::::::::						
NID MAP	NID	Туре	Height (m)	Length (m)	Photo			Coi	mment			GI	S UTM (Z	EN) Fie	id UTM (ZEN)
				*********	10000000000000		000000000000000			000000000000000000000000000000000000000	*********				

### SAMPLING SPECIFICATIONS

Capture Method		EF distance (m)	Voltage (V)	Frequency (Hz)	Puise (µs)	Species	Life Stage		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	deg
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

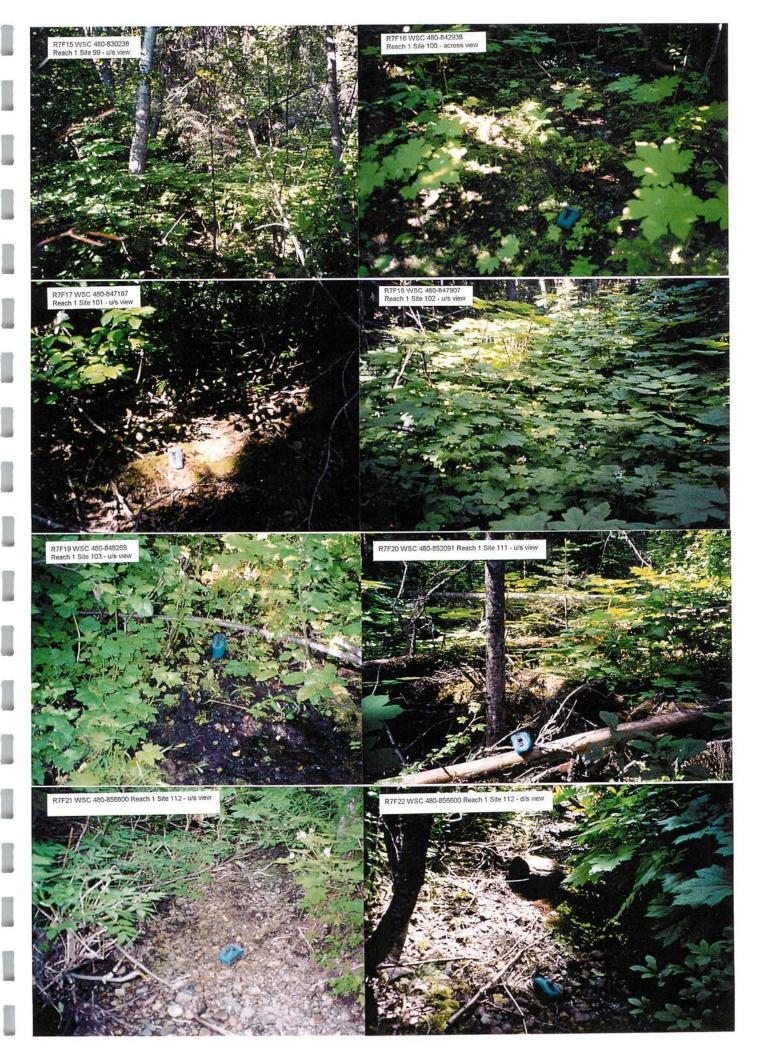
• Appendix II: Photographs

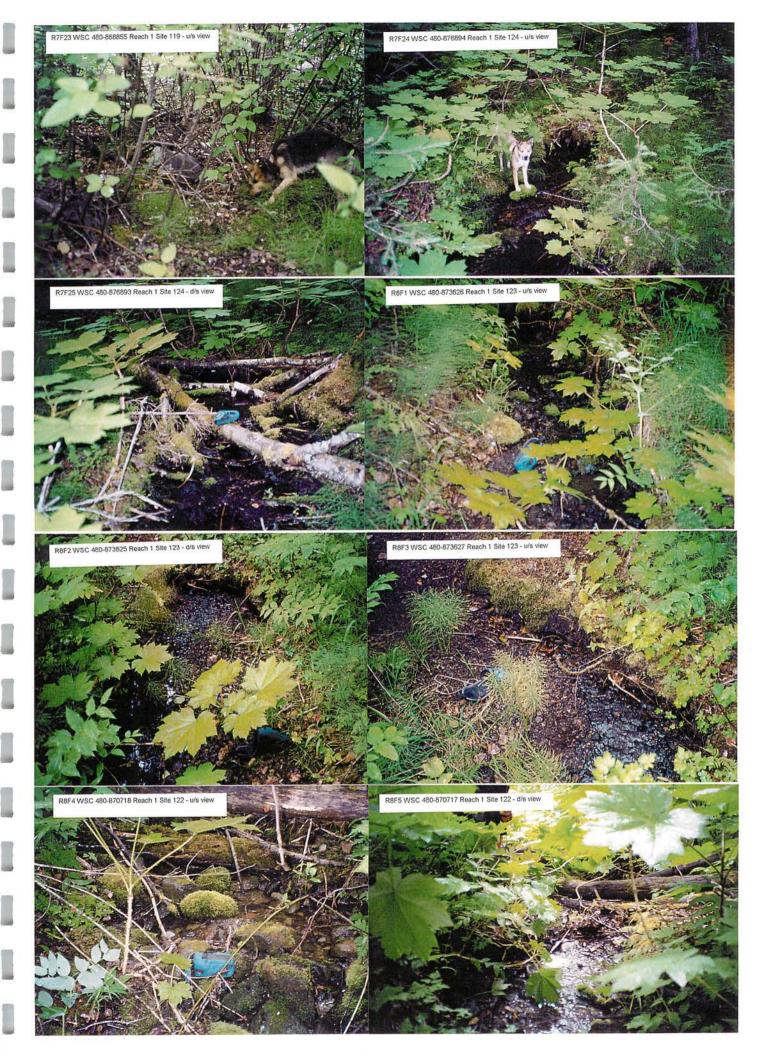
### index of Photos Arranged by Roll and Frame See reach/Site Summary for Site Photo Reference Information

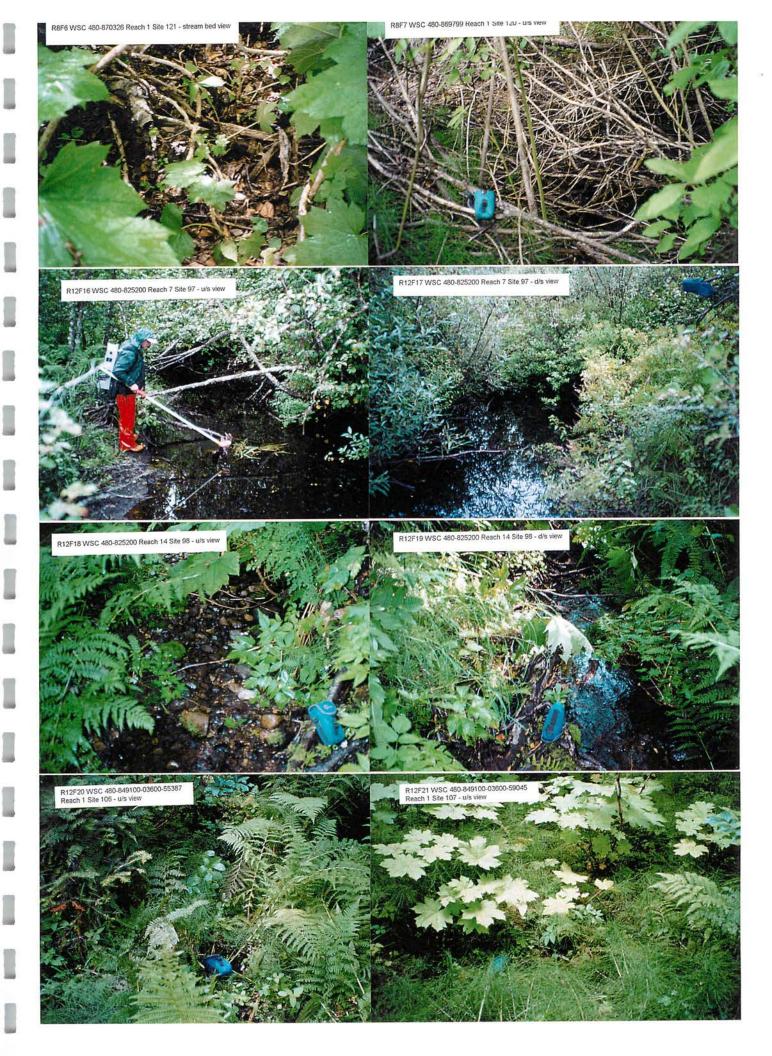
Roll #	Frame #	Neg #	CD #	Image #	site #	wsc	Gazetted/L ocal Name	ILP Map	ILP	Reach		Owner	Focal Length	Date	Scale/Comment
7	15	15	2	161	99	480-830238		93K.052		1	U	SITE	STD	2003-07-16	
7	16	16	2	162	100	480-842938	_	93K.052		1	Х	SITE	STD	2003-07-16	
7	17	17	2	163	101	480-847187		93K.052		1	U	SITE	STD	2003-07-16	
7	18	18	2	164	102	480-847907		93K.052		1	U	SITE	STD	2003-07-16	
7	19	19	2	165	103	480-848269		93K.052	52513	1	U	SITE	STD	2003-07-16	
7	20	20	2	166	111	480-852091		93K.052	52523	1	U	SITE	STD	2003-07-16	
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	
7	23	23	2	169	119	480-868855		93K.052		1	U	SITE	STD	2003-07-16	
7	24	24	2	170	124	480-876893		93K.042		1	U	SITE	STD	2003-07-16	
7	25	25	2	171	124	480-876893		93K.042	42501	1	D	SITE	STD	2003-07-16	
8	1	1A	2	172	123	480-873625		93K.042	42500	1	U	SITE	STD	2003-07-16	
8	2	2A	2	173	123	480-873625		93K.042	42500	1	D	SITE	STD	2003-07-16	
8	3	3A	2	174	123	480-873625				1	U	SITE	STD	2003-07-16	cam bag - FSB in features
8	4	4A	2	175	122	480-870717		93K.052		1	U	SITE	STD	2003-07-16	
8	5	5A	2	176	122	480-870717		93K.052		1	D	SITE	STD	2003-07-16	
8	6	6A	2	177	121	480-870326		93K.052	52536	1	BD	SITE	STD	2003-07-16	
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	
12	17	17	3	277	97	480-825200	Sag C.			7	D	SITE	STD	2003-08-11	
12	18	18	3	278	98	480-825200	Sag C.			14	U	SITE	STD	2003-08-11	
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		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	
12	22	22	3	282	108	480-849100-03600				3	U	SITE	STD	2003-08-10	
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	
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	
13	2	2A	3	290	105	480-851000				4	D	SITE	STD		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	
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	
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 #	lmage #	site	wsc	Gazetted/L ocal 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	Ü	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

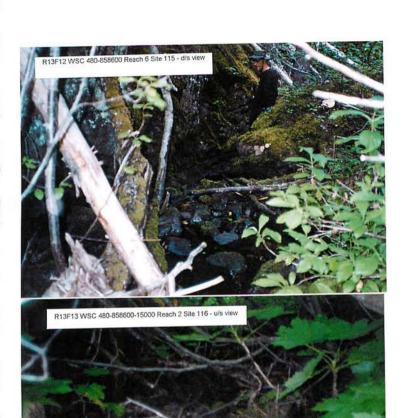


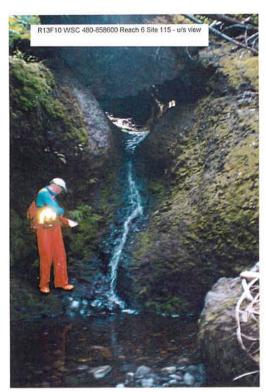
















Reconnaissance (1:20,000) Fish and Fish Habitat Inventory

Resampling in the Pendleton Sub-unit 2003/04

• Appendix III: Hardcopy Maps