

**Reconnaissance (1:20,000) Fish and Fish Habitat Inventory
of
Clore River Planning Unit
WSC: 440 - 256900**

Prepared for:

Skeena Cellulose Inc.
P.O. Box 3000
Terrace, BC
V8G 4C6

Prepared by:



TRITON

Environmental Consultants Ltd.

P.O. Box 88
Terrace, B.C., V8G 4A2
Tel: (250) 635-1494
Fax: (250) 635-1495

Approved by:

(Dave Gordon, A.Sc.T.)

January 21, 1999

PROJECT REFERENCE INFORMATION

FRBC Project Number	SBM98311
FDIS Project Number	06-ZYMO-0000-0325-1999
MELP Project Number	SCI-C172-002-1999
MELP Region	Skeena Region (6)
MELP District	Kalum
FW Management Unit	6-09
Fisheries Planning Unit	North Coast
DFO Sub District	#4B
Forest Region	Prince Rupert
Forest District	Kalum Forest District
Forest Licensee	Skeena Cellulose Inc.

WATERSHED INFORMATION

Watershed Group	Zymoetz Group
Watershed Name	Clore River
Watershed Codes	440-256900-
UTM at Mouth	09.6034387.562263
Fish Species	CH, CO, ST, RB, CT, DV, MW, BT
Project Area	± 41,600 ha
Biogeoclimatic Zone	CWH, MH
Total of All Stream Lengths	1140 km
Stream Order	5th order
NTS mapsheets	93L/5, 103I/8
TRIM Mapsheets	103I.030, 040, 050, and 93L.011, 021, 031, 041
Air Photos	BC88017:48-50, BC88019:215-225, 90-100, 50-60, BC88018: 190-210, BC88017: 250-260, Bc 88016:180-223

SAMPLING DESIGN SUMMARY

Total Number of Reaches	1451
Sample Sites	44
Survey Dates	October 14-19, 1998

CONTRACTOR INFORMATION

Project Manager

Dave Gordon, A.Sc. T
Triton Environmental Consultants
Box 88, Terrace, B.C., V8G 4A2
(250) 635-1494

Field Crew

B. Williams, M. Prins, S. Jennings, T. Millen

Data Entry

M. Prins and S. Buchanan

Report Prepared by

S. Buchanan and D. Gordon

Inventory Mapping

M. Patterson, K. Kennes, J.Link, E. Lem

Maps Prepared by

J. Link, E. Lem
Triton Environmental Consultants Ltd.
120-13511 Commerce Parkway
Richmond, BC V6V 2L1
(604) 279-2093

DISCLAIMER

The Province has not accepted the contents of this product for the purposes of the Forest Practices Code, and reserves the right to dispute the validity of summarized results. The Province does not necessarily agree with the classification assigned to any individual stream reach, for use in logging plans, silviculture prescriptions or any other application.

ACKNOWLEDGMENTS

Funding for this inventory was provided by Forest Renewal BC - a partnership of forest companies, workers, environmental groups, First Nations, communities and government. Forest Renewal BC funding - from stumpage fees and royalties that forest companies pay for the right to harvest timber on Crown lands - is reinvested in the forests, forest workers and forest communities.

We would like to thank Brad Pollard and Stacey Brown of Acer Resource Consulting Ltd., who provided assistance throughout the project, quality assurance reviews of the various phases of the project and administered the contract. We would also like to thank Paul Giroux, Fisheries Inventory Specialist MELP, Skeena Region.

TABLE OF CONTENTS

Project Reference Information	ii
Watershed Information	ii
Sampling Design Summary	ii
Contractor Information	iii
Disclaimer	iv
Acknowledgments	iv
List of Tables	vi
List of Figures	vi
List of Appendices	vi
List of Attachments Available at MELP Office	vi
 1. INTRODUCTION	 1
1.1 Project Objectives	1
1.2 Study Area and Access	1
2. RESOURCE INFORMATION	3
2.1 Fish Species and Distribution	3
2.2 Development and Land Use	3
2.3 First Nations Uses/Harvest	3
3. METHODS	3
3.1 Mapping	4
3.2 Changes To Methodology	5
3.2.1 Phase 2	5
3.3 Field Assessments	5
3.4 Fish Sampling	5
4. RESULTS AND DISCUSSION	6
4.1 Logistics	6
4.2 Inventory Data Summary	6
4.3 Fish Habitat and Distribution	7
4.3.1 Clore River	7
4.3.2 Clore River Tributaries	7
4.4 Fish captured, species, stage and size range	8
4.5 Significant Features and Fisheries Observations	9
4.5.1 Fish and Fish Habitat	9
4.5.1.1 Rearing	9
4.5.1.2 Spawning	10
4.5.1.3 Overwintering	10
4.5.2 Habitat Protection Concerns	10
4.5.3 Fisheries Sensitive Zones	10
4.5.4 Fish above 20% Gradients	10
4.5.5 Rehabilitation/Enhancement Opportunities	10
4.6 Fish Bearing Status	10
4.6.1 Fish Bearing Reaches	10
4.6.2 Non Fish Bearing Reaches	11
4.6.3 Follow-up Sampling	11
5. REFERENCES	13
6. PERSONAL COMMUNICATIONS	14

LIST OF FIGURES

Figure 1. Project overview map, Clore River planning unit.....	2
--	---

LIST OF TABLES

Table 1: List of field equipment used for stream inventory in the Clore River planning unit.	6
Table 2: Sites determined to be ‘No Visible Channel’ during field assessments in the Clore River planning unit.	6
Table 3: Fish distribution limits for major basins within the Clore River planning unit.	8
Table 4: Summary of fish data from fish captured within the Clore River planning unit.....	9
Table 5: Summary of data from fish bearing reaches in the Clore River planning unit.	11
Table 6. Non-fish bearing reach table for the reaches within the Clore River planning unit.....	12

LIST OF APPENDICES

Appendix I : FDIS Summary: Reach Cards, Site Cards and Fish Collection Cards
Appendix II: Photodocumentation Spreadsheet and Thumbnail Images
Appendix III: 1:20,000 Scale Project Maps
Appendix IV: 1:20,000 Scale Interpretive Maps

LIST OF ATTACHMENTS AVAILABLE AT MELP OFFICE (SMITHERS)

Attachment I: Planning Document
Attachment II: Field Notes
Attachment III: Fish Voucher Samples
Attachment IV: Photodocumentation
Attachment V: Digital Data
Attachment VI: Hardcopy FISS Update Forms

1. INTRODUCTION

1.1 Project Objectives

Triton Environmental Consultants Ltd. was contracted by Skeena Cellulose Inc. (SCI) to conduct stream inventory in the Clore planning unit. Information was collected on the biological and physical stream characteristics, fish species and fish distribution. The purpose of the Reconnaissance (1:20,000) Fish and Fish Habitat Inventory is to describe watershed-wide fish distributions and habitat characteristics for the project area.

1.2 Study Area and Access

The Clore River is a fifth order stream which flows into the Zymoetz (Copper) River approximately 35.5 km upstream from the Skeena River. The study area includes tributaries to the Clore River downstream of the Burnie River, a major right bank tributary located at approximately 43 km upstream from the Copper River confluence. Figure 1 is a project overview map showing the study area boundary and the location of the Clore River.

Access into the Clore watershed is by the Copper River Forest Service Road (8 km east of Terrace on Hwy 16) to the Clore River Forest Service Road, which is on the right side at approximately 35.5 km. Access for this study was by both truck and helicopter from Terrace.

Figure 1. Project overview map, Clore River planning unit.

2. RESOURCE INFORMATION

2.1 Fish Species and Distribution

Historical fish distribution data was taken from 1:50,000 FISS maps 93L/5,103I/8 and findings presented by Bustard (1996) in: Overview Fisheries Assessment of the Lower Clore River and Tributaries. The following fish distributions were noted:

Clore River

- Coho (CO), Dolly Varden (DV), rainbow trout (RB), steelhead (ST), mountain whitefish (MW) and chinook (CH) - throughout Reaches 1- 4
- RB(ST), CH and DV - throughout Reaches 1-5
- RB (ST) and DV to a confined canyon section in Reach 6.
- RB, CT, MW and DV exist in the Burnie River system, a tributary of the Clore River upstream of the Reach 6 canyon. It is unknown whether Clore River steelhead migrate upstream through the canyon.

Clore River Tributaries

- Trapline Creek - RB, CO, CH, DV presence to series of falls (1.5m and 3m) at ~ 1.4 km, DV present to 2m falls at 7 km upstream.
- Thomas Creek - RB, CO, CH, DV, MW to 7m debris jam at approximately 1 km.
- Moraine Creek - RB presence to 10m falls at 0.7 km
- Elf Creek - RB, DV, CO to 4m falls at 0.1 km
- Unnamed Creek 440-256900-46700 - inferred fish presence to 2m falls at 2.5 km

2.2 Development and Land Use

Forest Harvesting in the Clore watershed is managed by Skeena Cellulose Inc. A main forestry road exists on the left bank of the Clore River from the confluence with the Copper River to approximately 35 km upstream.

2.3 First Nations Uses/Harvest

No First Nations fisheries harvests are known for the Clore watershed.

3. METHODS

Standard methodology for performing stream inventories as outlined by the Province of British Columbia Resources Inventory Committee (RIC) in *Reconnaissance (1:20 000) Fish and Fish Habitat Inventory: Standards and Procedures* (RIC, 1998) was followed. The reconnaissance fish and fish inventory is a sample-based survey covering whole watersheds as defined from 1:20,000 scale maps and air photos. The project covers six phases as listed below:

Phase 1: Data Review: A review of all available background information was completed. All known fisheries information is summarized in this report; new data were transcribed onto the 1:20,000 Terrain Resource Information Management (TRIM) maps and

1:50,000 National Topographic System (NTS) maps to update the Department of Fisheries and Oceans Fisheries Information Summary System (FISS) database.

- Phase 2: Classification and Sampling Design: A comprehensive map and air photo review was completed for all waterbodies identified on 1:20,000 TRIM maps. Reach characteristics (gradient, order, pattern, confinement) were recorded for all streams within the project area and recorded on the Reach Planning Table. These data were used to generate a sample size (a subset of reaches to be sampled) within the working area based on RIC guidelines. The Reach Sampling Summary Report was generated which provides a summary of the number of reaches of each type (based on gradient class, size and pattern/confinement) to be sampled.
- Phase 3: Project Plan: A field sampling plan was developed to sample sites in a variety of stream gradients and stream orders. The Reach Sampling Summary Report was used as a guide in selection of sample sites. The purpose of the plan was to describe watershed wide fish distribution and not necessarily to sample all potential fish bearing reaches. Data from Phases 1 and 2, and the Project Plan were presented to and approved by Brad Pollard, contract monitor and Paul Giroux, MELP Fisheries Inventory Specialist.
- Phase 4: Field Inventory: Field sampling of selected sites was completed from October 14-19, 1998.
- Phase 5: Data Entry and Analysis: Field sampling data (including site cards, fish cards, and photodocumentation) were entered into the MELP Field Data Information System (FDIS) database. 1:50,000 scale NTS maps of the study area were updated with new information as per the FISS Data Compilation and Mapping Procedures (DFO, 1997).
- Phase 6: Reporting and Final Mapping: Field and office data were mapped using Arc View and Arc Info software, photographs were printed, and draft and final reports were completed.

3.1 Mapping

Digital and hardcopies of the following 1:20,000 scale project and interpretive maps were produced: 103I.030, 040, 050, and 93L.011, 021, 031, 041. Interpretive maps show stream classification for reaches where fish presence or absence was confirmed. Confirmed fish presence is indicated by solid red lines, confirmed fish absence is indicated by solid blue lines. Fish presence or absence was determined through background information, fish sampling, field observations, map/field gradient, or a combination thereof. Inferred fish presence or absence is indicated by dashed red or light blue lines on the interpretive maps provided (Appendix IV).

3.2 Changes To Methodology

3.2.1 Phase 2

The required number of sample sites as determined by the FDIS Reach Sampling Summary were chosen with bias (rather than randomly) to incorporate biological concerns (fish distribution), background fisheries information, access issues and forest licensee planning. Biased or discretionary sample site selection was implemented to reduce redundancy in sampling effort, because extensive sampling had occurred previously in the watershed (Bustard, 1996). Discretionary selection of sample sites allowed for sampling in specific reaches as recommended in the Bustard study, and in areas where fisheries information was required for forest development planning.

3.3 Field Assessments

The watershed was surveyed from October 14-19, 1998. Field assessments followed procedures outlined in Reconnaissance (1:20 000) Fish and Fish Habitat Inventory: Standards and Procedures (RIC, 1998). Generally, the process followed in the field was to:

- assess the watershed during a helicopter overflight to confirm reach boundaries, potential barriers, identify access points, and photograph reaches at a watershed scale,
- assess each reach on the ground by completing a standard site card, sampling for fish presence, completing a fish collection card and photographing representative habitats,
- identify key features such as barriers to fish migration, spawning locations and bridges, and
- photograph and recorded features on site cards with a unique numeric identifier (NID).

Channel morphology was determined using the *Channel Assessment Procedures Guidebook* (MoF, 1996) as a guide. Habitat quality was assessed for rearing, spawning, overwintering and cover. Wildlife observations were noted on site cards. Table 1 provides a list of equipment used. Details on cameras, film and lenses used for photodocumentation are in Appendix II, on Photodocumentation Form 1.

3.4 Fish Sampling

Fish presence was determined by electrofishing at least 100m² or 10 bankfull widths of habitat in each reach using a Smith Root Model 12B electroshocker. Captured fish were measured (fork length) and keyed out to species (if necessary) using the *Field Key to the Freshwater Fishes of British Columbia* (McPhail and Carveth, 1994). No secondary sampling method was required during field assessments

Table 1: List of field equipment used for stream inventory in the Clore River planning unit.

Measurement	Units / Accuracy	Instrument	Make and Model
Channel Width/ Wetted Width	m (to nearest 0.1m)	Tape measure	Eslon 30m tape
Gradient	% (to nearest 1%)	Clinometer	Suunto PM5 360 PC
Residual Pool Depth	m (to nearest .01m)	Folding Meter Stick	N/A
Bankfull Depth	m (to nearest 0.1m)	Folding Meter Stick	N/A
Temperature	⁰ C (to nearest 1 ⁰ C)	Alcohol Field Thermometer	N/A
Water Quality			
pH	to nearest tenth	Hand-held pH meter	LaMotte PHTestr 2 (Waterproof)
Conductivity	μ S/cm	Hand-held Conductivity Meter	LaMotte TDSTestr 3 with ATC
Fish Sampling			
Electroshocker	Smith Root Model 12B		

4. RESULTS AND DISCUSSION

4.1 Logistics

No major logistical problems were encountered during field sampling. In some cases, fish presence/absence could not be confirmed, due to site conditions at the time of survey (i.e.: dry stream channel). In these cases fish presence/absence was inferred based on: habitat quality, seasonal habitat availability, gradient, access, known fish presence downstream and professional judgment.

4.2 Inventory Data Summary

Forty-four sites were sampled within Clore River planning unit on October 14-19, 1998. Eight sites on streams shown on TRIM maps were found to be 'no visible channel', or non-existent, in the field (Table 2). Fish were captured or observed at 12 sites, 16 sites were found to be non fish bearing and at 8 sites no fish were captured but fish presence was inferred.

Table 2: Sites determined to be 'no visible channel' during field assessments, Clore River planning unit.

ILP	ILP MAP	Site	NID MAP	Date	Reach
25	103I.050	6114	103I.050	1998/10/16	1
53	103I.050	6111	103I.050	1998/10/15	1
54	103I.050	6110	103I.050	1998/10/15	1
56	103I.050	6109	103I.050	1998/10/15	1
88	103I.050	9114	103I.050	1998/10/15	1
90	103I.050	9113	103I.050	1998/10/15	1
635	93L.021	6123	93L.021	1998/10/16	1
636	93L.021	9112	93L.021	1998/10/16	1

Project inventory maps are presented in Appendix IV. Individual site and fish card data are presented in Appendix I. Appendix II contains the thumbnail images and photodocumentation spreadsheet for each site.

4.3 Fish Habitat and Distribution

4.3.1 Clore River

The Clore River planning unit is typified by mountainous terrain with steep streams. The distribution of fish and fish habitat is limited by the physical constraints of the landscape. Important fish habitat occurs in the floodplain of the Clore River mainstem, and any development activities (road building and maintenance) within the valley bottom of the Clore should consider potential impacts to fish and fish habitat. The Clore River mainstem, although not formally assessed in this study, contains important spawning and rearing habitats for chinook and steelhead, and to a lesser extent, coho. Habitat in the Clore River mainstem is typified by canyon sections and rapids with high velocity water (habitats preferred by chinook and steelhead). Lower velocity and off channel areas (habitats preferred by coho) are limited due to the confinement of the river. Being a glacially fed system, the overall productivity of the Clore system is probably low. However, within the Zymoetz watershed, the Clore River is probably a relatively important producer of coho, steelhead and chinook.

4.3.2 Clore River Tributaries

Fish and fish habitat within the tributary streams to the Clore River is extremely limited. All major tributary streams sampled, with the exception of Trapline Creek, were barren of fish upstream of the first major barrier (usually occurring within the first kilometer of stream) (Table 3). Important fish habitats, including chinook, coho and steelhead spawning and rearing areas, and steelhead overwintering areas, exist within the accessible first reaches of the major sub-basins. Trapline, Moraine and Thomas Creeks in particular, have important fish habitats for coho, steelhead and chinook within the first reach. Dolly Varden were found in Trapline Creek to a 2m falls at approximately 7 km (end of fish use). A 3m falls at 1.2 km on Trapline Creek is the suspected upstream limit for anadromous fish use in this creek.

Moraine, Thomas and Trapline Creeks have habitats capable of supporting fish in barren reaches upstream of barriers. All three streams have extensive low gradient sections with adequate spawning, rearing and overwintering habitats, although no fish occur in these reaches.

A 7m high debris jam and bedrock falls is located at ~1 km on Thomas Creek, and currently no fish are found upstream of the falls. Extensive sampling upstream of the debris jam/falls during this study (4 sites) and by Bustard and Associates in the 1970's, 1991 and 1995 (Bustard, 1996) resulted in no fish captures. In most circumstances this would provide sufficient evidence to support the classification of non- fish bearing upstream of the barrier. Anecdotal evidence, however, suggests that fish (probably coho) have had access above the falls/jam in the past (Bustard, 1996 and Pollard, B. pers. comm.). Fish may be able to ascend the falls under certain water conditions (Pollard, B. pers. comm.), although this has not occurred for at least several years. The Ministry of Environment has plans to remove some of the debris at the barrier in an attempt to improve fish access into the upper

reaches (C. Broster, pers. comm.). Due to the uncertainty surrounding this issue, and the proposed plans for barrier removal, the stream has been classified as ‘inferred fish bearing’ with the recommendation that regular re-sampling occur prior to any forest development in this area.

Many of the smaller tributary streams to the Clore River that were not sampled are too steep to support fish. However, they may have sections of stream habitat less than 20% gradient which under the Forest Practices Code would be candidates for field sampling. These stream sections are highly unlikely to support fish, unless they are immediately adjacent to confirmed or inferred fish streams as identified on the TRIM maps accompanying this report. The most notable limits to fish distributions within the study area are described in Table 3. Fish distribution limits and barriers noted for Thomas, Trapline, Moraine and Unnamed Creek (WC 440-256900-47600) are consistent with information gathered in the background review.

Table 3: Fish distribution limits for major basins within the Clore River planning unit.

Stream/Watershed Code	Barrier/Location	Comment
Thomas 440-256900-03700	7m debris jam/falls at ~1 km	Currently suspected end of fish use at 1 km, no resident population upstream, however plans to remove barrier exist. Inferred fish presence upstream of barrier.
Trapline 440-256900-03700	3m falls at 1.2 km	End of anadromous fish use
Trapline 440-256900-03700	2m falls at ~ 7 km	End of fish use
Moraine 440-256900-07000	10m falls at 0.7 km	End of fish use
Unnamed 440-256900-02500	Confined and steep at 0.2 km, 40m falls at 0.8 km	End of fish use at 0.2 km
Unnamed ILP 241	Gradient barrier at 0.2 km	End of fish use.
Unnamed 440-256900-30800	10m falls at 0.1 km	End of fish use
Unnamed 440-256900-37300	8m falls at 0.6 km	End of fish use
Unnamed 440-256900-47600	Confined canyon at 1.2 km, 2m falls at 2.5 km	Suspect end of fish use at canyon, confirmed no fish use upstream of falls.

4.4 Fish captured, species, stage and size range.

Fish captured within the Clore system included bull trout, Dolly Varden, coho and rainbow trout. At least two (and possibly 4) age classes of bull trout, rainbow trout and Dolly Varden were captured (Table 4), although length-at age data are inferred only (Scott and Crossman, 1973) and may not accurately reflect growth and age of Clore River populations.

Rainbow trout captured (assumed to be steelhead) ranged in fork length from 34-130mm (n=9). Average smolt age for Copper watershed steelhead is 3.6 years, with 63.7 % spending 4 years and 35.5% spending 3 years in fresh water (Lewis and Buchanan, 1998), however no length-at-age data were available for comparison.

Bull trout captured ranged in fork length from 100-160 mm (n=3); Dolly Varden ranged from 32-118 mm (n=11). Bull trout and Dolly Varden in the 100 mm range were suspected adults with stunted growth (a result of low productivity of tributary streams). One juvenile coho was captured with a fork length of 95 mm, and was assumed to be a 1+ age fish. Fish captures of each species were insufficient to present biologically meaningful length frequency histograms. Table 4 summarizes fish stage, estimated age, number and fork-length for species captured in this project.

Table 4: Summary of fish data from fish captured within the Clore River planning unit.

Species	Stage (J- juvenile, A - adult, F- fry)	Life history	Age**	Total	Mean Fork Length (mm)	Range (mm)
BT	J	Fluvial	2+	1	100	100
BT	A	Fluvial	3+	2	132	104 -160
CO	J	Anadromous	1+	1	95	95
DV	F	Fluvial	0+	1	32	32
DV	J	Fluvial	1+-2+	8	81.9	67-97
DV	A	Fluvial	3+	2	116.5	115-118
RB	F	*Anadromous	0+	4	36.75	34-41
RB	J	*Anadromous	1+	2	76	69-83
RB	J	*Anadromous	2+	3	116.7	110-130

* probably steelhead.

** Length at age data are inferred only, from Scott and Crossman, 1973 and are not specific to Zymoetz watershed populations. Age/length relationships are highly variable.

4.5 Significant Features and Fisheries Observations

4.5.1 Fish and Fish Habitat

Fish habitat within the lower Clore watershed is mostly limited to the mainstem and short sections of tributary habitat within the valley bottom. Fish distribution does not extend beyond the first kilometer (or first major barrier) on tributary streams (with the exception of Trapline Creek). A barrier on Thomas Creek at 1 km is currently the end of fish use for the system. However, plans to remove the barrier exist and therefore the stream is classified as 'inferred fish bearing' with a recommendation for re-sampling whenever forest development plans involve this area. Rearing, spawning and overwintering habitats for salmonids outside of sampled reaches are described below.

4.5.1.1 Rearing

Critical juvenile rearing areas for steelhead are found throughout the mainstem Clore River and in the lower reaches of Trapline Creek (Lewis and Buchanan, 1998). These reaches probably also provide important rearing habitats for chinook juveniles. Pollard *et al.* (1995) noted an important juvenile coho and steelhead rearing area in a mainstem side channel at the confluence of Elf Creek.

4.5.1.2 Spawning

Steelhead spawning occurs in the lower reaches of Trapline Creek, Thomas Creek and Elf Creek (Bustard, 1996, Lewis and Buchanan 1998). Chinook spawning occurs in the lower 3 km of the Clore River mainstem and in Reach 1 of Thomas Creek and Trapline Creeks (Bustard, 1996, FISS maps 93L/5, 103I/8). Coho spawning occurs in lower Thomas Creek, an adult escapement of approximately 100 fish was recorded for 1998 (Culp, J. pers. comm).

4.5.1.3 Overwintering

Important overwintering habitats exist for steelhead within the Clore River mainstem downstream of Trapline Creek (Lewis and Buchanan, 1998).

4.5.2 Habitat Protection Concerns

The majority of critical habitats for salmonids occur within the valley bottom of the Clore Watershed. Habitat protection concerns and impacts to the Clore River mainstem and tributaries have been identified in a previous study (Pollard *et al.*, 1995) and were not formally assessed in this study. Seasonally wetted side and off channel habitats within the Clore watershed are limited and provide important rearing areas for salmonids; efforts should be made to maintain these habitats wherever possible. A large clay slump (failed bank) located at approximately 10 km on the right bank of the Clore River is a major source of sediment to the Clore and Copper Rivers.

4.5.3 Fisheries Sensitive Zones

No fisheries sensitive zones were identified within the study area, however all seasonally wetted habitats immediately adjacent to the mainstem are potentially important fish production areas.

4.5.4 Fish above 20% Gradients

No fish were captured in habitats over 20% gradient.

4.5.5 Rehabilitation/Enhancement Opportunities

Impact and rehabilitation assessments have been conducted in the lower Clore River watershed (Pollard *et al.* 1995, Culp *et al.* 1998). Rehabilitation and enhancement projects may be initiated on the Clore system by MELP or the Terrace Salmonid Enhancement Society, including debris removal on the Thomas Creek barrier and stabilization of the failed bank at 10 km on the Clore (Culp, J. pers. comm.)

4.6 Fish Bearing Status

4.6.1 Fish Bearing Reaches

Sampled reaches in which fish were captured are outlined in Table 5, below. All fish bearing reaches are shown in solid red on 1:20,000 scale interpretive maps provided (Appendix IV).

4.6.2 Non Fish Bearing Reaches

A non-fish bearing reach table is provided for relevant reaches (Table 6). Eleven sites were classified as non-fish bearing. The 8 sites determined as 'no visible channel' in the field are not included as non fish bearing reaches. All non fish bearing reaches are shown in solid blue on 1:20, 000 scale interpretive maps provided (Appendix IV).

4.6.3 Follow-up Sampling

No follow up sampling is recommended for the Lower Clare River working unit. Sampling intensity was sufficient to determine fish distribution limits throughout the study area.

Table 5: Summary of data from fish bearing reaches in the Clare River planning unit.

Sampling Date	Species Captured	Stream Name	Watershed Code or ILP	Site	Reach	Av. Chan. Width (m)	Riparian Class (S1-S4)	Average Gradient
1998/10/15	DV	Unnamed (trib to Trapline)	93	9106	1	4.8	S3	17
1998/10/19	BT, RB, CO	Unnamed	228	9118	1	2.8	S3	1.5
1998/10/19	RB	Unnamed	241	6122	1	3.7	S3	5.5
1998/10/16	DV	Unnamed	464	6116	1	2.7	S3	1
1998/10/16	RB	Unnamed	440-256900-02500	6113	1	6.2	S2	14.25
1998/10/15	DV	Unnamed	440-256900-03700-26000	6106	1	12.85	S2	5.5
1998/10/19	RB	Moraine Creek	440-256900-07000	9115	1	8.95	S2	13
1998/10/16	RB	Unnamed	440-256900-25600	6117	1	7.6	S2	7
1998/10/14	DV	Unnamed	440-256900-34700	6102	1	9.7	S2	3
1998/10/14	BT,DV	Unnamed	440-256900-39500	6104	1	9.5	S2	4
1998/10/14	DV	Unnamed	440-256900-41700	9104	1	6.7	S2	13
1998/10/14	BT	Unnamed	440-256900-47600	9103	1	28	S1	4

Table 6. Non-fish bearing reach table for the reaches within the Clore River planning unit.

Sampling Date	Watershed Code or ILP	Stream Name	Reach	Site	TRIM Mapsheet	Capture method	Area Sampled (m ²)	Sampling Effort (seconds)	Conductivity (ΩS/cm)	Water Temp. (°C)	Turbidity	Fish Presence downstream	Obstructions	Seasonal Habitat Quality
1998/10/16	475	Unnamed	1	9110	93L.031	EF	130	120	50	5	Clear	Clore River	Flows subterranean for 100m to Clore -no access	Moderate
1998/10/14	688	Unnamed	1	6100	93L.021	EF	100	148	60	5	Clear	Clore River	Gradient barrier at 50m upstream from mouth	Poor
1998/10/14	933	Unnamed	1	9100	93L.011	EF	150	197	10	3.5	Clear	Unknown	10m falls at mouth, cascades in mainstem.	Poor
1998/10/16	440-256900-02500	Unnamed	3	9107	103I.050	EF	150	222	50	4	Clear	RB	40m falls in R2	Moderate
1998/10/15	440-256900-03700	Trapline Creek	3	6105	103I.040	EF	400	503	50	4	Clear	DV in Reach 2	2m falls (end of fish use) at downstream end of Reach 3	Excellent
1998/10/19	440-256900-07000	Moraine Creek	3	6118	103I.040	EF	550	431	10	4	Clear	RB	10m falls Reach 1	Moderate
1998/10/19	440-256900-17300	Unnamed	1	9119	93L.031	EF	200	246	60	6	Clear	Clore River	Gradient barrier from confluence	Poor
1998/10/19	440-256900-18900	Thomas	2	6119	93L.031	EF	1000	426	0	6	Turbid	Clore River	7m falls in Reach 2, 3m falls in Reach 1.	Moderate
1998/10/19	440-256900-28300	Unnamed	1	6120	93L.031	EF	600	454	10	5	Lightly Turbid	Clore River	Cascade at mouth	Fair
1998/10/16	440-256900-30800	Unnamed	1	9111	93L.021	EF	140	105	50	5	Clear	Clore River	30 m falls in Reach 1	Poor
1998/10/14	440-256900-34700	Unnamed	3	6101	93L.021	EF	408	353	30	2.5	Clear	DV in Reach 1	Extensive cascades and canyon downstream, 30m falls in Reach 2	Good
1998/10/14	440-256900-37300	Unnamed	2	6103	93L.021	EF	450	435	40	4	Moderately Turbid	Clore River	8m falls in Reach 1	Fair

5. REFERENCES

- Bustard, D. 1996. Overview Fisheries Assessment of the Lower Clore River and Tributaries. Prepared for Skeena Cellulose Inc, Terrace Operations.
- Culp, J., C. Culp and K. Sinkewicz, 1998 (Terrace Salmonid Enhancement Society) Fish Habitat Assessment and Selected Rehabilitation Prescriptions within the Zymoetz Watershed. Prepared for the Ministry of Environment Lands and Parks, Smithers, BC.
- Department of Fisheries and Oceans. 1997. Fisheries Information Summary System Data Compilation and Mapping Procedures. Federal /Provincial Fish Habitat Inventory and Information Program.
- Lewis, A.F. and S. Buchanan. 1998. Zymoetz River Steelhead: Summary of Current Data and Status Review, 1997. Skeena Fisheries Report SK-102.
- MacPhail, J.D. and Carveth, R. 1994. Field Key to the Freshwater Fishes of British Columbia (draft). Province of British Columbia, Resources Inventory Committee, Victoria, BC.
- Ministry of Environment, Lands and Parks and Department of Fisheries and Oceans. 1995. Fisheries Information Summary System (FISS) Maps (1:50,000)
- Ministry of Forests. 1996. Channel Assessment Procedures Guidebook.
- Province of British Columbia, Resources Inventory Committee. 1997. Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures (1998).
- Forest Practices Code of British Columbia, 1995. Riparian Management Area Guidebook. BC Ministry of Forests and BC Ministry of Environment, Lands and Parks, Victoria, BC.
- Pollard, B.T., J. Quigley and S. Campagna. 1995. Level 1 Fisheries Assessment for the Zymoetz River. Prepared for: The Copper River Watershed Partnership Group. Terrace, BC.
- Scott, W.B. and Crossman, E. J. 1973. Freshwater Fishes of Canada. Fisheries Research Board of Canada, Bulletin 184. Ottawa, Ontario.

6. PERSONAL COMMUNICATIONS

Broster, Chris. Senior Habitat Protection Officer. Ministry of Environment Lands and Parks, Terrace B.C. Pers. Comm. 1999.

Culp, Jim. Director, Terrace Salmonid Enhancement Society. Terrace, B.C. Pers. Comm., 1999.

Pollard, Brad. R.P. Bio., Acer Resource Consulting, Ltd. Terrace, B.C. Pers. Comm., 1999.

Appendix I : FDIS Summary: Reach Cards, Site Cards and Fish Collection Cards.

Appendix II: Photodocumentation Form 1, Photodocumentation Spreadsheet and Thumbnail Images

Date	Project_Code	Site/Nid	Nid Map	Roll	Frame	Focal	Dir	Comment	CD Number	CD Image
14-Oct-98	06-ZYMO-0000-0325-1999	9200	93L.011	26	2	STD	U	Falls 10 m	8249 3203 0360	2
14-Oct-98	06-ZYMO-0000-0325-1999	9100	93L.011	26	3	STD	D	T.M. and channel 50m u/s fo mouth	8249 3203 0360	3
14-Oct-98	06-ZYMO-0000-0325-1999	9101	93L.021	26	6	STD	D	packsack and cascades	8249 3203 0360	6
14-Oct-98	06-ZYMO-0000-0325-1999	9101	93L.021	26	7	STD	U	packsack and cascades	8249 3203 0360	7
14-Oct-98	06-ZYMO-0000-0325-1999	9100	93L.011	26	8	STD	U	vest and pools connected by overland flow and seepage	8249 3203 0360	8
14-Oct-98	06-ZYMO-0000-0325-1999	9101	93L.021	26	9	STD	U	aerial shot of barriers in channel	8249 3203 0360	9
14-Oct-98	06-ZYMO-0000-0325-1999	9100	93L.011	26	10	STD	U	waterfalls at mouth - aerial shot	8249 3203 0360	10
14-Oct-98	06-ZYMO-0000-0325-1999	9102	93L.011	26	11	STD	U	meter stick	8249 3203 0360	11
14-Oct-98	06-ZYMO-0000-0325-1999	9102	93L.011	26	12	STD	D	2 people at confluence	8249 3203 0360	12
14-Oct-98	06-ZYMO-0000-0325-1999	9102	93L.011	26	13	STD	U	B.P. and barrier 170m u/s	8249 3203 0360	13
14-Oct-98	06-ZYMO-0000-0325-1999	9103	93L.021	26	14	STD	NS	BT 160mm	8249 3203 0360	14
14-Oct-98	06-ZYMO-0000-0325-1999	9103	93L.021	26	15	STD	NS	BT 160mm	8249 3203 0360	15
14-Oct-98	06-ZYMO-0000-0325-1999	9103	93L.021	26	16	STD	NS	BT 160mm	8249 3203 0360	16
14-Oct-98	06-ZYMO-0000-0325-1999	9103	93L.021	26	17	STD	U	SJ in channel	8249 3203 0360	17
14-Oct-98	06-ZYMO-0000-0325-1999	9103	93L.021	26	18	STD	D	TM in channel	8249 3203 0360	18
14-Oct-98	06-ZYMO-0000-0325-1999	9104	93L.021	26	19	STD	U	LWD cascade	8249 3203 0360	19
14-Oct-98	06-ZYMO-0000-0325-1999	9104	93L.021	26	20	STD	D	SJ just u/s of confluence with Clore	8249 3203 0360	20
14-Oct-98	06-ZYMO-0000-0325-1999	9104	93L.021	26	21	STD	U	channel and far bank	8249 3203 0360	21
14-Oct-98	06-ZYMO-0000-0325-1999	9104	93L.021	26	22	STD	NS	DV 72mm	8249 3203 0360	22
14-Oct-98	06-ZYMO-0000-0325-1999	5007	103I.050	26	23	STD	U	SJ at falls (EFU- R2/R3 break), Trapline Creek feature NID 5007	8249 3203 0360	23
14-Oct-98	06-ZYMO-0000-0325-1999	5007	103I.050	26	24	STD	D	SJ at falls (EFU- R2/R3 break), Trapline Creek feature NID 5007	8249 3203 0360	24
15-Oct-98	06-ZYMO-0000-0325-1999	9105	103I.050	26	25	STD	U	SJ in the channel	8249 3203 0360	25
15-Oct-98	06-ZYMO-0000-0325-1999	9105	103I.050	26	26	STD	D	glove and channel and confluence with Trapline Creek	8249 3203 0360	26
15-Oct-98	06-ZYMO-0000-0325-1999	9106	103I.050	26	27	STD	NS	DV captured 20m u/s in Trapline Creek (80mm) (Btgl = 24)	8249 3203 0360	27
15-Oct-98	06-ZYMO-0000-0325-1999	9106	103I.050	26	28	STD	NS	DV captured 20m u/s in Trapline Creek (80mm) (Bstgl = 24)	8249 3203 0360	28
15-Oct-98	06-ZYMO-0000-0325-1999	9106	103I.050	26	29	STD	U	SJ in channel 130m u/s of confluence with Trapline Creek	8249 3203 0360	29
15-Oct-98	06-ZYMO-0000-0325-1999	9106	103I.050	26	30	STD	D	SJ facing downstream 100m u/s of confluence with Trapline Creek	8249 3203 0360	30
15-Oct-98	06-ZYMO-0000-0325-1999	9106	103I.050	26	31	STD	U	S3 trib which joins LP93, 60m u/s of confluence with Trapline Creek	8249 3203 0360	31
15-Oct-98	06-ZYMO-0000-0325-1999	9106	103I.050	26	32			confluence with trib ILP 093	8249 3203 0360	32
15-Oct-98	06-ZYMO-0000-0325-1999	9105	103I.050	26	33	STD	D	taken 100m u/s from the confluence with Trapline Creek	8249 3203 0360	33

Date	Project_Code	Site/Nid	Nid Map	Roll	Frame	Focal	Dir	Comment	CD Number	CD Image
15-Oct-98	06-ZYMO-0000-0325-1999	9105	103I.050	26	34	STD	D	taken 100m u/s from the confluence with Trapline Creek	8249 3203 0360	34
14-Oct-98	06-ZYMO-0000-0325-1999	6100	93L.021	40	1	STD	U	channel with MP and Brad	8249 3203 0360	36
14-Oct-98	06-ZYMO-0000-0325-1999	6100	93L.021	40	2	STD	D	anode and channel in frame	8249 3203 0360	37
14-Oct-98	06-ZYMO-0000-0325-1999	6101	93L.021	40	4	STD	U	BW in channel	8249 3203 0360	38
14-Oct-98	06-ZYMO-0000-0325-1999	6101	93L.021	40	5	STD	D	channel at POT of site with wood on both banks	8249 3203 0360	39
14-Oct-98	06-ZYMO-0000-0325-1999	6102	93L.021	40	6	STD	NS	DV 118mm	8249 3203 0360	40
14-Oct-98	06-ZYMO-0000-0325-1999	6102	93L.021	40	7	STD	U	MP in channel	8249 3203 0360	41
14-Oct-98	06-ZYMO-0000-0325-1999	6102	93L.021	40	8	STD	D	mouth of channel (confluence with the Clare River)	8249 3203 0360	42
14-Oct-98	06-ZYMO-0000-0325-1999	6103	93L.021	40	9	STD	U	MP on Left Bank	8249 3203 0360	43
14-Oct-98	06-ZYMO-0000-0325-1999	6103	93L.021	40	10	STD	D	channel	8249 3203 0360	44
14-Oct-98	06-ZYMO-0000-0325-1999	6104	93L.021	40	11	STD	U	MP on LB and cut block at bend in creek	8249 3203 0360	45
14-Oct-98	06-ZYMO-0000-0325-1999	6104	93L.021	40	12	STD	D	channel with very nice habitat	8249 3203 0360	46
14-Oct-98	06-ZYMO-0000-0325-1999	6104	93L.021	40	13	STD	NS	BT 104mm	8249 3203 0360	47
15-Oct-98	06-ZYMO-0000-0325-1999	6105	103I.040	40	14	STD	U	BW on log across banks	8249 3203 0360	48
15-Oct-98	06-ZYMO-0000-0325-1999	6105	103I.040	40	15	STD	U	channel with LWD	8249 3203 0360	49
15-Oct-98	06-ZYMO-0000-0325-1999	6106	103I.050	40	16	STD	NS	DV 93mm	8249 3203 0360	50
15-Oct-98	06-ZYMO-0000-0325-1999	6106	103I.050	40	17	STD	U	cascade	8249 3203 0360	51
15-Oct-98	06-ZYMO-0000-0325-1999	6106	103I.050	40	18	STD	D	channel with LWD across banks	8249 3203 0360	52
15-Oct-98	06-ZYMO-0000-0325-1999	6106	103I.050	40	19	STD	U	confluence with Trapline	8249 3203 0360	53
15-Oct-98	06-ZYMO-0000-0325-1999	6107	103I.050	40	20	STD	D	channel	8249 3203 0360	54
15-Oct-98	06-ZYMO-0000-0325-1999	6107	103I.050	40	21	STD	U	cascade over moss	8249 3203 0360	55
15-Oct-98	06-ZYMO-0000-0325-1999	6108	103I.050	40	22	STD	U	most apparent channel from mouth	8249 3203 0360	56
15-Oct-98	06-ZYMO-0000-0325-1999	6108	103I.050	40	23	STD	U	area of sediment and scour present on LB	8249 3203 0360	57
15-Oct-98	06-ZYMO-0000-0325-1999	6108	103I.050	40	24	STD	U	channel present u/s of disturbed fluvial fan	8249 3203 0360	58
15-Oct-98	06-ZYMO-0000-0325-1999	6112	103I.050	40	25	STD	U	with BW on log	8249 3203 0360	59
15-Oct-98	06-ZYMO-0000-0325-1999	6112	103I.050	40	26	STD	D	showing disturbed channel	8249 3203 0360	60
16-Oct-98	06-ZYMO-0000-0325-1999	6113	103I.050	40	27	STD	NS	RB 83mm	8249 3203 0360	61
16-Oct-98	06-ZYMO-0000-0325-1999	6113	103I.050	40	28	STD	U	BW shocking-note eroding bank on LB	8249 3203 0360	62
16-Oct-98	06-ZYMO-0000-0325-1999	6113	103I.050	40	29	STD	D	showing LWD-debris jam	8249 3203 0360	63
16-Oct-98	06-ZYMO-0000-0325-1999	6115	93L.031	40	30	STD	U	showing vegetation in channel	8249 3203 0360	64
16-Oct-98	06-ZYMO-0000-0325-1999	6115	93L.031	40	31	STD	D	mouth of channel	8249 3203 0360	65
16-Oct-98	06-ZYMO-0000-0325-1999	6116	93L.031	40	32	STD	NS	DV 78mm	8249 3203 0360	66
16-Oct-98	06-ZYMO-0000-0325-1999	6116	93L.031	40	33	STD	U	BW shocking	8249 3203 0360	67

Date	Project_Code	Site/Nid	Nid Map	Roll	Frame	Focal	Dir	Comment	CD Number	CD Image
16-Oct-98	06-ZYMO-0000-0325-1999	6116	93L.031	40	34	STD	D	LWD and SWD across channel	8249 3203 0360	68
16-Oct-98	06-ZYMO-0000-0325-1999	6117	93L.031	40	35	STD	NS	RB 110mm	8249 3203 0360	69
16-Oct-98	06-ZYMO-0000-0325-1999	6117	93L.031	40	36	STD	U	large moss covered log across the channel banks	8249 3203 0360	70
16-Oct-98	06-ZYMO-0000-0325-1999	9107	103I.050	23	1	STD	U	person and channel and slash	8249 3203 0360	71
16-Oct-98	06-ZYMO-0000-0325-1999	9107	103I.050	23	2	STD	D	glove and channel	8249 3203 0360	72
16-Oct-98	06-ZYMO-0000-0325-1999	9108	93L.031	23	3	STD	U	person in shot	8249 3203 0360	73
16-Oct-98	06-ZYMO-0000-0325-1999	9108	93L.031	23	4	STD	D	channel and pools	8249 3203 0360	74
16-Oct-98	06-ZYMO-0000-0325-1999	9109	103I.040	23	5	STD	U	helicopter	8249 3203 0360	75
16-Oct-98	06-ZYMO-0000-0325-1999	9109	103I.040	23	6	STD	D	jacket on corner	8249 3203 0360	76
16-Oct-98	06-ZYMO-0000-0325-1999	9110	93L.031	23	7	STD	U	SJ in channel	8249 3203 0360	77
16-Oct-98	06-ZYMO-0000-0325-1999	9110	93L.031	23	8	STD	D	channel	8249 3203 0360	78
16-Oct-98	06-ZYMO-0000-0325-1999	9111	93L.021	23	9	STD	U	falls and SJ	8249 3203 0360	80
16-Oct-98	06-ZYMO-0000-0325-1999	9111	93L.021	23	10	STD	X	across the confluence with the Clore	8249 3203 0360	81
16-Oct-98	06-ZYMO-0000-0325-1999	9112	93L.021	23	12	STD	X	typical vegetation in area	8249 3203 0360	82
	06-ZYMO-0000-0325-1999	9115	103I.050	23	13	STD	U	SJ in cascade section	8249 3203 0360	83
19-Oct-98	06-ZYMO-0000-0325-1999	9115	103I.050	23	14	STD	D	underneath bridge and barrier falls	8249 3203 0360	84
19-Oct-98	06-ZYMO-0000-0325-1999	9116	93L.031	23	15	STD	D	SJ in the channel	8249 3203 0360	85
19-Oct-98	06-ZYMO-0000-0325-1999	9116	93L.031	23	16	STD	U	out of focus, channel, log on right	8249 3203 0360	86
19-Oct-98	06-ZYMO-0000-0325-1999	9117	93L.031	23	17	STD	U	channel with heavy deciduous veg	8249 3203 0360	87
19-Oct-98	06-ZYMO-0000-0325-1999	9117	93L.031	23	18	STD	D	heavily vegetated channel, SJ downstream	8249 3203 0360	88
19-Oct-98	06-ZYMO-0000-0325-1999	9118	93L.031	23	19	STD	U	person and flowing channel	8249 3203 0360	89
19-Oct-98	06-ZYMO-0000-0325-1999	9118	93L.031	23	20	STD	NS	CO 95mm	8249 3203 0360	90
19-Oct-98	06-ZYMO-0000-0325-1999	9118	93L.031	23	21	STD	NS	RB 34mm	8249 3203 0360	91
19-Oct-98	06-ZYMO-0000-0325-1999	9203	93L.031	23	22	STD	U	BD 0.5m	8249 3203 0360	92
19-Oct-98	06-ZYMO-0000-0325-1999	9118	93L.031	23	24	STD	D	BW and channel	8249 3203 0360	94
19-Oct-98	06-ZYMO-0000-0325-1999	9119	93L.031	23	27	STD	X	confluence	8249 3203 0360	97
19-Oct-98	06-ZYMO-0000-0325-1999	9119	93L.031	23	28	STD	X	TM in shot	8249 3203 0360	98
19-Oct-98	06-ZYMO-0000-0325-1999	9119	93L.031	23	29	STD	U	LWD filled gully	8249 3203 0360	99
19-Oct-98	06-ZYMO-0000-0325-1999	9119	93L.031	23	30	STD	U	channel and SJ above gully	8249 3203 0360	100
19-Oct-98	06-ZYMO-0000-0325-1999	6118	93L.021	41	1	STD	D	BW and metre stick in channel	8249 3203 0360	108
19-Oct-98	06-ZYMO-0000-0325-1999	6118	93L.021	41	2	STD	U	bend in channel at POT of site	8249 3203 0360	109
19-Oct-98	06-ZYMO-0000-0325-1999	6119	93L.031	41	3	STD	U	BW shocking	8249 3203 0360	110
19-Oct-98	06-ZYMO-0000-0325-1999	6120	93L.031	41	4	STD	D	note the high flow stage of the creek	8249 3203 0360	111
19-Oct-98	06-ZYMO-0000-0325-1999	6120	93L.031	41	5	STD	U	channel from old bridge (lower road)	8249 3203 0360	112

Date	Project_Code	Site/Nid	Nid Map	Roll	Frame	Focal	Dir	Comment	CD Number	CD Image
19-Oct-98	06-ZYMO-0000-0325-1999	6120	93L.031	41	6	STD	D	channel from old bridge (lower road)	8249 3203 0360	113
19-Oct-98	06-ZYMO-0000-0325-1999	9118	93L.031	41	7	STD	NS	BT 100	8249 3203 0360	114
19-Oct-98	06-ZYMO-0000-0325-1999	6121	93L.031	41	8	STD	U	BW, TM and SJ on bank of channel	8249 3203 0360	115
19-Oct-98	06-ZYMO-0000-0325-1999	6121	93L.031	41	9	STD	D	BW on bank of channel	8249 3203 0360	116
19-Oct-98	06-ZYMO-0000-0325-1999	6122	93L.031	41	10	STD	NS	RB 69	8249 3203 0360	117
19-Oct-98	06-ZYMO-0000-0325-1999	6122	93L.031	41	11	STD	U	channel with LWD	8249 3203 0360	118
19-Oct-98	06-ZYMO-0000-0325-1999	6122	93L.031	41	12	STD	D	channel	8249 3203 0360	119
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	120
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	121
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	122
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	123
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	124
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	125
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	126
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	127
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	128
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	129
19-Oct-98	06-ZYMO-0000-0325-1999							Aerial shots of valley	8249 3203 0360	130

Appendix III: 1:20,000 Scale Project Maps

Appendix IV: 1:20,000 Scale Interpretive Maps

Attachment III: Summary of field and lab identification of preserved voucher specimens from fish sampled in the Clore River planning unit, October 14-19, 1998.

Stream Name	Watershed Code	Reach #	Site #	Voucher #	Species ID	Length (mm)	Maturity	Verified ID	Comments
Unnamed	440-256900-47600	1	9103	SJ01	BT	160	mat		
Unnamed	440-256900-34700	1	6102	1	DV	118	imm		
Unnamed	440-256900-39500	1	6104	2	BT	104	imm		