PEACE RIVER FISH COMMUNITY INDEXING PROGRAM - PHASE I STUDIES

P&E Environmental Consultants Ltd.

Cover: Peace River near Cache Creek.

PEACE RIVER FISH COMMUNITY INDEXING PROGRAM - PHASE I STUDIES

Prepared for

B.C. Hydro
Power Supply Environmental Services
6911 Southpoint Drive, Tower
Burnaby, British Columbia
V3N 4X8

By

P&E Environmental Consultants Ltd.
Box 33178 Glenwood P.O.
Edmonton, Alberta
T5P 4V8

In association with

LGL Limited
9768 Second Street
Sidney, British Columbia
V8L 3Y8

March 2002

Citation: P&E Environmental Consultants Ltd. 2002. Peace River Fish Community Indexing Program - Phase I Studies. Prepared for B.C. Hydro. P&E Report No. 01005F: 76 p. + Appendices

EXECUTIVE SUMMARY

B.C. Hydro has initiated a Large River Program in the Peace River and Columbia River watersheds to help define the effects of dam and reservoir operations on fish communities. The ultimate goal of this program is to develop monitoring tools that provide a reliable index of the fish community status in each of these watersheds. This program is to be developed using a phased approach over a 3 to 5 year period. In July 2001, B.C. Hydro initiated Phase I, with the primary goal being to develop standardized sampling protocols.

The primary purpose of Phase I of the Peace River Fish Community Indexing Program was to evaluate a number of monitoring strategies to ascertain what type of program would be needed to identify changes in the fish community. The three broad strategies that were investigated included use of biological characteristics, indices of relative abundance, and population estimates.

The Phase I field program completed in August and October of 2001 documented the general characteristics of the fish community in the mainstem Peace River and the lower sections of its tributaries. The findings of this investigation, which described the biological characteristics, distribution, and abundance of fish populations, were similar to findings by previous investigators. The program also addressed data gaps in the fish community information base. Biological characteristics of selected species were described (bull trout, longnose sucker, and largescale sucker) and the distribution of listed species (bull trout, spottail shiner, and goldeye) was documented. Bull trout and spottail shiner are widely distributed in the study area, while goldeye are restricted to the lowermost reach of the mainstem river. The results of the present study suggest that there has been an expansion in the historical distribution of spottail shiner.

Evaluation of biological characteristics (age-distribution, body condition, and growth rate) indicated that these parameters could be used as monitoring tools. The results for one species, mountain whitefish, indicated that for each of these parameters the sample should be stratified to account for spatial and temporal differences in population characteristics.

Evaluation of the relative abundance of small fish suggested that catch rates were generally very low and highly variable, which preclude use of small-fish catch rate as a monitoring tool. However, results of the large-fish component of the study suggested that catch rates generated by boat electrofishing could be used for monitoring purposes. Evaluation of factors that affect abundance indices showed that zone, season, habitat, water clarity, and discharge influence catch rate.

Catch rates tended to be highest in October and species-specific abundance was related to the location of the sample zone. Species such as bull trout, mountain whitefish, and rainbow trout were more numerous in upstream zones, while species such as Arctic grayling and longnose sucker were more abundant farther downstream. Catch rates of most target species also were higher in habitat sections containing physical cover. Mountain whitefish was the only species that was more abundant in habitat sections without physical cover.

Water clarity was not an important factor in much of the study area because visibility was generally consistent and high. However, wide variations in water clarity did affect catch rate. Abundance indices of some species increased with water clarity, while for other species the opposite trend occurred. This suggests that the effect of variable water clarity is not consistent among species. Variable discharge may also affect catch rate. Preliminary results examining the relationship between water level and catch rate suggest that catch rates are higher during periods with stable water flows (high and low) compared to periods with changing water flows (rising and falling).

The best approach to reduce the effects of these factors is to stratify the sample. This would help ensure a constant catchability within a particular stratum and would improve the precision of the catch rate estimate. Examination of data parameters also suggest that sample variation could be reduced further by not including all observed fish as part of the catch and by adjusting the data using logarithmic transformation. The precision of the catch rate data does limit its effectiveness as a monitoring tool. Power analysis suggests that catch rate data for Arctic grayling and mountain whitefish would be suitable to detect a change of 25% in the sample population. But, logistical constraints likely would preclude collection of sufficient sample sizes for other species.

Population estimates can also be used as a monitoring tool on the Peace River because the assumptions for the mark-recapture sequential closed population model can be met. For the Phase I study, point estimates of population size were of limited value because of poor precision. The data did suggest that

there is a 0.95 probability that the abundance of mountain whitefish was at least 150,000 and the abundance of Arctic grayling was at least 1000. Based on work during previous investigations, more than 100 hours of boat electrofishing may be needed to stabilize the precision of the population estimates for the entire study area. This would represent a four-fold increase, approximately, in the sampling effort expended during Phase I.

The stated overall objective of the Large River Program is to establish fish monitoring protocols that can be used reliably across the Peace River and Columbia River watersheds to provide an index of the general status of the fish community. As such, the monitoring protocol for these large river systems should be based on a systematic assessment of the potential effects of dam operation on the fish community, the best indicator species based on life history and catchability, the specific sampling locations, and the optimal sampling times.

Based on the finding of the Phase I study, we recommend that mountain whitefish and Arctic grayling would be suitable target species for the monitoring program. Both species are readily captured in near-shore areas using boat electrofishing. The section of the Peace River between the Pine and Halfway rivers (Reach 2 or Phase I zones 2 and 3) would be the best location to periodically assess the population status of these species. The only concern regarding this choice is that the reach is situated 50 km downstream of the PCN Dam, which may reduce the ability to monitor the effects of dam operation. Within the monitoring reach, sampling should be distributed between at least 3 sites to assess within-year variability between the monitoring sites and help ensure that any changes observed between years are not simply the result of localize changes in the fish population.

Based on the Phase I study results, the best sampling conditions would occur when flows are high and stable. Late summer to fall would likely provide an appropriate window, but ultimately, the timing of the surveys should be determined by water temperature and flow conditions rather than calendar dates.

Prior to initiating the program, specific sampling and enumeration objectives should be clearly defined for target and non-target species. This approach will ensure that project managers can make an accurate estimate of the amount of sampling effort required to achieve the goals of the program.

The above sampling design would provide a balanced and robust approach for monitoring the fish community in the Peace River. Information could be collected from all species encountered while sampling efforts would focus on the target species. The surveys would be distributed over a significant portion of the river, but would focus on times and areas where the sampling methods are most effective at capturing the target species. The initiation of the surveys would be responsive to annual variation in water temperature and flow, but the survey interval would be sufficiently long to ensure that the results are not compromised for short-term anomalies. The combination of the systematic application of electrofishing effort with a mark-recapture program would provide meaningful catch rate data and a means of assessing the within and between year variability in the efficiency of the survey methods.

The overall goal for the next two years should be to implement and test the above sampling design. If successful, the above approach could be repeated at 3-5 year intervals to monitor long-terms changes in the fish community or more frequently to assess specific changes resulting from alternative operating regimes.

ACKNOWLEDGEMENTS

P&E Environmental Consultants Ltd. (P&E) would like to thank Paul Higgins of B.C. Hydro for initiating the study and for providing timely assistance. We also thank North/South Consultants Inc. for providing a boat electrofisher and experienced boat operator during the study. Gary Ash of Golder Associates Ltd. and Tim Slaney of Aquatic Resources Ltd. provided reports and/or copies of raw data generated during previous B.C. Hydro studies on the Peace River.

The individuals associated with P&E Environmental Consultants Ltd. who participated in the study were as follows:

Rick Pattenden	Senior Biologist and Senior Author
Ash McHone	Technician
Kirt Shuman	Technician
Harold Funk	Technician of North/South Consultants Ltd.
Dan Watson	Technician of Diamond Willow Environmental Consulting

The individuals of LGL Limited responsible for the population estimate component of the study were as follows:

Karl English	Senior Biologist and Coauthor
Bill Gazey	Senior Analyst and Coauthor

The individuals of Mike Miles and Associates Ltd. responsible for providing the water level recorders and for interpreting the water level data were as follows:

Mike Miles	Fluvial Geomorphologist
Elizabeth Goldsworthy	Senior Technician

TABLE OF CONTENTS

Page #

LIST OF TABLES

Page #

LIST OF FIGURES

Page #

1.0 INTRODUCTION

B.C. Hydro has initiated a Large River Program in the Peace River and Columbia River watersheds to help define the effects of dam and reservoir operations on fish communities. The ultimate goal of this program is to develop monitoring tools that provide a reliable index of the fish community status in each of these watersheds. The overall goals of the Large River Program are to:

1. Develop a reliable and cost-effective method (s) for indexing the fish community.
2. Complete investigations to fill data gaps associated with life history and habitat use of the species of special concern.
3. Implement specialized monitoring activities in relation to identified species of concern.

This program is to be developed using a phased approach over a 3 to 5 year period. In July 2001, B.C. Hydro initiated Phase I, with the primary purpose being to develop standardized sampling protocols to achieve Goal #1. P&E Environmental Consultants Ltd. (P&E), in cooperation with LGL Limited (LGL) and M. Miles and Associates Ltd. (MMA), were contracted by B.C. Hydro to undertake Phase 1 of the Peace River Fish Community Indexing Program. P&E was the managing consultant, and as such, was responsible for the majority of the program. The role of LGL Limited was to evaluate the reliability of population estimates as a monitoring tool for the Peace River. M. Miles and Associates used their expertise to design a water level monitoring program to help establish whether discharge influenced fish sampling effectiveness.

This documents summarizes the findings of Phase I of the Peace River Fish Community Indexing Program. Also provided are recommendations to assist in the development of Phase II of the Large River Program.

1.1 BACKGROUND

Several investigations completed in British Columbia (Burrows *et al*. 1999; Slaney *et al.* 1991a, 1991b; Pattenden *et al.* 1990, 1991, 1992; RL&L 2001) and Alberta (Hildebrand 1990; RL&L 2000) provide good baseline information of the general characteristics of the fish community in the Peace River. This includes a description of the composition, relative abundance, seasonal movement patterns, biological characteristics, and general habitats of the more common species. Some of these investigations and others

have also assessed how the operation of the B.C. Hydro facilities has affected the fish community in this section of the Peace River (Hildebrand 1990; RL&L 1992 and 2001).

The Peace River is a regulated system that exhibits discharge fluctuations caused by the operation of the W.A.C. Bennett and Peace Canyon (PCN) dams. This operational regime has a number of effects on the fish community, which include physical displacement of fish, changes to the type and quantity of habitat, and an altered water temperature regime (RL&L 2001).

The fish community in the Peace River downstream of the PCN Dam consists of a diverse assemblage of 28 fish species. In general, the mainstem river supports low densities of small-sized fish, which are largely restricted to unique habitats that provide refuge (RL&L 2001). In contrast, larger-sized fish are relatively abundant and adult life-stages of several species are widely distributed. Most of these species spawn and rear in study area tributaries, thereby allowing the smaller, younger fish to avoid the potentially adverse conditions in the mainstem river.

Monitoring changes to the fish community on a large flow-regulated system such as the Peace River presents special challenges. A combination of factors including the large size of the study area, flow regime, water temperature, and habitat characteristics has created a complex fish community. Each of the fish species populations that comprise this community has specific habitat preferences that may change depending on life-stage and season. In addition, the effectiveness of sampling methodologies is influenced by the operational regime of the W.A.C. Bennett and PCN dams. Variable water flows create logistical constraints and can alter species-specific fish capture rates. All these factors must be considered when designing and implementing a monitoring program.

The primary purpose of Phase I was to evaluate a number of monitoring strategies to ascertain what type of program would be needed to identify spatial and temporal changes in the fish community. The three broad strategies that were investigated included use of biological characteristics, indices of relative abundance, and population estimates.

1.2 OBJECTIVES

The objectives of the Phase 1 Peace River Fish Community Indexing Program were as follows:

1. Update basic information on the fish community including listed species.
2. Identify data gaps in the existing database.
3. Document spatial and temporal variation in the fish community.
4. Identify and evaluate factors that influence the assumptions of sampling methods.
5. Make recommendations to help guide Phase II of the Program.

1.3 SCOPE

To achieve these objectives the scope of the study was as follows:

1. Conduct a field-sampling program to document seasonal changes in the abundance and distribution of fish populations using shallow-water/near-shore habitats.

2. Conduct investigations required to develop standardized monitoring protocols for shallow-water/near-shore habitats. These were to include evaluating the effectiveness of alternative gear types and documentation of temporal variation (diel and seasonal).

Phase I of the Peace River Fish Community Indexing Program did not address two of the study requirements identified in the Terms of Reference. First, the investigation did not evaluate the effectiveness of alternate gear types as monitoring tools because these evaluations were undertaken (indirectly) by previous studies on the Peace River (Hildebrand 1991; Pattenden *et al.* 1990, 1991; RL&L 2001). As such, only gear types deemed to be the most effective sampling methods were employed. Second, evaluation of diel variation was not completed. Initial investigations during the field program identified logistical and safety constraints that severely restricted examination of diel variation; therefore, this study component was not pursued. Given that the primary objective of Phase I was to develop an effective, standardized monitoring protocol, it was deemed inappropriate to invest time and monies in gear types and sampling strategies that would provide unreliable results or that would not be incorporated into future monitoring programs.

3. Undertake a mark-recapture program to generate estimates of absolute abundance for major fish populations and to ascertain the amount of sampling effort needed to obtain precise estimates.

4. Provide recommendations to achieve the overarching goals of the program.

5. Prepare a concise technical report outlining the findings and recommendations of the Phase 1 studies.

1.4 STUDY AREA

The study area for the fish community indexing program encompassed a 147 km section of the Peace River from the British Columbia-Alberta border to just downstream of the PCN Dam (Figure 1.1). Past studies differentiated this river section into four discrete reaches based on differences in channel morphology, gradient, turbidity, and dominant substrate type (Table 1.1). During these previous investigations large sections of each reach were sampled (Pattenden *et al.* 1990, 1991); however, standardized sampling areas were not established. In 1999, RL&L (2001) defined and sampled four zones, one in each reach. The present study incorporated three of these sampling zones into the field program. The only exception was the omission of the zone in Reach 4 and the addition of a zone in Reach 2 near the Moberly River. The rationale for this was as follows:

- Previous investigations documented low and variable catch rates for most fish species and species diversity was low in Reach 4 (Pattenden *et al.* 1991; RL&L 2001); therefore, this river section was not expected to provide data that were suitable for monitoring purposes.

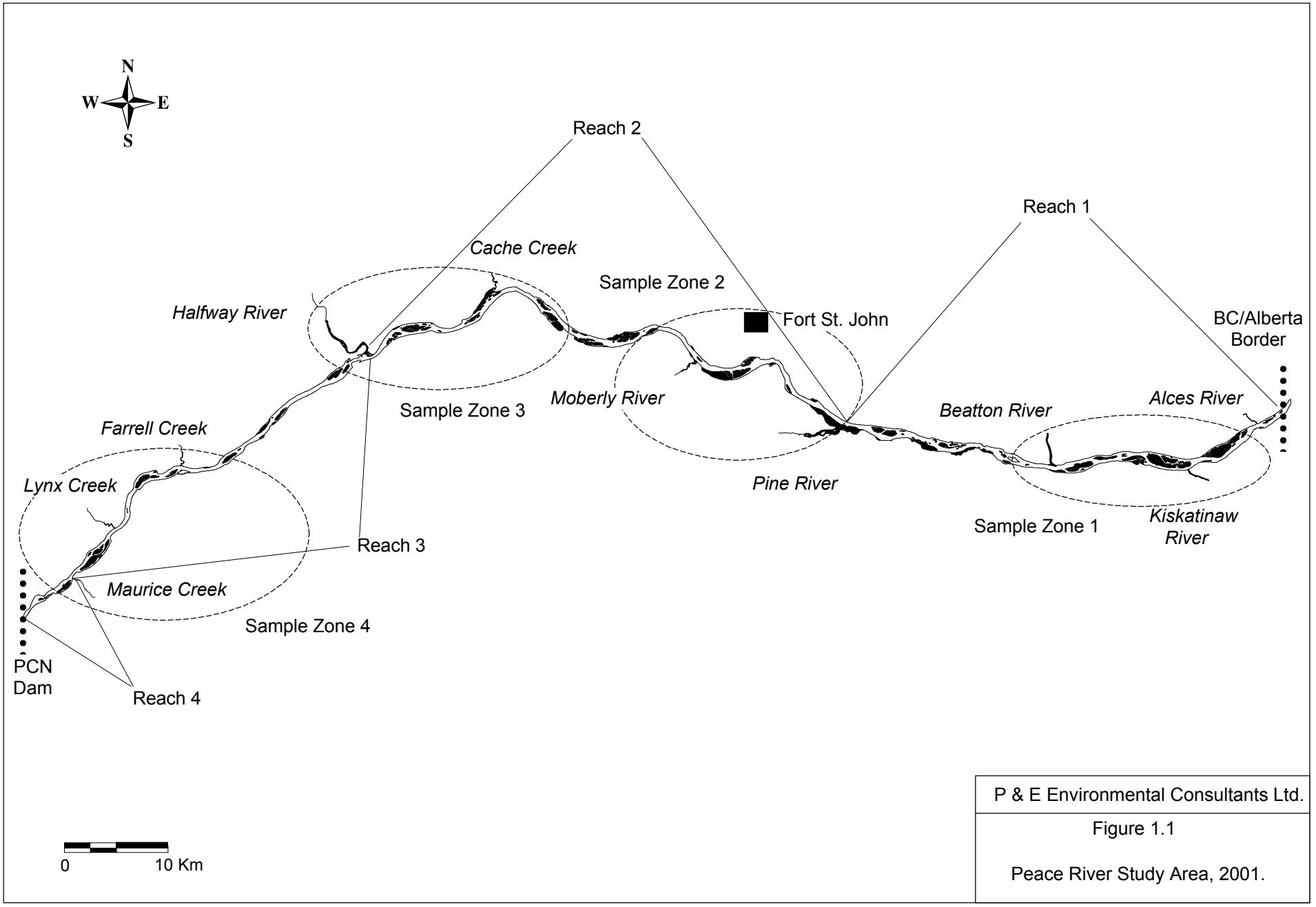
- Given the logistical constraints that existed in Reach 4 (i.e., access to sample sections dependent on operational regime of PCN Dam, high velocity and/or deep-water areas limited capture effectiveness) sampling in the new zone would be a better use of time and money because effort could be more evenly distributed and sampling would be more effective.

- The new zone would provide information for a section of river that contained a good representation of species in the fish community.

- Placement of a zone at the new location would provide better coverage of the river. The distribution of sample zones used in 1999 left an unsampled section of river that represented 43% of the study area.

This distribution of sampling effort had the potential disadvantage of causing a data gap for the short river section in Reach 4 that potentially could be most greatly affected by changes in the flow regime. To address this issue Phase I sampling was extended into the lower section of Reach 4.

Based on these adjustments, the present study included four sample zones distributed between the British Columbia-Alberta border and the PCN Dam. These zones ranged in length from 23 km to 27 km, their total representing 66% of the mainstem Peace River Study Area (Table 1.2).



P & E Environmental Consultants Ltd.

Figure 1.1

Peace River Study Area, 2001.

Table 1.1 Reach designations and descriptions of the Peace River between the British Columbia/Alberta border and PCN Dam[a].

Reach	Location (km)	Length (km)	Description	Gradient	Dominant Substrates	Island Complexes	Side to Main Channel Ratio	Water Clarity	Summer Water Temperature (^{o}C)
1	0 to 48	48	BC/AB border the Pine River	low	silt-gravel	10	0.74	low	10.7 - 17.0
2	49 to 104	55	Pine River to the Halfway River	low-moderate	gravel	8	0.53	low	10.0 - 14.2
3	105 to 143	38	Halfway River to Maurice Creek	low-moderate	gravel-cobble	5	0.44	moderate	9.2 - 13.1
4	144 to 151	7	Maurice Creek to the PCN Dam	high	bedrock-cobble	3	0.35	high	-

[a] Descriptions from Pattenden *et al.* (1991) and RL&L (2001).

Table 1.2 Locations of zones sampled during Phase I of the Peace River Fish Community Indexing Program, 2001.

Reach	Zone	Location	Length (km)	Description
1	1	Km 6.1 to 31.2	25.1	Downstream of Kiskatinaw River to upstream of Beatton River.
2	2	Km 47.0 to 70.0	23.0	Upstream of Moberly River to the confluence with the Pine River
	3	Km 82.0 to 109.0	27.0	Downstream of Cache Creek to upstream of Halfway River.
3	4	Km 120.3 to 145.2	24.9	Downstream of Farrell Creek to upstream of Maurice Creek.

In addition to work in the mainstem Peace River, sampling also was completed in the lowermost sections of several tributaries. These systems were included in the sampling program to document use by the small-fish community that resided in the mainstem river. The sampled tributaries were as follows:

- Zone 1
  - Beatton River
  - Kiskatinaw River
- Zone 2
  - Moberly River
- Zone 3
  - Halfway River
  - Cache Creek
- Zone 4
  - Maurice Creek
  - Lynx Creek
  - Farrell Creek

1.5 STUDY SCHEDULE

The field program entailed a 12-day sampling session in each of August and October 2001. The schedule was chosen to document seasonal variation in habitat use by fish and to establish whether there were seasonal differences in sampling effectiveness. During each session, eight days were spent sampling near-shore habitats for the large-fish component of the fish community. The remaining four days were used to sample shallow-water habitats for the small-fish component.

2.0 APPROACH AND METHODS

The Phase I study program on the Peace River included field and office components. The field program was designed to capture fish in shallow-water/near-shore habitats. The three primary goals of the field program were as follows:

- Update basic information on fish populations with special emphasis on species of special status and nonsportfish species.
- Document spatial and temporal patterns in fish abundance and distribution.
- Collect information to assess the effectiveness of different monitoring tools.

To evaluate the effectiveness of the monitoring tools, the study was designed to test the assumptions of sampling methods and to ascertain what level of effort would be required to obtain reliable data. This was largely an office exercise, which used data collected during the present investigation, and when possible, data from past studies on the Peace River.

2.1 FIELD PROGRAM

2.1.1 Approach

The field program was designed to collect biological data for the species of interest and to document seasonal changes in abundance and distribution of fish populations using shallow-water/near-shore habitats in the Peace River. The program employed sampling techniques proven to be successful during previous investigations, which included boat electrofishing, beach seining, and backpack electrofishing (Pattenden *et al.* 1990; RL&L 2001). Based on findings from Pattenden *et al.* (1990) and RL&L (2001), fluctuating water levels inherent to the Peace River severely restricted the effectiveness of passive sampling methods such as gill-netting and gee-trapping. As such, these methods either were not used (gee traps), or were employed to sample unique habitats (gill nets).

The field program was divided into small and large-fish sampling components. Small fish were defined as all sizes of most cyprinids (all except northern pike minnow, *Ptychocheilus oregonensis*), trout-perch (*Percopsis omiscomaycus)*, and sculpins (*Cottus spp.)*, as well as young-of-the-year and younger juveniles of large-fish species <200 mm fork length. Large fish were defined as individuals $200 mm fork length. This definition of fish size was used because it generally represented the minimum size of fish that could be effectively captured using boat electrofishing.

Backpack electrofishing and beach seining was used to sample small fish residing in shallow-water habitats #1.0 m water depth. Boat electrofishing targeted larger fish present in near-shore habitats at water depths generally ranging from 0.5 to 2.0 m. Sampling was restricted to areas # 2.0 m deep when using this technique because previous experience showed that electrofishing effectiveness was dramatically reduced beyond this depth. Where appropriate, gill-netting was used to sample deep-water habitats >2.0 m depth.

To assess spatial and temporal patterns in habitat use, all fish sampling was completed within discrete habitat types. RL&L (2001) demonstrated that small fish in the mainstem Peace River were largely restricted to unique habitats. In order to reduce sample variation and to increase catch rates the small-fish sampling program focused on these unique habitats, which included tributary mouths, protected back channels (snyes), backwaters, and shoals.

The large-fish sampling program did not focus sampling on a select number of unique habitats because large fish are widely distributed in the system (Pattenden *et al.* 1990). Instead, sampling encompassed a wide variety of habitat types that were previously defined by RL&L (2001). It is well known that the physical characteristics of sampled habitats can affect catch rates of fish due to species-specific habitat preferences and difference in sampling effectiveness. Investigations by study personnel on large regulated rivers also have established that the availability of physical instream cover can explain much of the observed difference (RL&L 1998). To address these issues, sampled habitat types were categorized into discrete groups based on differences in physical characteristics thought to influence spatial and temporal habitat use by fish: bank slope/depth, water velocity, and the presence of physical instream cover (Table 2.1).

Four habitat categories represented differences in water velocity, bank slope/depth and physical instream cover as follows:

- Gradual slope - shallow water; fast; physical cover (SFC)
- Gradual slope - shallow water; fast; no physical cover (SFN)
- Steep slope - deep water; slow; physical cover (SLC)
- Steep slope - deep water; slow; no physical cover (SLN)

Table 2.1 Habitat categories sampled during Phase I of the Peace River Fish Community Indexing Program, 2001.

Habitat Category	Bank Habitat[a]	Instream Habitat	Velocity[b]	Bank Configuration[b]	Physical Instream Cover	Substrate
SFN	A3	Run	Moderate to High	Gradual Slope/ Shallow Water	Absent	Rock
SFC	A1/A2	Run	Moderate to High	Gradual Slope/ Shallow Water	Present	Rock
SLN	A3	Flat	Low	Steep Slope/ Deep Water	Absent	Rock or Sand
SLC	A1/A2	Flat	Low	Steep Slope/ Deep Water	Present	Rock or Sand
CON	D2/D3	Tributary Confluence	Low	Steep Slope/ Deep Water	--	Sand
BAC	A3/D3	Back Channel	Nil	Steep Slope/ Deep Water	--	Silt

[a] Habitat types defined in RL&L (2001).
[b] Based on subjective measure by experienced habitat biologist.

The remaining two habitat categories represented unique areas of the mainstem Peace River. They included tributary confluences (CON), and protected back channels (BAC).

In addition to sampling in the mainstem river, the lower 200 m of flowing tributaries were surveyed. These areas were included in the program to document use by mainstem fish populations and to increase the probability of locating two species of special interest: spottail shiner (*Notropis hudsonius*) and pearl dace (*Margariscus margarita*).

Sampling protocols were standardized to reduce sampling variation and to facilitate comparisons with previous studies. Sampling occurred in predetermined, well-defined sections or sites that represented a specific habitat type or category. Where possible, sites established during previous studies were included in the program.

For electrofishing methods (boat and backpack) the number of fish captured was used as the preferred fish enumeration method rather than number of fish captured plus number of fish observed. Past experience by study personnel indicated that including the number of observed fish in the enumeration data could increase sample variation due to differences in observer experience and bias. The only exception to this rule was recording the number of observed fish for the less abundant species and life stages so that rare fish were not omitted from the sample. This group included adult fish of all sportfish species except mountain whitefish.

Sampling was repeated at established sections or sites to ascertain seasonal differences in abundance. Attempts also were made to undertake repeated sampling during each session to establish the bounds of within-site variation. However, fluctuating water levels changed sampling conditions, which precluded this option. Instead of sampling a small number of sites several times, the number of sites sampled during each session was increased.

2.1.2 Fish Capture Methods

2.1.2.1 Small-fish Sampling

The methods used to sample small fish in the mainstem Peace River and the tributaries were beach seining and backpack electrofishing. The number of samples collected during August and October during the study is summarized in Table 2.2. All sample location and effort data are provided in Appendices A and B.

Beach seining was used to sample habitats exhibiting low to moderate water velocities (<0.3 m/s). The seine was 1.5 m high x 4.5 m wide with a mesh size of 3 mm and was equipped with a weighted lead line and collection bag. The seine bag had the following dimensions: 1.5 high x 2.5 m wide x 1.5 m deep. Samplers first deployed the seine across the sample area and then moved downstream at a rapid and constant pace. At the downstream end of the site, the seine was turned into shore. Contact with the bottom was maintained at all times and if the seine snagged during the sweep the sample was abandoned.

A Smith-Root Type XII high output backpack electrofisher equipped with a 28 cm anode ring was used to capture fish in habitats characterized by higher water velocities than could be effectively sampled by beach seining (>0.3 m/s). The electrofisher operator waded in an upstream direction, while the netter who was equipped with a dip net having a mesh size of 5 mm, collected the immobilized fish.

The area of the habitat determined the length of each small-fish sample. In general, each beach seine and backpack electrofisher sample included at least a minimum 30 m of habitat. Where possible, three beach seine hauls were completed at each site.

Table 2.2 Number of samples collected during Phase I of the Peace River Fish Community Indexing Program, 2001.

Zone	Method	Mainstem Peace River		Tributaries	
		August	October	August	October
1	Boat electrofish	14	14		
	Beach seine	11	12	3	6
	Backpack electrofish				
2	Boat electrofish	17	17		
	Beach seine	11	21		3
	Backpack electrofish	3		1	
	Gill net		1		
3	Boat electrofish	13	13		
	Beach seine	9	16	1	3
	Backpack electrofish	1		1	1
	Gill net		2		
4	Boat electrofish	14	13		
	Beach seine	10	13		
	Backpack electrofish			3	3

2.1.2.2 Large-fish Sampling

The primary method used to sample large fish in the mainstem Peace River was boat electrofishing. Attempts were made to sample deep-water habitats using gill nets, but sampling conditions and the limited number of suitable sites precluded extensive use of this method. The number of samples collected using each method during August and October is summarized in Table 2.2. All sample location and effort data are provided in Appendices A and B.

A 5 m boat electrofisher propelled by a 175 Hp sport-jet inboard motor was used to sample fish. The craft was equipped with a fixed-boom anode system and Smith-Root Type VIA electrofisher system. Electrofisher settings were maintained at an amperage output of 3.0 to 4.0 A, pulsed DC current, and a frequency of 60 Hz. The sampling procedure involved drifting downstream at motor idle along the channel margins in water depths #2.0 m, while outputting a continuous current of pulsed DC electricity. The only instance when this sampling protocol changed occurred when backwater habitats greater than approximately three boat lengths were encountered. In these situations, the boat was turned into the backwater at its downstream end and the channel margin within the backwater sampled in an upstream direction.

Two netters positioned on a platform at the bow of the boat captured immobilized fish, while the boat operator maintained the position of the craft along the channel margin. Netters were equipped with nets having a diameter of 45 cm and a depth of 40 cm and a mesh size of 5 cm. To facilitate capture of small fish, the bottom surface (40 cm^2) of each net had a mesh size of 1.5 cm. Netters were instructed to retrieve a random sample of immobilized fish that were accessible from their netting position on the platform and to net no more than one fish at a time.

The only exception to this sampling protocol occurred when a rare species or life stage was encountered. In this situation, the boat was turned towards the fish and netters made every effort to capture the individual.

Electrofishing section lengths were dependant on the area of the habitat category sampled and the numbers of fish encountered. Section length generally ranged between 1000 and 2000 m. Upon completion of an electrofishing section, captured fish were enumerated, processed, and released. To avoid recapture of previously collected fish, fish were released on the opposite side of the river to the channel margin that was to be sampled.

2.1.2.3 Processing Captured Fish

All captured fish were held in a holding tank or bucket until processing. Data recorded for each fish included species, fork length (to the nearest 1 mm), weight (to the nearest 2 g), sexual maturity (through external examination, and/or release of gametal products), and presence of a tag, tag scar, or fin clip. An appropriate ageing structure (Mackay *et al.* 1990) also was collected from target species.

When large numbers of large fish required processing, only the first 200 individuals of a specific species were weighed. This allowed effort to be invested in additional fish sampling rather than fish processing. For small fish, only the first 50 individuals were measured for life history characteristics while the remainder were enumerated. If captured small fish could not be identified to species a sub-sample was preserved for identification in the laboratory.

As part of the population estimate component of the study, fish $250 mm fork length in good condition were marked with a uniquely numbered Floy tag. The tag was first immersed in an antiseptic, then inserted, using a Dennison Mark II applicator gun, into the dorsal musculature immediately below the dorsal fin between the pterygiophores. The tag was then checked to ensure it was inserted securely. To estimate tag loss rate, each tagged fish also was fin-clipped.

2.1.2.4 Measured Parameters

In addition to fish capture and life history information, other parameters measured for each fish sampling section or site included the following:

- Sample date and time
- Sample period (morning [1]; mid-day [2]; evening [3])
- Effort time in seconds and/or distance in metres
- Sample method settings
- Habitat type or category
- Bank Slope (shallow slope [1]; concave [2]; steep [3]; near vertical [4])
- Dominant substrate type; Modified Wentworth Scale (Cummins 1962)
- Physical Instream Cover (rock; bank irregularities; large organic debris; none)
- Water conductivity (microseimens)
- Water temperature (^{o}C)
- Light intensity (full sun [1]; partial cloud [2]; full cloud [3]; full shade [4])
- Water clarity (cm); using a secchi plate mounted on a pole (plate was 2.5cm wide x 21 cm long partitioned into three equal sections of black, white, and black)
- Location (river kilometre; Universal Transverse Mercator Coordinate)
- Relative sampling efficiency/sampler skill (high [1]; moderate [2]; low [3]; nil [4])
- Relative water velocity (fast [1]; moderate [2]; slow [3]; low or nil [4]); large-fish sampling only
- Water depth (m) and water velocity (m/s); small-fish sampling only

2.1.3 Measurement of Water Levels

M. Miles and Associates Ltd. was responsible for the purchase, activation and downloading of the water level recorders. The unit used to measure and record water level (and water temperature) was the UNIDATA Model 8007A Digital Water Level Recorder (DWLR). The DWLR uses a pressure sensor to determine the water level by the hydrostatic water level measurement method. The instrument is fitted with a vented connection cable that allows the inside of the instrument housing to compensate for

atmospheric pressure. The DWLR contains a 128K memory data logger, which controls the instrument operation, performs the mathematical corrections for sensor mechanics, and logs the results of its measurements. The instrument was programmed to collect data at 5 second intervals and summarize this information every 15 minutes.

Four water level recorder stations were deployed in the study area, one in each sample zone (Appendix A). Stations were positioned in protected locations where the instrument would not be subjected to dewatering. Each unit was weighted with a 10 kg cement block, placed in the river, and then secured to the shore with aircraft cable. The vent tube was secured to the aircraft cable at 1 m intervals. The terminal end of the tube was placed in a PVC container to protect it from the elements and hidden in shoreline vegetation. To prevent detection by vandals exposed aircraft cable and vent tube were buried.

The instruments were deployed at the beginning of the field program in August. Each unit continuously monitored water levels until removal at the end of the October field program. The elevation of the river water surface level was recorded at the time when the unit was removed, which will allow collection of comparable data if the recorders are deployed in the future. The instruments were then shipped to the office for downloading and data summary.

2.2 EVALUATION OF MONITORING TOOLS

2.2.1 Approach

An important objective of the Phase I studies was to evaluate tools used to monitor the fish community in the Peace River. To be effective, the monitoring program should meet three criteria. First, the parameters chosen for monitoring should be sensitive to effects caused by changes in the operational regime of the W.A.C. Bennett and PCN dams. Second, the monitoring methods should be able to detect a change in the target parameter when one actually exists. Third, the methods should be logistically and economically feasible.

Parameters examined during Phase I that have the potential for use as monitoring tools included biological characteristics, indices of abundance, and estimates of absolute abundance. Phase I examined factors that could influence the effectiveness of these monitoring tools. Specifically, the data were evaluated to establish if there were spatial and temporal differences and whether unwanted variation could be reduced. This approach could be used to increase sample precision, and therefore, improve the ability to detect change. Following these evaluations, Phase I quantified the level of sampling effort required to detect a specific magnitude of change in the target parameter.

Procedures used to evaluate the monitoring tools are described below. Unless otherwise stated, statistical analyses followed procedures described in Sokal and Rohlf (1981) and statistical significance was accepted at $P<0.05$. To meet the assumptions required for parametric statistical analyses (i.e., normal distribution and equal variances) data were transformed where appropriate. Statistical analyses of means used the Oneway Analysis of Variance. The Tukey's HSD test was used to test for differences between individual means. Finally, the large number of multiple Pearson correlation comparisons of boat electrofisher catch rate and different sample variables were adjusted using Boniferroni probabilities.

2.2.2 Biological Characteristics

Biological characteristics examined for use as monitoring tools included size distribution (in place of age-cohort analysis), body condition, and growth rate. Mountain whitefish were used for the evaluation because this species was abundant and widely distributed throughout the study area, and there were sufficient samples sizes for analyses. The analyses focused on whether samples could be collected from the entire study area, or whether there were sample zone and season effects that would necessitate stratification.

Size Distribution

Length-frequency distributions were used as a surrogate of age-distributions to assess whether there were zone and season effects. Fish captured during boat electrofishing were used for the analysis.

Body Condition

The relationship between weight and length of fish can be used to monitor the health of a fish population. Condition indices (e.g., Fulton's Condition Factor) are typically used for this purpose, but there are statistical problems inherent to this approach (Cone 1989). As such, body condition of sample populations was examined using the linear least-squares regression method comparing weight to length.

The data set was standardized by selecting a random sample of 30 fish from each stratum that belonged to the dominant size category of the population (250 mm to 350 mm fork length). These data were then log-transformed prior to the analysis. The data were first examined to ensure that the assumption of equal slopes was valid by testing for interaction between the treatment category and the covariate. Once equality of slopes was established, sample weights were adjusted for the covariate length and the residuals tested.

Growth Rate

Age-at-length was used to assess whether zone affected fish growth rate. Based on sample availability, fish aged 2, 3 and 4 were used for the analyses. For this evaluation, a difference in sample slope using the linear least-squares regression method indicated a difference in growth rate.

2.2.3 Abundance Indices

Catch rate was used to provide an index of fish abundance. For boat electrofishing, catch rate was calculated by dividing the number of fish enumerated by the distance sampled and represented as number of fish per kilometre. The number of fish enumerated equaled the number of fish captured plus the number of rare fish observed. For the purposes of Phase I, a rare fish was defined as a fish >250 mm fork length of the following fish species: Arctic grayling, bull trout, and rainbow trout as well as all individuals of scarce species. For other sampling methods, catch rate represented the number of fish captured per unit effort (metres or metres^2).

Most procedures used to evaluate the influence of factors on catch rate are described in the results section for each assessment. Those requiring detailed descriptions are discussed as follows.

Water Level

Water level was used as an index of discharge to ascertain the effect on catch rate. Prior to analysis, water level data collected at each site were converted to proportional values to remove the effects of different reference points at each station. This was accomplished by dividing individual water level datum by the sum of all water levels recorded for that station, zone, and season.

The data recorded at Station 1 was lost due to damage to the unit caused by vandals or beaver activity. As such, information extrapolated using Water Survey of Canada (WSC) Discharge Stations at Taylor and Alces Creek was used as a surrogate for the lost data. The data at the WSC stations were compared to establish patterns in the hydrograph and to calculate travel time between stations. The distance from the Taylor Station to Station 1 was then used to estimate the lag-time between the two sites. The water level data from Taylor was then adjusted to represent conditions at Station 1. This was a valid approach because the timing and relative magnitude of water level fluctuation were the variables of interest rather than the absolute change in water level.

Because the first day of sampling in Zone 4 (17 August) was completed before deployment of the water level station, a similar procedure was used for this site on this date. Comparisons were made between data from the WSC Discharge Station at Hudson Hope and information collected at Station 4 after 17 August.

Power Analysis

The Z-value power equation illustrated below and described in Environment Canada and Department of Fisheries and Oceans (1995) was used to estimate the sample size (n) needed to detect a specified difference (δ) in catch rate (i.e., 10, 25, and 50% difference). Catch rate estimates and standard deviations (SD) used for the calculations were derived from representative samples collected during the Phase I studies. The test assumed a significance level (α) of 0.05 and a power ($1-\beta$) of 0.8; therefore, $Z_\alpha = 1.960$ and $Z_\beta = 1.282$.

$$n \geq \frac{2(Z_\alpha + Z_\beta)^2 \, SD^2}{\delta^2} + \frac{Z_\alpha^2}{4}$$

2.2.4 Population Estimates

During Phase I, a tagging program was initiated in an attempt to generate population estimates for major fish species in the study area. The tagging program had characteristics that should be considered with reference to the population estimation methodology and limitations of the subsequent estimates. First marks were applied only to fish $250 mm fork length; therefore, estimates are only applicable to that portion of the population. Second, fish can grow over the life of the study such that fish recruit into the portion of the population $250 mm fork length then when the study commenced. Third, marked fish can move to sections (habitats) where capture vulnerability is different. Finally, the number of recaptured marks for studies on the Peace River has proven to be sparse (this study, Pattenden *et al.* 1990, 1991), which precludes the application of the classical Jolly-Seber open population models (Seber 1982). A Bayesian approach suggested by Gazey and Staley (1986) is able to accommodate the recruitment adjustments to the data, allow for stratified capture probabilities and cope with very sparse recaptures.

Population estimates were obtained from the mark recapture data following Gazey and Staley (1986). The two sampling sequences used were 17 August to 28 August and 12 October to 23 October.

Recaptures obtained during the same release sequence were not used because these recaptures probably did not have sufficient time to mix with the unmarked fish. Thus, the mark-recapture 2001 study can be regarded as a two-stage Petersen experiment. Because there were very few recoveries, the number of fish examined (sample size) was not adjusted for growth –recruitment into the markable population ($250 mm fork length) as was done in the 1989 and 1990 studies (Pattenden *et al.* 1990, 1991).

The very sparse recoveries also made any point estimates of population size highly unreliable for the 2001 study. However, the Bayesian approach enables the calculation of the posterior distribution of population size N_i from which the probability that the population size is greater than some reference population level, V_j, can be constructed as the compliment of the cumulative density, i.e.,

$$P(N > V_j) = 1 - \sum_{i=1}^{j} N_i$$

The calculation of these minimum population estimates and associated precision has been shown to be very robust even under very sparse recoveries (Gazey 1994).

In order to explore the precision that may be obtained under alternative sampling intensities, a simple power analysis was conducted on the arctic grayling results from 1989 and 1990 studies and on mountain whitefish from the 1989 study. We assumed that the estimate of the Bayesian mean ($\overline{N}$) was the actual population size and adjusted the data for an altered sampling factor for any sequence as follows:

$$M'_t = \left[1 - \left(1 - \frac{M_t}{\overline{N}}\right)^f\right] \cdot \overline{N}$$

$$C'_t = \left[1 - \left(1 - \frac{C_t}{\overline{N}}\right)^f\right] \cdot \overline{N}$$

$$R'_t = R_t \cdot \frac{M'_t}{M_t} \cdot \frac{C'_t}{C_t}$$

where f is the sampling factor (e.g., f=2 represents a doubling of the sampling effort), M_t is the number of marks applied at the start of the t^{th} sampling sequence, C_t is the total number of fish examined for marks and R_t is the number of recaptured marks. The prime notation represents the data generated for a specified sampling factor. Since the number of marks applied or fish examined is small in relation to the population size, a sampling factor of 2 nearly doubles the marks applied and examined and quadruples the recoveries.

For the purposes of this analysis we defined precision to be half of the 95% highest probability density (HPD) expressed as a percentage of the mean. If the posterior distribution were perfectly symmetrical, then our precision definition would equate to the plus/minus 95% confidence interval.

3.0 RESULTS AND DISCUSSION

3.1 INFORMATION REVIEW

The following provides a brief synopsis of the current understanding of the fish community in the Peace River downstream of the PCN Dam. This summary is based on a review of existing reports and personal communications with individuals that have worked on the system.

Several investigations completed on the Peace River in British Columbia (Burrows *et al.* 1999; Slaney *et al.* 1991a, 1991b; Pattenden *et al.* 1990, 1991, 1992; RL&L 2001) and Alberta (Hildebrand 1990; RL&L 2000) provide good baseline information for the fish community. This includes a description of the species composition, relative abundance, seasonal movement patterns, biological characteristics, and general habitat of the more common species. Some of these investigations and others have also assessed the effect of the B.C. Hydro facility operation on the fish community (Hildebrand 1990; RL&L 1992 and 2001).

The Peace River is a regulated system that exhibits seasonal, daily, and hourly fluctuations in discharge related to the operation of the W.A.C. Bennett and PCN dams, which have a number of potential effects on the fish community (RL&L 1992). Variable and at times, rapid fluctuations in water level can displace fish or exclude them from preferred habitats. The operation regime also has altered the temperature characteristics of the river, which likely has caused a shift in the fish community assemblage from cool to cold-water species. Winter ice conditions have been altered due to maintenance of open water in the upper section of the river and development of a thick, unconsolidated ice sheet along the channel margins in the lower section. The open water likely has improved overwintering conditions for fish, while the shore-fast ice may exclude fish from important shallow-water/near-shore habitats.

The fish community in the Peace River Study Area consists of a large assemblage of up to 28 fish species (Table 3.1). This is due primarily to a transition from cold-water to cool-water fish populations and the availability of fish habitat in major tributaries. Mountain whitefish is the numerically dominant species in the system followed by longnose sucker and largescale sucker. All other species are much less abundant.

Table 3.1 Fish species recorded in the Peace River Study Area[a].

Family	Common Name	Label	Scientific Name
Salmonidae	Arctic grayling	ARGR	*Thymallus arcticus* (Pallas)
	Brook trout	BKTR	*Salvelinus fontinalis* (Mitchill)
	Bull trout	BLTR	*Salvelinus confluentus* (Suckley)
	Lake trout	LKTR	*Salvelinus namaycush* (Walbaum)
	Kokanee	KOKA	*Oncorhynchus nerka* (Walbaum)
	Lake whitefish	LKWH	*Coregonus clupeaformis* (Mitchill)
	Mountain whitefish	MNWH	*Prosopium williamsoni* (Girard)
	Rainbow trout	RNTR	*Oncorhynchus mykiss* (Walbaum)
Gadidae	Burbot	BURB	*Lota lota* (Linnaeus)
Esocidae	Northern pike	NRPK	*Esox lucius* Linnaeus
Hiodontidae	Goldeye	GOLD	*Hiodon alosoides* (Rafinesque)
Percidae	Walleye	WALL	*Stizostedion vitreum vitreum* (Mitchill)
	Yellow perch	YLPR	*Perca flavescens* (Mitchill)
Catostomidae	Largescale sucker	LSSC	*Catostomus macrocheilus* Girard
	Longnose sucker	LNSC	*Catostomus catostomus* (Forster)
	White sucker	WHSC	*Catostomus commersoni* (Lacepede)
Cyprinidae	Finescale dace	FNDC	*Phoxinus neogaeus* Cope
	Flathead chub	FLCH	*Platygobio gracilis* (Richardson)
	Lake chub	LKCH	*Couesius plumbeus* (Agassiz)
	Longnose dace	LNDC	*Rhinichthys cataractae* (Valenciennes)
	Northern pike minnow	NPMN	*Ptychocheilus oregonensis* (Richardson)
	Peamouth	PEAM	*Mylocheilus caurinus* (Richardson)
	Redside shiner	RSSH	*Richardsonius balteatus* (Richardson)
	Spottail shiner	SPSH	*Notropis hudsonius* (Clinton)
Percopsidae	Trout-perch	TRPR	*Percopsis omiscomaycus* (Walbaum)
Cottidae	Prickly sculpin	PRSC	*Cottus asper* Richardson
	Slimy sculpin	SLSC	*Cottus cognatus* Richardson
	Spoonhead sculpin	SPSC	*Cottus ricei* (Nelson)

[a] Based on information from Pattenden *et al.* (1990, 1991), Slaney *et al.* (1991a), and RL&L (2001).

In general, the Peace River supports low densities of small-sized fish, which are largely restricted to unique habitats that provide refuge. These important habitats, which include tributary confluences and backwater areas, are sparsely distributed in the system. In contrast, larger-sized fish are relatively abundant and the adult life-stage of most species is widely distributed. Population estimates developed in 1989 and 1990 for selected species were: 4160 Arctic grayling, 5995 rainbow trout, and 117,593 mountain whitefish. Many of the large-sized fish species spawn and rear in tributaries to the Peace River, thereby allowing the smaller, younger fish to avoid the potentially adverse conditions in the mainstem river.

Several fish species found in the study area do not typically spawn or rear in large river systems (Arctic grayling, bull trout, and rainbow trout), and therefore, utilize spawning and rearing habitats in tributaries. One species, bull trout, is known to undertake spawning migrations into the Halfway River

(Pattenden *et al.* 1991; Burrows *et al.* 1999) and it is suspected that Arctic grayling utilize the Halfway and Moberly systems for spawning (Slaney *et al.* 1991b). Anecdotal information from past investigations indicate that younger bull trout remain in the Halfway River system for a number of years before they emigrate to the Peace River. In contrast, an influx of young-of-the-year and yearling Arctic grayling into the mainstem river each fall suggests that young fish of this species spend a shorter period rearing in this system.

For some species most recruitment likely occurs from populations residing upstream of the PCN Dam (rainbow trout, kokanee, and lake whitefish), from downstream of the study area (walleye), or from stocking programs (rainbow trout).

Mountain whitefish, longnose sucker, and largescale sucker appear to be the only fish species that can complete all life requisites in the mainstem Peace River. However, all three species also spawn in tributaries to the Peace River. Mountain whitefish may rely on recruitment from the Halfway River (Pattenden *et al.* 1990, 1991) and both sucker species may use the smaller tributaries (Slaney *et al.* 1991a). Concentrations of juvenile suckers near tributary confluences strongly suggest that spawning occurs in the tributaries.

Walleye, goldeye, and northern pike are not a large component of the fish community. These species are more abundant downstream of the British Columbia-Alberta border where they usually are the dominant sportfish (Hildebrand 1990; RL&L 2000). Cool summer temperatures and high water clarity may limit the distribution and abundance of these species in the study area, but they may also be susceptible to water level fluctuations. For example, northern pike require shallow-water habitats and stable water levels for successful spawning, egg incubation, and rearing.

Small-fish species (sculpins and cyprinids) are not abundant in the mainstem river. Cyprinids are most often found at tributary confluences and in sheltered back channels. It is likely that these populations rely on these areas to complete all of their life requisites. In contrast to cyprinids, sculpins are distributed throughout the mainstem Peace River.

Red and blue listed fish species are present in the Peace River watershed, which include goldeye (*Hiodon alosoides*), bull trout (*Salvelinus confluentus*), spottail shiner (*Notropis hudsonius*), and pearl dace (*Margariscus margarita*). With the exception of bull trout, these species are considered rare (goldeye and spottail shiner) or have not been recorded (pearl dace).

Bull trout are present throughout the mainstem Peace River, but tend to be most abundant upstream of the Pine River confluence. Adults of this population are known to undertake extensive spawning related movements into the Halfway River system. Goldeye are restricted to the lower mainstem Peace River downstream of the Pine River where nonspawning adults have been recorded only during spring and summer. This indicates that the goldeye population is migratory and uses the study area on an opportunistic basis. During the Site C fisheries investigations in 1989 and 1990, spottail shiner were not encountered in the mainstem Peace River or its tributaries. In contrast, this species was present at several tributary confluences during the study completed in 1999 (RL&L 2001). This information suggests that the spottail shiner population has expanded its distribution in the Peace River Study Area.

3.2 FISH COMMUNITY CHARACTERISTICS

The general characteristics of the fish community in the Peace River Study Area have been well documented during previous investigations (Slaney *et al.* 1991a, 1991b; Pattenden *et al.* 1990, 1991; RL&L 2001). This section will highlight findings of the current study that are relevant to the objectives of Phase I. All raw data are presented in Appendices B, C and D.

3.2.1 Species Composition

During the field program on the mainstem Peace River, a total of 4,820 fish representing 26 fish species were recorded in the study area (Table 3.2). These included 12 sportfish, 3 suckers, 8 cyprinids/trout-perch, and 3 sculpins.

In the large-fish sample, mountain whitefish was the dominant species (69.8%). Arctic grayling contributed 4.3% to the sample, bull trout and rainbow trout each accounted for approximately 2.0%, and walleye and northern pike accounted for 1.1%. All other sportfish were infrequently encountered.

Of special note was a single brook trout captured in Zone 3 during August, which was 12 km downstream of the Halfway River confluence. This apparently is the first record of the species in the mainstem Peace River in British Columbia (Nick Baccante, Regional Fisheries Biologist, Ministry of Water, Land and Air Protection, *pers. comm.*). Yellow perch (4) were also recorded in a small back channel downstream of the Moberly River, which is the identical location where this species was recorded during the Site C investigations (Pattenden *et al.* 1991).

The listed species goldeye, also was recorded. Nine individuals were captured in Zone 1 during August. It should also be noted that lake whitefish were rarely encountered during the present study, which is in contrast to the Site C work when this species was the third most abundant sportfish in the area (Pattenden *et al.* 1990).

Table 3.2 Number and percent composition of fish species recorded in the mainstem river (all methods combined) during Phase I of the Peace River Fish Community Indexing Program, 2001.

Group	Species	Large-fish Sample		Small-fish Sample	
		Number	Percent	Number	Percent
Sportfish	Arctic grayling	143	4.3	1	0.1
	Brook trout	1			
	Bull trout	83	2.5		
	Burbot	7	0.2		
	Goldeye	9	0.3		
	Kokanee	5	0.1	32	2.2
	Lake whitefish	8	0.2		
	Mountain whitefish	2348	69.8	7	0.5
	Northern pike	36	1.1	2	0.1
	Rainbow trout	79	2.3		
	Walleye	36	1.1		
	Yellow perch	4	0.1	1	0.1
	Subtotal	**2759**	**82.0**	**43**	**3.0**
Suckers	Longnose sucker	382	11.4	36	2.5
	Largescale sucker	204	6.1	7	0.5
	White sucker	7	0.2		
	Young-of-year sucker			847	58.3
	Subtotal	**593**	**17.6**	**890**	**61.2**
Cyprinids/trout-perch	Flathead chub			13	0.9
	Lake chub			14	1.0
	Longnose dace			17	1.2
	Northern pike minnow	12	0.4	11	0.7
	Peamouth[a]			2	0.1
	Redside shiner			134	9.2
	Spottail shiner			294	20.2
	Trout-perch			2	0.1
	Subtotal	**12**	**0.4**	**487**	**33.4**
Sculpins	Prickly sculpin			6	0.4
	Slimy sculpin			21	1.4
	Spoonhead sculpin			9	0.6
	Subtotal	**0**	**0.0**	**36**	**2.5**
Total		**3364**	**100.0**	**1456**	**100.0**

[a] Two fish recorded in tributary sites.

Longnose sucker (11.4%) and largescale sucker (6.1%) were the second and third most numerically important species in the large-fish sample. Northern pikeminnow (0.4%) was the only cyprinid represented in the large-fish catch, which was expected because the other small-fish species were not effectively sampled using boat electrofishing or gillnetting.

In the small-fish sample, sportfish species accounted for a very small percentage of the catch (3.0%). The numbers of sportfish species were as follows: Arctic grayling (1), kokanee (32), mountain whitefish (7), northern pike (2), and yellow perch (1). The kokanee consisted of young-of-the-year and yearling fish captured primarily in October. These fish likely had dispersed from Williston Reservoir.

Unidentified young-of-the year suckers, which were present throughout the study area, accounted for the greatest percentage of the small-fish sample (58.3%). Redside shiner and the listed species spottail shiner were the most prominent cyprinids (9.2% and 20.2%, respectively). Sculpins were represented by three species, but these fish accounted for a small portion of the sample (2.5%).

3.2.2 Distribution

The majority of large-fish species recorded from the mainstem river were widely distributed throughout the study area (Table 3.3). This was true for most sportfish and sucker species, but there were exceptions. For example, goldeye and walleye were encountered only in downstream zones.

Fish species in the small-fish sample exhibited a different spatial distribution. Most sportfish species were encountered in only one or two zones. The one exception was mountain whitefish, which occurred in zones 1 to 4. Several species in the cyprinid group were widespread in the study area. These included northern pikeminnow, redside shiner, and the listed species spottail shiner. Zone 4 was the only location where spottail shiners were not encountered. Cyprinids exhibiting restricted distributions in the study area were flathead chub, lake chub, and trout-perch, which tended to occur only in downstream zones. All three sculpin species were restricted zones 2 and 3.

It should be noted that this information represents the distribution of fish in the Peace River but many of these species were encountered at or near tributary confluences. This distribution pattern is consistent with findings made during the tributary surveys, which documented similar species assemblages (Appendix D).

3.2.2 Abundance Indices

The dominant sampling methods used to document the relative abundance of fish in the mainstem Peace River was boat electrofishing (large-fish sampling) and beach seining (small-fish sampling). Other methods including, gill-netting, and backpack electrofishing were infrequently used and the results of these methods will not be discussed. A complete summary of fish abundance by sampling method is provided in Appendix D.

Table 3.3 Distribution of fish species in the mainstem river during Phase I of the Peace River Fish Community Indexing Program, 2001.

Group	Species	Large-Fish Sample				Small-Fish Sample			
		1	2	3	4	1	2	3	4
Sportfish	Arctic grayling	✓	✓	✓	✓			✓	
	Brook trout			✓					
	Bull trout	✓	✓	✓	✓				
	Burbot	✓		✓					
	Goldeye	✓							
	Kokanee		✓	✓	✓				✓
	Lake whitefish		✓		✓				
	Mountain whitefish	✓	✓	✓	✓		✓	✓	✓
	Northern pike	✓	✓	✓		✓	✓		
	Rainbow trout	✓	✓	✓	✓				
	Walleye	✓	✓						
	Yellow perch		✓				✓		
Suckers	Longnose sucker	✓	✓	✓	✓	✓	✓	✓	✓
	Largescale sucker	✓	✓	✓	✓		✓	✓	✓
	White sucker		✓						
Cyprinids/ trout-perch	Flathead chub					✓			
	Lake chub					✓		✓	
	Longnose dace						✓		
	Northern pike minnow	✓	✓		✓	✓	✓		✓
	Redside shiner					✓	✓	✓	✓
	Spottail shiner					✓	✓	✓	
	Trout-perch					✓	✓		
Sculpins	Prickly sculpin						✓	✓	
	Slimy sculpin						✓	✓	
	Spoonhead sculpin						✓	✓	

Catch rates during large-fish sampling varied depending on species (Figure 3.1). Mountain whitefish was the most abundant fish encountered in the study area (17.7 fish/km). Other sportfish were present, but catch rates were much lower (≤2.0 fish/km). Arctic grayling were the next most numerous sportfish (1.1 fish/km) followed by bull trout (0.6 fish/km), and rainbow trout (0.6 fish/km). Other sportfish species exhibited catch rates of <0.3 fish/km. Longnose sucker and largescale sucker were the second and third most abundant large-fish species, but catch rates did not exceed 3.0 fish/km.

In general, catch rates recorded during small-fish sampling on the mainstem Peace River were very low (Figure 3.1). Young-of-the-year suckers were the most abundant fish encountered 4.3 fish/100 m^2. Redside shiner and spottail shiner were the only other species that exhibited catch rates higher than 0.7 fish/100 m^2. All other species including cyprinids, sportfish and sculpins exhibited very low abundance (<0.2 fish/100 m^2).

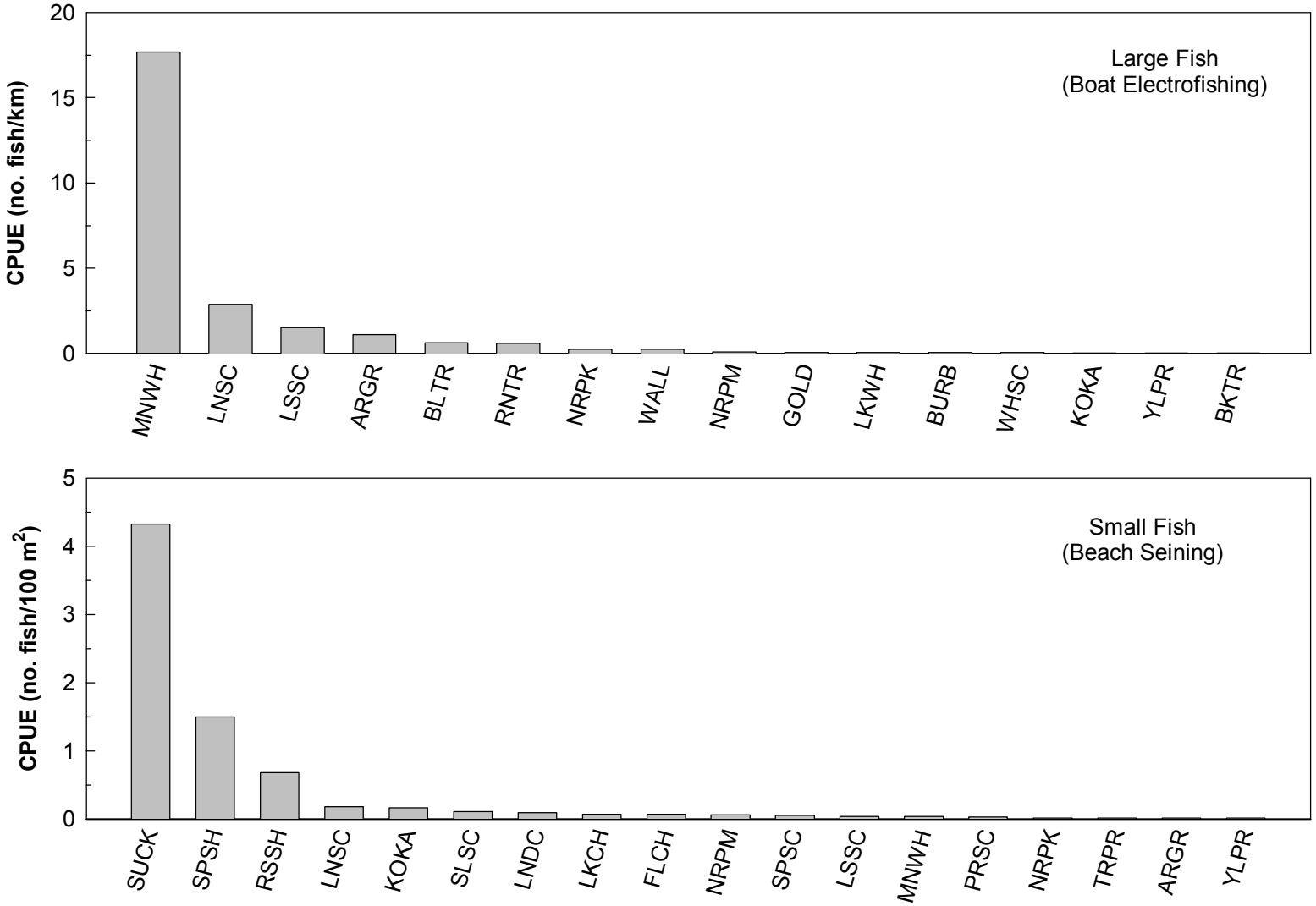


Figure 3.1 Relative abundance of fish species encountered during Phase I of the Peace River Fish Community Indexing Program, 2001 (Seasons and zones combined; see Table 3.1 for fish species abbreviations).

3.2.4 Biological Characteristics

Because concise summaries that describe the biological characteristics of major fish species have been presented in previous reports (Pattenden *et al.* 1990, 1991; RL&L 2001), this section will concentrate on fish species that have data gaps in the information base. These include bull trout, longnose sucker, and largescale sucker. All biological data collected during the present study are listed in Appendix C.

Bull trout

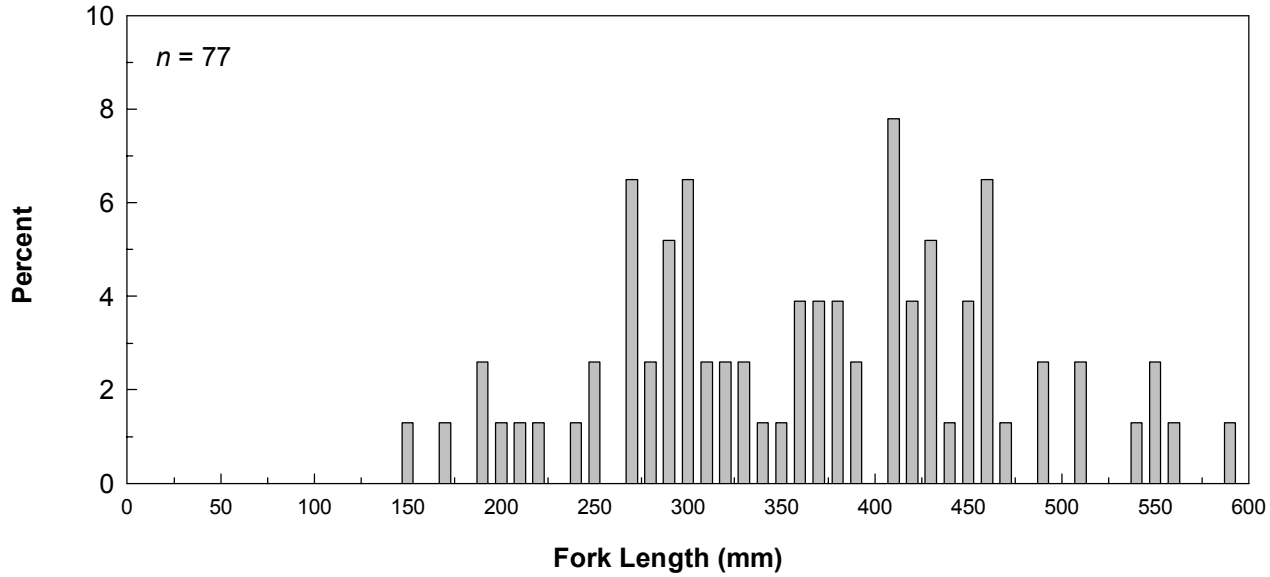
Data were collected from 77 bull trout captured during the small and large-fish sampling programs in August and October. These fish ranged in fork length from 153 mm to 596 mm and from 34 to 3300 gm in weight. The length frequency distribution spanned a full range of size-classes, but two modes were evident at 300 and 410 mm (Figure 3.2). The slope of the length-weight regression line was 2.957, which suggested isometric growth. Sampled fish ranged in age from 2 to 7 years.

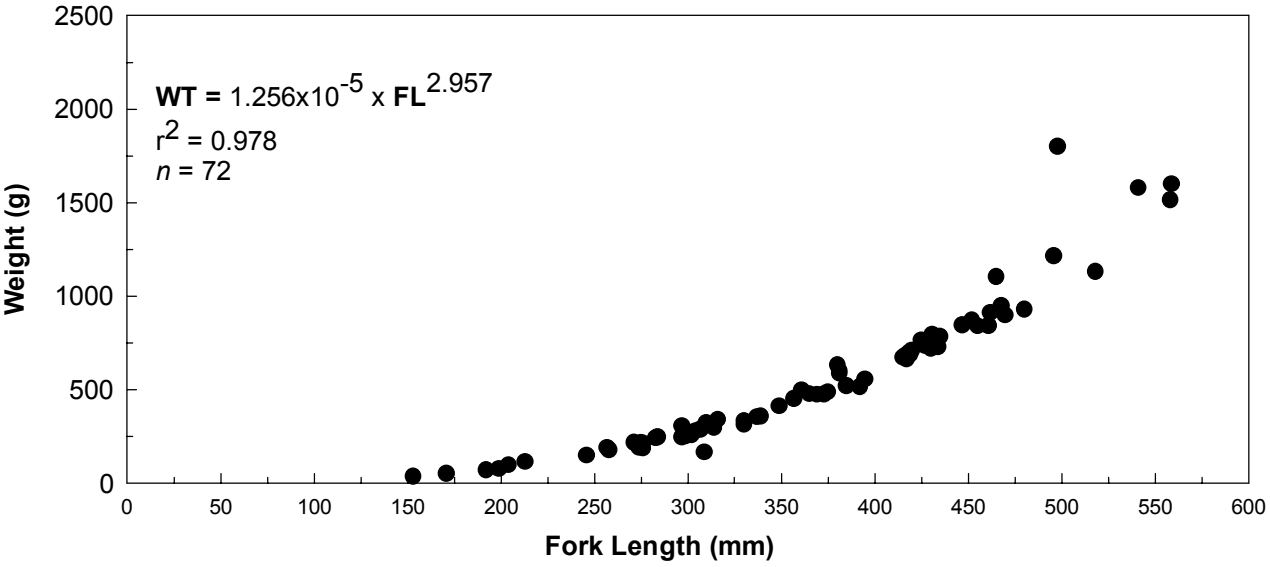
Longnose sucker

Data were collected from 487 longnose sucker captured during all components of the field programs (mainstem and tributary sampling). These fish ranged in length from 25 to 845 mm fork length and the length frequency distribution exhibited three primary modes at 40 mm, 175 mm, and 430 mm (Figure 3.3). These fish ranged in weight from 8 to 1632 gm and the slope of the length-weight regression was 3.090. The ages of fish collected in August ranged from 2 to 13 years. This sample did not include smaller size-classes of fish (<100 mm fork length).

Largescale sucker

The sample of largescale suckers (n=225) ranged in length from 26 to 593 mm fork length. Larger fish dominated the length-frequency distribution with the primary modal peak being approximately 450 mm (Figure 3.4). The length-weight regression slope was 3.045, which was similar to the slope generated for longnose sucker. The ages of fish sampled in August ranged between 2 and 17 years. As for longnose sucker, the aged sample did not include smaller size-classes of fish (<100 mm fork length).





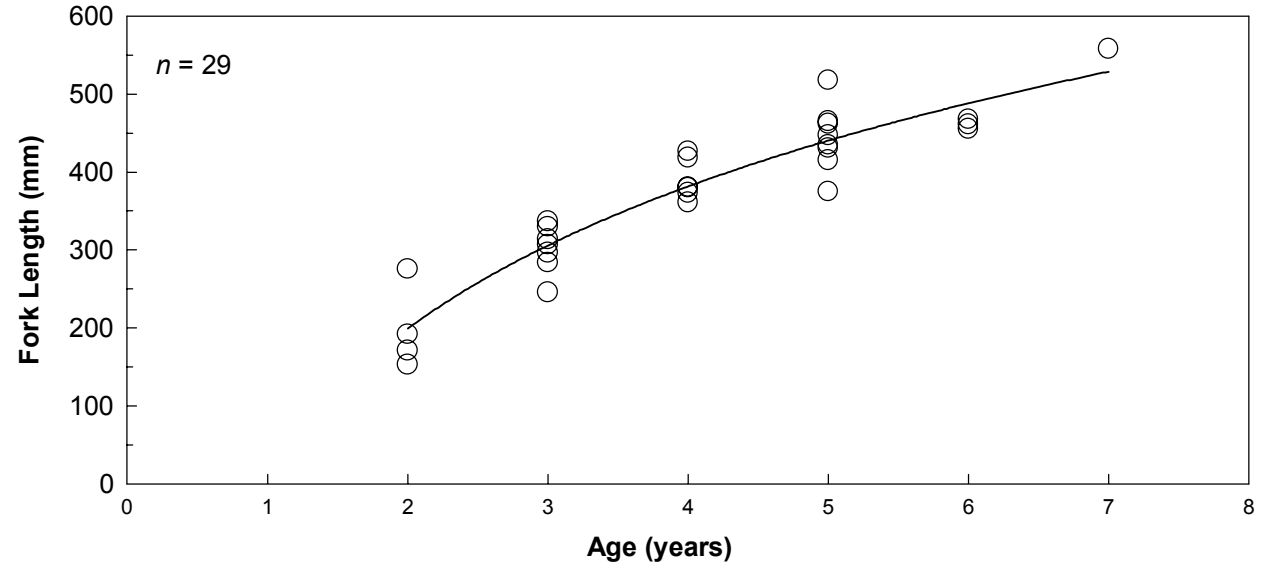


Figure 3.2 Length-frequency distribution, length-weight and length-at-age of bull trout sampled during Phase I of the Peace River Fish Community Indexing Program, 2001. Age data collected in August; best fit regression curve for age-length relationship generated using a two-parameter logrithmic equation [$y=a*\ln(x - x_0)$].

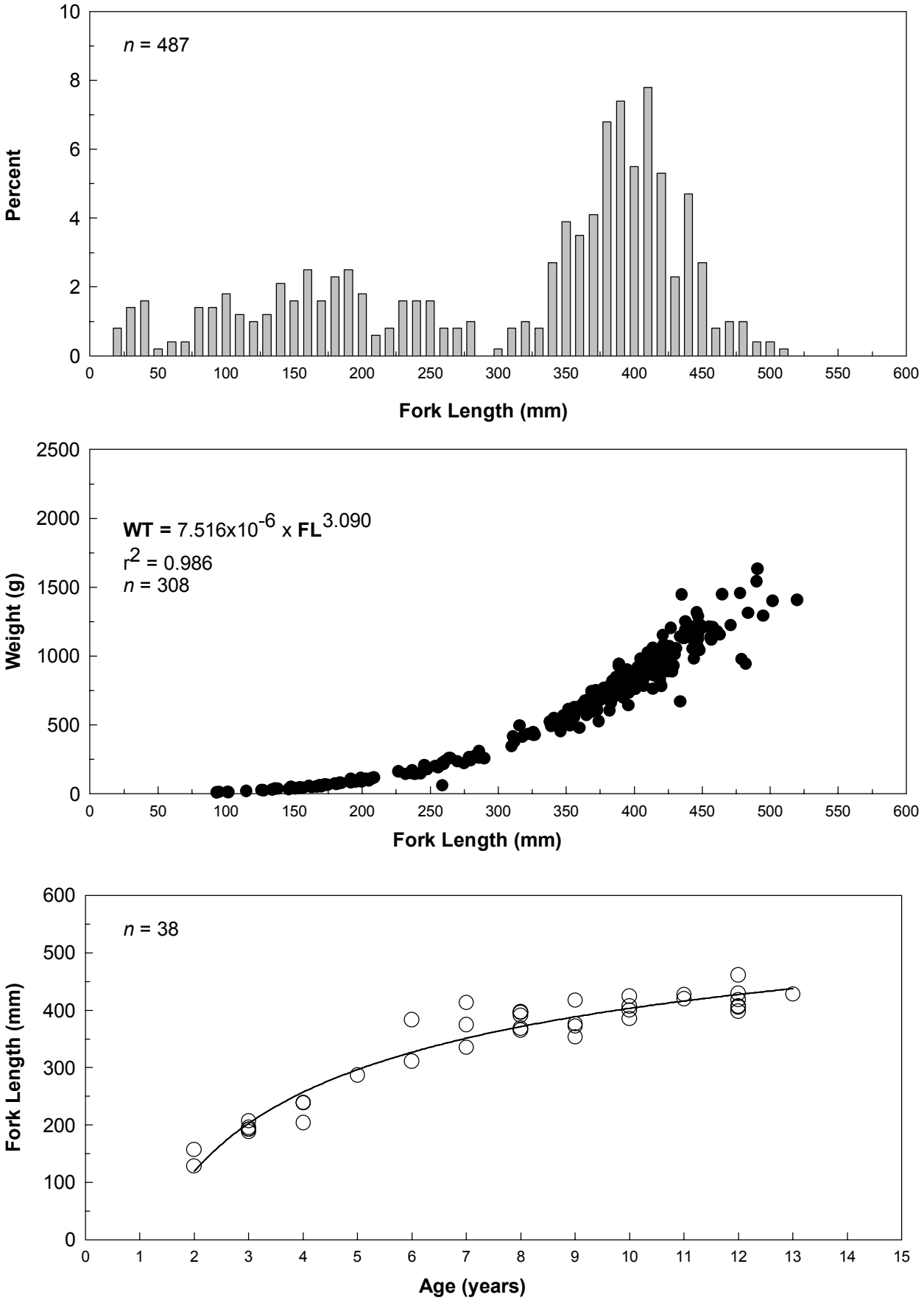


Figure 3.3 Length-frequency distribution, length-weight and length-at-age of longnose sucker sampled during Phase I of the Peace River Fish Community Indexing Program, 2001. Data collected in August; best fit regression curve for age-length relationship generated using a two-parameter logrithmic equation [$y=a*\ln(x - x_0)$].

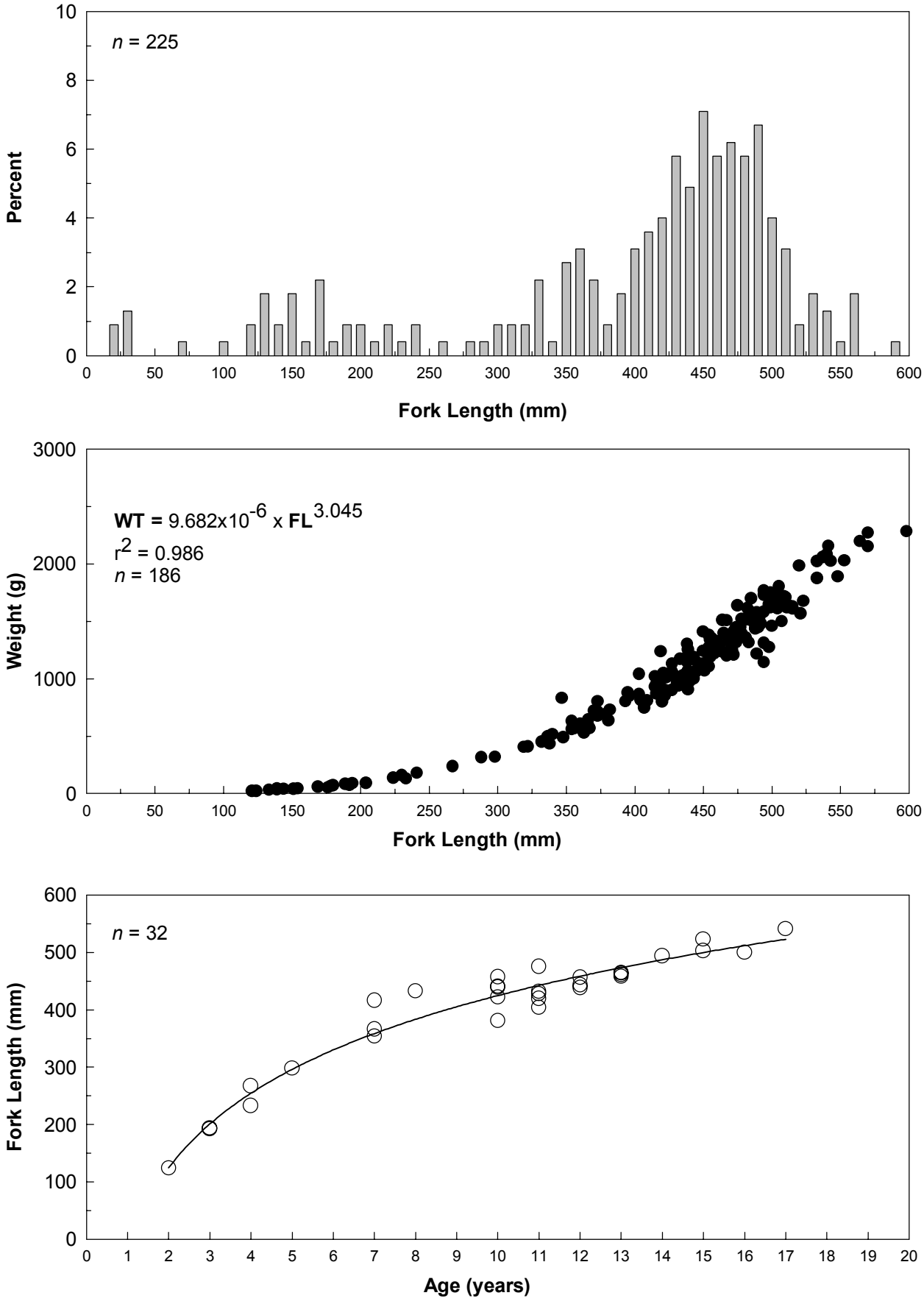


Figure 3.4 Length-frequency distribution, length-weight and length-at-age of largescale sucker sampled during Phase I of the Peace River Fish Community Indexing Program, 2001. Data collected in August; best fit regression curve for age-length relationship generated using a two-parameter logrithmic equation [$y=a*\ln(x - x_0)$].

3.2.5 Listed Species

An objective of the Phase I studies was to document the distribution of four listed species that may occur in the Peace River Study Area. Information was collected for three of these species: bull trout, goldeye and spottail shiner. A fourth, pearl dace, was not recorded during the present study.

Bull trout were recorded in all four sample zones in the mainstem river during August and October (Figure 3.5), but this species tended to be more numerous in upstream zones. Spottail shiner also was widely distributed from zones 1 to 3 during August and October. This species was recorded in the lower sections of tributaries, as well as in tributary confluences and protected back channels in the mainstem river. The only listed species that exhibited a restricted distribution was goldeye. This species was recorded only during August and was found only in Zone 1.

3.3 EVALUATION OF MONITORING TOOLS

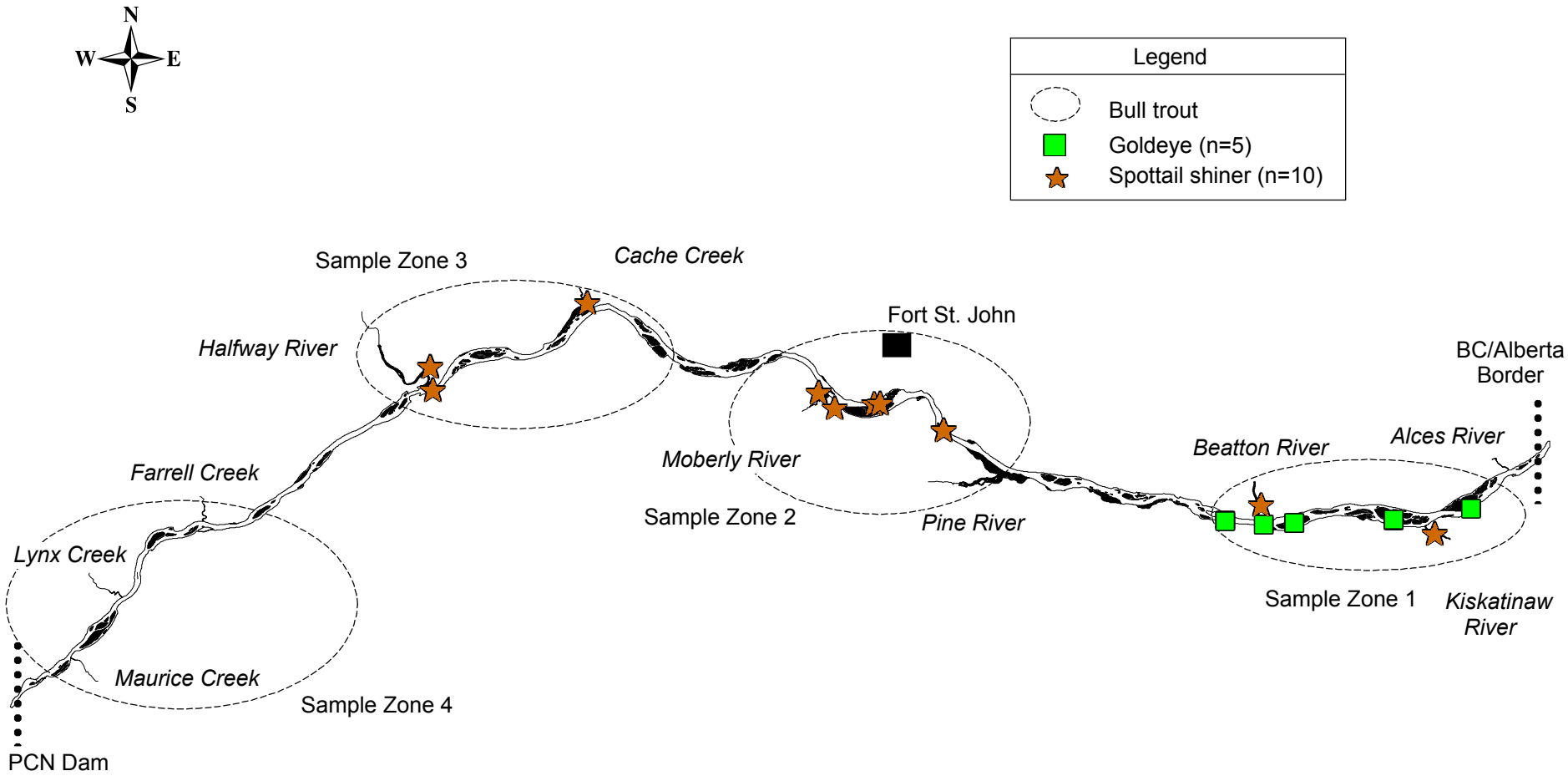
3.3.1 Biological Characteristics

Biological characteristics, such as age-cohort analysis, body condition, and growth rate are parameters that potentially can be used to monitor the health of the Peace River fish community. Mountain whitefish was used to evaluate this parameter because the species is a good candidate for monitoring as follows:

- The species is numerous and widespread in the study area, which facilitates sample collection.
- Mountain whitefish is one of the few species that completes all of its life requisites in the mainstem Peace River, which would make it a sensitive to flow related change.

3.3.1.1 Age-cohort analysis

Age-cohort analysis was not examined during Phase I because it was assumed that the effectiveness of this technique is a function of sample size, standardization of the sampling methods, and collection of a representative sample. The first two criteria can be met, but there is an issue regarding collection of a representative sample. Age 0 and Age 1 mountain whitefish are smaller-sized fish that are typically under-represented due to ineffective capture by boat electrofishing.



P & E Environmental Consultants Ltd.

Figure 3.5

Capture Locations for Listed Species
Peace River Study Area, 2001.

Although age-cohort analysis was not undertaken during the present study, length-frequencies of fish in each zone and session were examined to ascertain whether there were spatial or temporal differences that could bias the sample. If size-distributions were not consistent, then the sample would have to be stratified.

Length-frequency distributions of mountain whitefish appear to differ between sample zones (Figure 3.6). Small fish <250 mm fork length account for a larger percentage of the sample in downstream relative to upstream zones. Also, the occurrence of very large fish >400 mm fork length also appears to be greater in downstream zones. This indicates that the size distribution of mountain whitefish is not consistent between sample zones.

A visual comparison of the data also suggests that there are seasonal differences in length-frequency distributions. A greater percentage of large fish $250 mm fork length occurs in the October sample compared to the sample collected in August. This change may have been related to increased vulnerability of spawning mountain whitefish to capture by boat electrofishing or it may simply reflect seasonal differences in habitat use. Regardless of the reason, there appears to be a seasonal effect on the size distribution of mountain whitefish.

Based on this information, samples of mountain whitefish collected for age-cohort analysis should be stratified by sample zone and season to account for potential differences in the age distribution of sampled fish.

3.3.1.2 Body Condition

The length-weight relationship of fish frequently is used to compare the effect of environmental change on the health of a fish population. Condition factors (e.g., Fulton's Condition) are typically used for this purpose, but there are statistical problems inherent to this approach (Cone 1989). As such, body condition of sample populations was examined using the linear least-squares regression method comparing weight to length. A random sample of weights was selected from mountain whitefish in the dominant size class of the population (i.e., 250 to 350 mm fork length). The analysis did not included fish from Zone 1 because a sample of sufficient size could not be obtained (n=33).

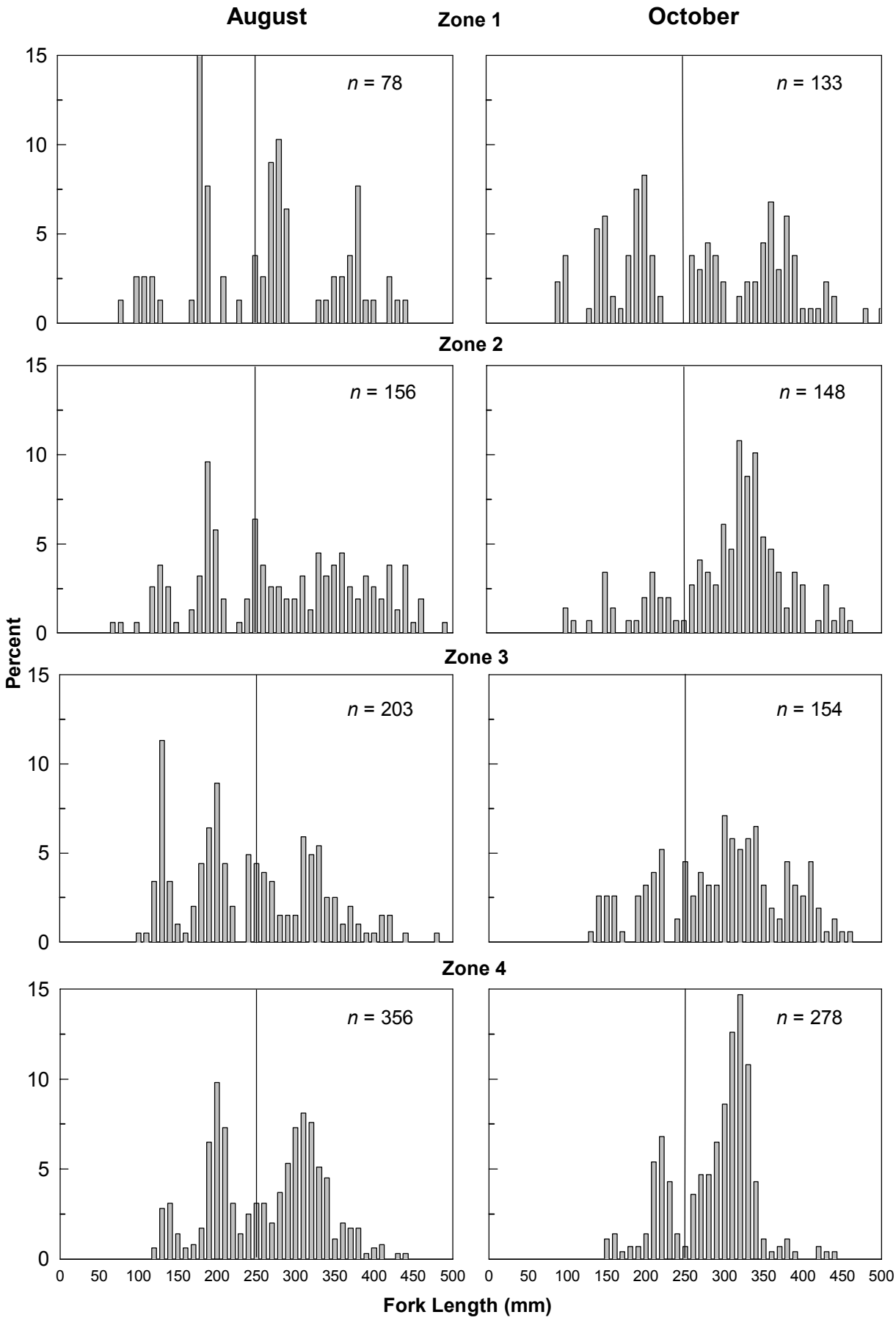


Figure 3.6 Length-frequency distributions of mountain whitefish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001 (Fork length in 10 mm intervals from 0 to 500 mm; vertical line represents 250 mm).

A comparison of mountain whitefish mean weights suggests that there may have been a sample zone effect (Table 3.4). During August, the maximum difference was 13.8 g (Zone 3 versus Zone 4), while in October the maximum difference was 25.7 gm (Zone 3 versus Zone 4). To assess whether these differences were statistically significant, attempts were made to adjust the data for the influence of fish length on weight. For the August data, the analysis indicated that slopes of the length-weight regression lines were different, which precluded testing for zone effect on weight (Figure 3.7). However, the results of this analysis suggest that the growth rates of mountain whitefish, in terms of weight gain per unit length, differed between zones during August.

Table 3.4 Mean weight of mountain whitefish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001.

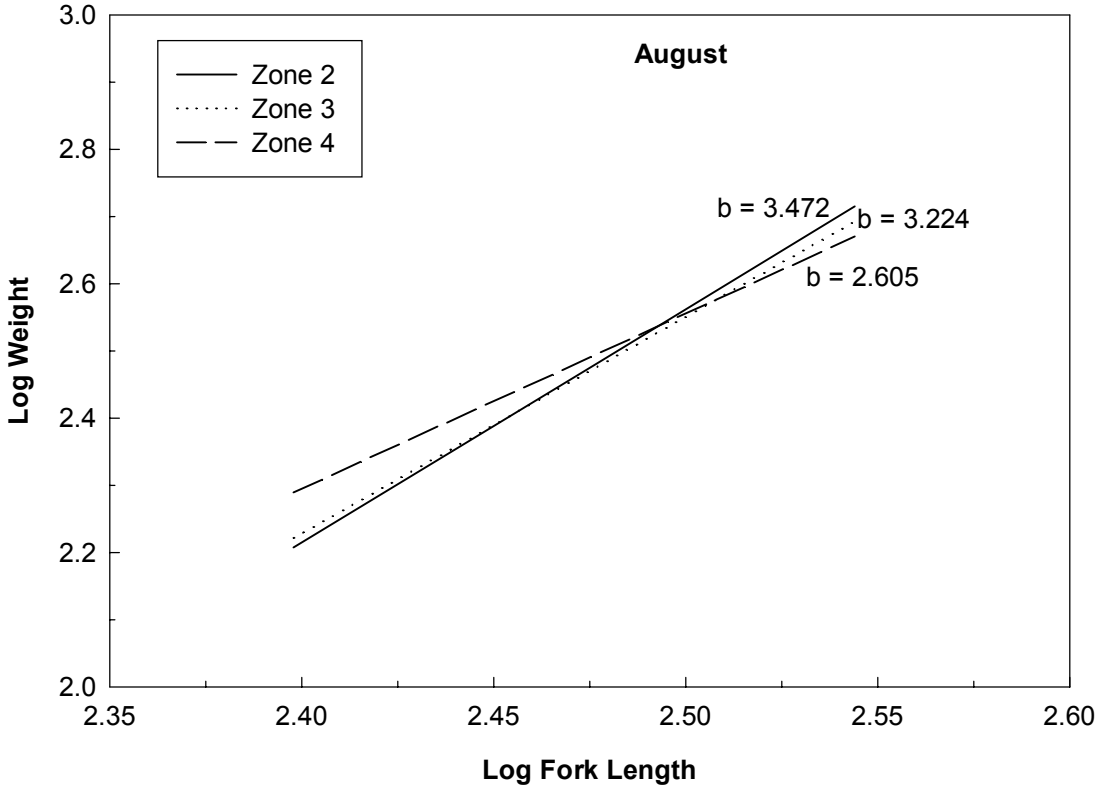
Sample Area	August		October	
	Sample	Mean	Sample	Mean
Zone 2	33	316.2	33	338.1 (AB)[a]
Zone 3	33	308.3	33	315.5 (A)
Zone 4	33	322.1	33	341.2 (B)

[a] Different letter designates statistical difference; see Section 2.3.2 for description of methods.

The length-weight slopes were not statistically different in October suggesting that this discrepancy in fish growth had disappeared. The subsequent analysis of the adjusted data showed that the weight of sampled mountain whitefish was statistically different between zones 3 and 4 (Table 3.4).

The data also show that fish within each zone gained weight between August and October. This increase ranged from 7.2 g in Zone 3 to 21.9 g in Zone 2. This trend was not surprising for this fall spawning species.

Based on this limited data set (i.e., one year of data), the results indicated that the body condition of sampled mountain whitefish differed between zone and season. These results may have been due to differences in environmental conditions such as temperature gradient or food availability, or there may be genetic differences between metapopulations. Although some of these differences are statistically significant it is not known whether they are biologically significant. However, the results indicate that the monitoring program should be designed to account for differences in zone and season.



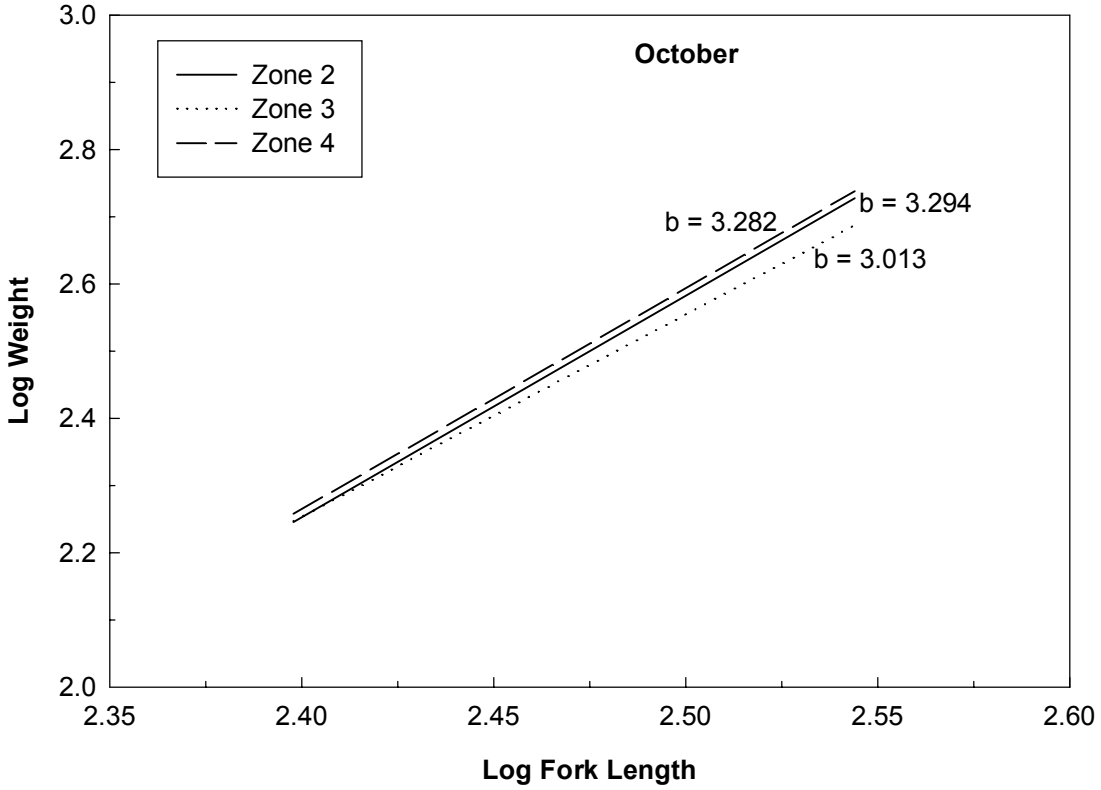


Figure 3.7 Length-weight relationship and slope (b) of the regression line for mountain whitefish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001 (Based on a sample of 33 fish from the 250 to 350 mm size cohort).

3.3.1.3 Growth Rate

Differences in growth rate can be used to monitor changes in a fish population. This typically involves tracking seasonal or yearly changes to one or more age cohorts. A sufficient sample of aged fish was not available to assess whether there were spatial differences in mountain whitefish growth rate. Instead, length-frequency distributions were examined to identify modes among the smaller fish, which corresponded to the younger age-groups. Using this method, it was assumed that fish between 120 and 160 mm fork length represented Age 1 individuals during August (Figure 3.6).

The mean fork length of Age 1 mountain whitefish was 134.7 mm in Zone 2, 135.2 mm in Zone 3, and 141.7 mm in Zone 4 (Table 3.5). Analysis of these data indicated that the difference was statistically significant between Zone 4 and the remaining two areas. The reasons for this difference are not clear, and these results should not be interpreted as an indication of biological importance. As for body condition, these results indicate that if growth rate information is to be used as a monitoring tool, area effects need to be addressed in the sampling design.

Table 3.5 Mean fork length (mm) of Age 1 mountain whitefish sampled in August during Phase I of the Peace River Fish Community Indexing Program, 2001.

Sample Area	Sample	Mean Length ("SE)
Zone 2	15	134.7 " 2.4 (A)[a]
Zone 3	39	135.2 " 1.2 (A)
Zone 4	29	141.7 " 1.7 (B)

[a] Different letter designates statistical difference; see Section 2.3.2 for description of methods.

3.3.2 Abundance Indices

The abundance index, or catch rate, is a common tool used to quantify the relative abundance of fish in large fluvial systems such as the Peace River. The number of fish captured per unit effort (CPUE) using a particular technique provides an index of abundance for species, area, or season comparisons. This tool generally requires less effort than methods used to quantify the absolute abundance of fish (e.g., mark-recapture studies). As such, abundance indices potentially would be a good tool to monitor changes in the Peace River fish community.

Unfortunately, use of abundance index as a monitoring tool has two primary limitations. First, it is often difficult to meet the assumption that fish catchability is constant. For the sampling methods appropriate for use in the Peace River, catchability is often influenced by species, life-stage, fish density, habitat, and sampling conditions (Pugh 1998; Sammons and Bettoli 1999; McInerny and Cross 2000). As such, it is important to identify confounding factors that influence catchability.

The second limitation to use of abundance index as a monitoring tool is the high variation associated with catch rates generated for fish populations in large fluvial systems. The variation decreases the precision of the data, which reduces the ability to detect change. This variation is caused by changes to sampling effectiveness as discussed above, as well as inherent characteristics of the fish population. Fish in large rivers often exhibit clumped distributions and low densities, as well as seasonal differences in habitat use. In order to detect a change in fish abundance steps need to be taken to reduce sample variation.

Small-fish Component

The results of the small-fish sampling program during the present study were very similar to findings by RL&L (2001). Very low catch rates were often recorded and the fish exhibited a patchy distribution. These characteristics prevented an evaluation of factors that influence small-fish catch rates during the present study, and ultimately, they preclude use of small-fish abundance as a monitoring tool. For these reasons, small-fish catch rates were not examined.

3.3.2.1 Factors that Affect Abundance Indices

This section examined the influence of several factors on fish catch rate (Table 3.6). Primary factors of interest included spatial (zone), temporal (season), and habitat effects. Other factors such as water clarity, discharge, sample period, light intensity, water temperature, water conductivity, sampler effectiveness, and sampling protocol also were evaluated. Of these, the discussion will be restricted to water clarity and discharge because the remainder either had no measurable effect (Appendix E) or were standardized prior to the field program. Finally, data parameters such as data transformation and the types of information used to generate catch rates were analyzed to assess whether sample variation could be reduced.

The analysis was restricted to catch rates of the dominant large-fish species that were encountered because these fish were the most promising candidates for monitoring. These included Arctic grayling (ARGR), bull trout (BLTR), rainbow trout (RNTR), longnose sucker (LNSC), largescale sucker (LSSC), and mountain whitefish (MNWH). Finally, the analyses focused on boat electrofishing results because this method was the most effective large-fish capture technique.

Table 3.6 Factors evaluated to ascertain their effect on catch rate during Phase I of the Peace River Fish Community Indexing Program, 2001.

Factors Evaluated	
River zone	Water conductivity[a]
Season	Water velocity[b]
Habitat	Water depth[b]
Water clarity	Substrate type[b]
Discharge	Bank configuration[b]
Light Intensity[a]	Physical instream cover[b]
Sample period[a]	Sampler effectiveness[c]
Water temperature[a]	Sampling protocol[c]
	Data parameters

[a] No measurable effect.
[b] Incorporated into habitat variable.
[c] Standardized.

Zone and Season Effects

Species-specific catch rates generated by boat electrofishing exhibited distinct spatial trends during both sampling sessions (Figure 3.8). Bull trout, mountain whitefish, and rainbow trout increased in abundance from downstream to upstream (Zones 1 to 4). Other species tended to be more abundant in the middle (Arctic grayling) and/or lower portions (longnose sucker) of the study area. Largescale sucker was the only fish that did not exhibit a consistent spatial trend. This species appeared to be more abundant in Zone 1 during August, but the opposite results occurred in October.

In general, most fish species were more abundant during October compared to August. This was true for bull trout, rainbow trout, longnose sucker, and mountain whitefish. Arctic grayling was an exception to this pattern. In this case, this species tended to be more abundant in zones 3 and 4 in August. In October, the catch rate in Zone 2 was much higher and much lower in Zone 4. Seasonal movements by Arctic grayling in the Peace River watershed may explain this discrepancy. Adults may undertake feeding movements to upstream zones during summer. In fall, the dispersal of juvenile fish from rearing tributaries (e.g., Moberly River system) into the Peace River could explain the higher catch rate recorded in Zone 2. There appeared to be no pattern in temporal abundance for largescale sucker.

These results suggest that sampling in the Peace River Study Area should be stratified by sample zone and season to account for spatial and temporal differences in catch rate. This strategy would be effective for most species except largescale sucker.

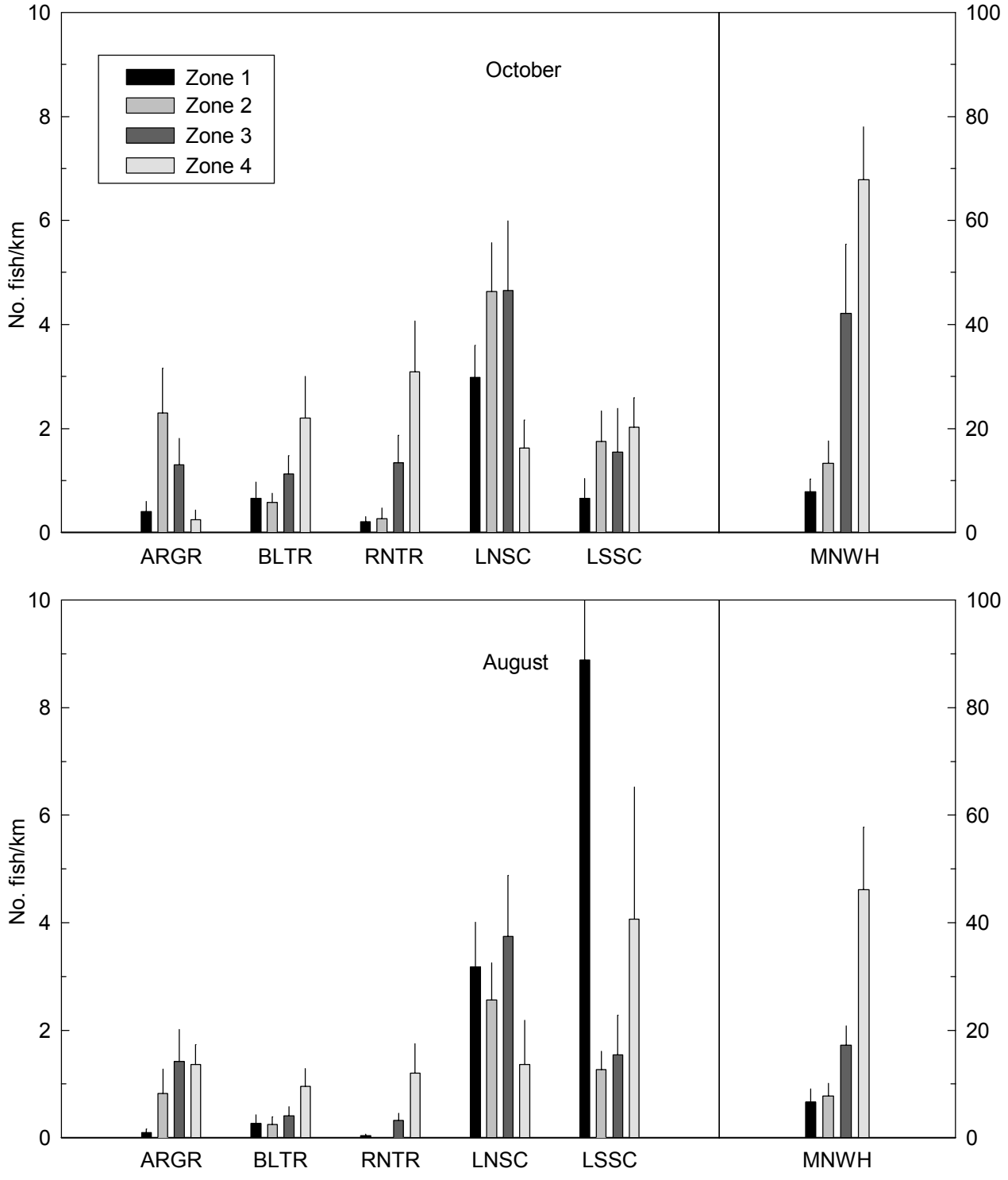


Figure 3.8 Mean catch rate (±SE) of selected fish species recorded during the Phase I of the Peace River Fish Community Indexing Program, 2001 (See Table 3.1 for species labels).

Habitat Effects

Sampling during the field program of the present study was stratified by habitat. Based on information obtained during previous investigations on the Peace River by study personnel (Pattenden *et al.* 1990, 1991; RL&L 2001), the physical characteristics of the channel margin were differentiated into six habitat categories (Table 3.7). Four of these categories represented differences in the amount of physical cover (cover versus no cover) and bank configuration (gradual slope/shallow water versus steep slope/deep water). The remaining two categories represented unique habitat features, which were tributary confluence and back channel. The habitat category sample sizes available for analyses in each sample zone were small (Table 3.7). As such, the analysis was restricted to the SFN and SFC categories, which generally had the highest sample sizes ($n$$4). This approach was justified because catch rates in the other habitat categories were generally low and variable (Appendix D).

Table 3.7 The number of habitat categories sampled during Phase I of the Peace River Fish Community Indexing Program, 2001.

Habitat Categories[a]	Zone 1	Zone 2	Zone 3	Zone 4	Total
SFN	4	3	5	7	19
SFC	4	4	5	4	17
SLN	2	4	0	0	6
SLC	2	2	1	0	5
CON	2	2	1	3	8
BAC	0	2	1	0	3

[a] See Table 2.1 for definitions.

To ascertain what effect habitat category had on catch rate, data differentiated by habitat were compared to data that had not been differentiated. Because the design of the present study only collected information from discrete habitat units, data from RL&L (2001) was used to represent nondifferentiated samples (NOD). That investigation did not confine sampling to discrete habitat types. Catch rate information collected from Zone 3 during October were used for the analysis.

The results of the comparison suggest that fish abundance is influenced by the different sampling protocols (Figure 3.9). Arctic grayling, bull trout, rainbow trout, longnose sucker, and longnose sucker catch rates were much lower in the NOD sample sections. The only exception was mountain whitefish. These results may reflect yearly difference in catch rate, but this is unlikely. The methods used, sampling conditions, and sampler experience were similar between studies. As such, stratifying sample sections into habitat categories probably influences catch rate.

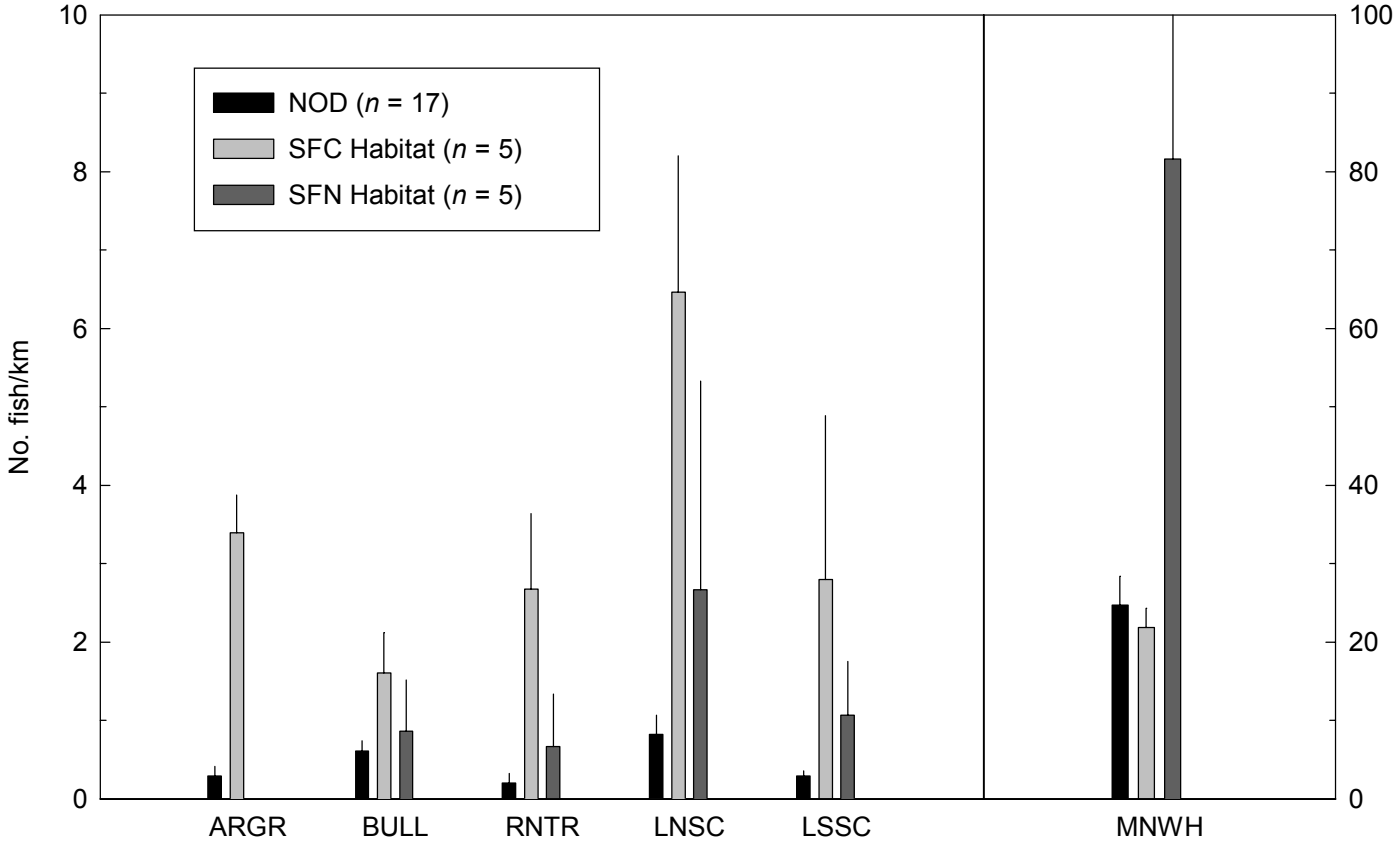


Figure 3.9 Mean catch rate (±SE) of selected fish species based on different sampling protocols used in Zone 3 of the Peace River Fish Community Indexing Program, 2001. Protocols involved sampling discrete habitat categories (present study) versus no differentiation (NOD) between habitat categories [RL&L 2001]; see Table 2.1 for habitat definitions.

Catch rates for all species also were different between habitat categories. For Arctic grayling, bull trout, rainbow trout, longnose sucker, and largescale sucker, catch rates were much higher in sections containing physical cover (SFC) compared to sections without physical cover (SFN). The opposite was true for mountain whitefish. Catch rates were much higher in the SFN category compared to the SFC category. These results indicate that fish species in the mainstem Peace River exhibit distinct habitat preferences based on the presence of physical cover.

The standard errors associated with the habitat category estimates appeared to be higher than estimates derived from the NOD samples, which is an indication that stratifying sampling by habitat category may not remove unwanted variation (Figure 3.9). Because it is important to maintain sample precision, protocols that increase variability should be avoided.

Sample variation was dependant on species and habitat category (Table 3.8). For most species, the coefficient of variation (SD/mean x 100) was greater in the SFN sample compared to the NOD sample. The magnitude of this difference ranged from 22% for mountain whitefish to 86% for bull trout. Rainbow trout was the only species that showed a reduction between the two groups (10%). Comparisons between the SFC category and the NOD group were very different. For most species, the coefficient of variation decreased and the reduction ranged from 21% (bull trout) to 81% (Arctic grayling). Largescale sucker was the only species that did not exhibit a lower sample variation in the SFC habitat category.

Table 3.8 Effects of habitat category on the precision of catch rates[a] during Phase I of the Peace River Fish Community Indexing Program, 2001.

Species	Coefficient of Variation			Percent Change in Variation from NOD	
	NOD[b] Sample (*n*=17)	SFN Habitat[c] (*n*=5)	SFC Habitat (*n*=5)	SFN Habitat	SFC Habitat
Arctic grayling	1.706	-	0.318	-	-81
Bull trout	0.895	1.668	0.711	+86	-21
Rainbow trout	2.494	2.236	0.805	-10	-68
Largescale sucker	1.061	1.439	1.675	+36	+58
Longnose sucker	1.262	2.236	0.603	+77	-52
Mountain whitefish	0.608	0.740	0.245	+22	-60

[a] Data collected in Zone 3 during October used for the analysis.
[b] No habitat differentiation; based on data collected by RL&L (2001).
[c] See Table 2.1 for habitat category definitions.

Based on these findings, catch rate and the associated variation can be modified by stratifying boat electrofishing sections by habitat category. For most species, higher and more precise abundance indices result when habitats characterized by physical cover are sampled.

Water Clarity

Water clarity can affect sampling effectiveness during boat electrofishing. In general, reduced visibility will decrease netter effectiveness resulting in lower catch rates. Water clarity can also influence habitat use by fish. Very low water clarity may permit light sensitive species to enter shallow water habitats making them more susceptible to capture.

Water clarity in the mainstem Peace River varied between sample zones (Table 3.9). In August, there was a distinct upward trend in visibility from Zone 1 to Zone 4 (Figure 3.10), with mean water clarity increasing from 47 to 168 cm. This pattern also occurred in October, but the trend was not linear. Mean values increased from 61 cm (Zone 1) to 101 cm (Zone 3), but then remained similar in Zone 4 (96 cm). Water clarity also varied between seasons. In zones 1 and 2, mean values were higher in October. In upstream zones they were similar (Zone 3) or were lower in October (Zone 4). With the exception of Zone 4 in October, the spatial and temporal trends in water clarity can be explained by tributary contributions of suspended sediments into the mainstem Peace River. In August, tributaries were turbid, (Appendix B), which resulted in decreased water clarity downstream of their confluences. By October most of the tributaries were clearer and had lower water flows, which reduced the contribution of suspended sediments into the mainstem river.

Table 3.9 Water clarity (cm) during Phase I of the Peace River Fish Community Indexing Program, 2001.

Session	Zone	Mean		SE	Sample[a]	Range		
						Minimum		Maximum
August	1	47	±	8	12	10	-	80
	2	79	±	6	13	60	-	110
	3	115	±	16	11	45	-	200
	4	168	±	5	11	145	-	180
October	1	61	±	6	12	42	-	85
	2	86	±	3	13	75	-	100
	3	101	±	4	11	90	-	123
	4	96	±	2	10	85	-	105

[a] Data for tributary confluence and back channels excluded from the summary.

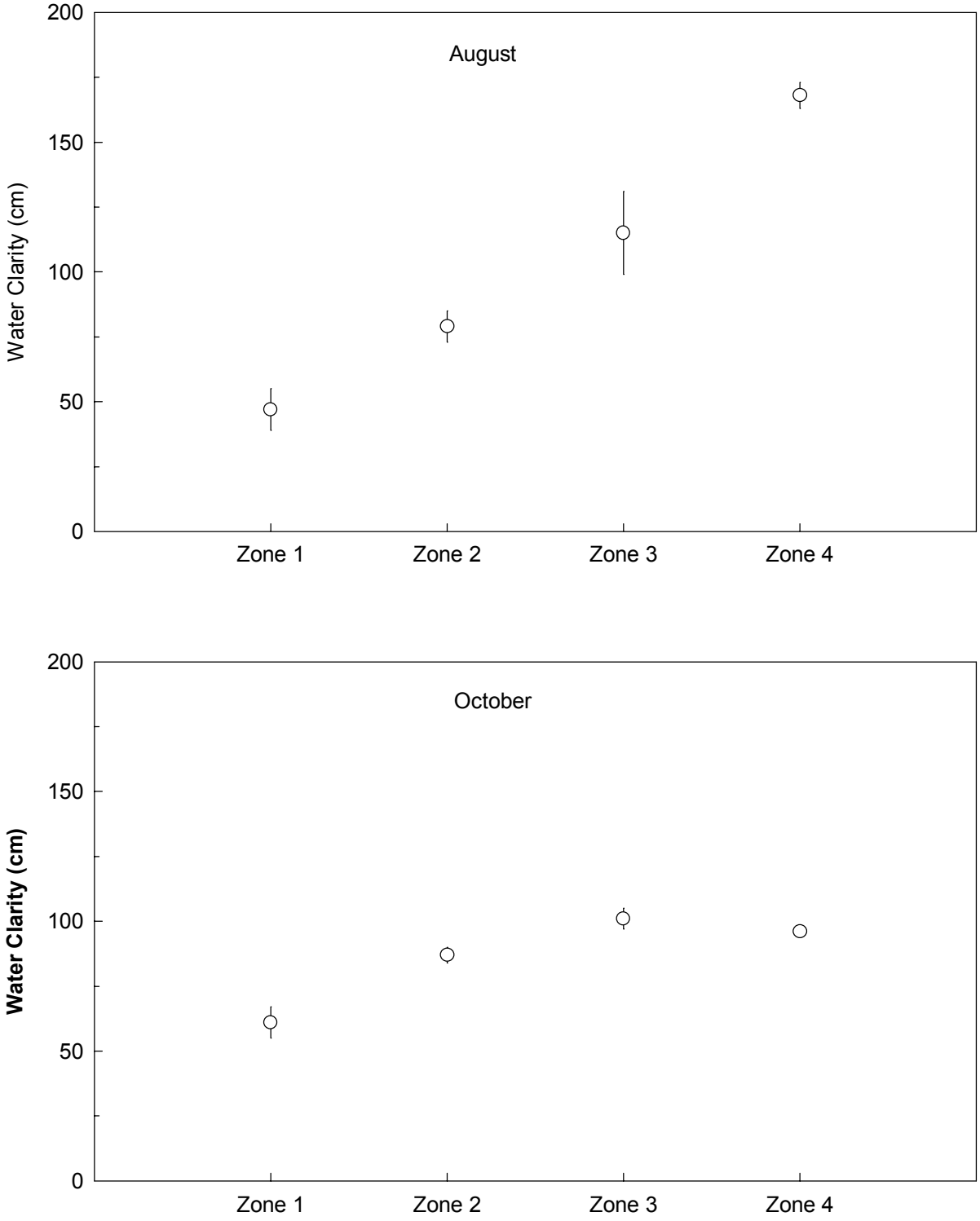


Figure 3.10 Mean water clarity (±SE) during Phase I of the Peace River Fish Community Indexing Program, 2001 (Data for tributary confluences and back channels excluded from the summary).

In general, the variation associated with each water clarity estimate was low, as illustrated by the small standard error (Figure 3.10). In most cases, the range of water clarity values was <45 cm. This lack of variability hindered the evaluation of the effect of water clarity on catch rate. The only exception occurred in Zone 3 during August due to the effects of the Halfway River. The range of water clarity values at this site was 155 cm.

This wide range permitted a statistical evaluation of the effect of water clarity on catch rate. For Arctic grayling and rainbow trout, there was a near significant positive correlation between water clarity and catch rate (Table 3.10). These results support the assumption that, at least for these species, catch rate will increase as visibility improves. The opposite results occurred for longnose sucker and largescale sucker. For these two species there was a significant negative relationship between water clarity and catch rate. These ambiguous results indicate that the apparent effects of water clarity are not constant between species.

Table 3.10 Correlation between catch rate and water clarity in Zone 3 in August during Phase I of the Peace River Fish Community Indexing Program, 2001.

Species	Correlation[a]	P-value
Arctic grayling	+0.552	0.100
Bull trout	-0.321	0.336
Rainbow trout	+0.554	0.077
Mountain whitefish	+ 0.386	0.241
Largescale sucker	-0.722	0.012
Longnose sucker	-0.608	0.047

[a] Pearson's Correlation Coefficient comparing log-transformed data.

These results do not establish a causal relationship between water clarity and catch rate. But, they do indicate that wide variations in water clarity may affect the results. Also, observations by field personnel during the study suggest that water clarity does not begin to have a strong influence on netter effectiveness until visibility is <50 cm. Based on this information, a monitoring program in the Peace River should be designed to account for the effects of water clarity. The most start forward solution is to avoid river sections exhibiting a wide variation in water clarity and restrict sampling to conditions when visibility is >50 cm.

Discharge

Variable discharge in fluvial systems can affect catch rates by modifying fish habitat use and/or sampling effectiveness. At lower discharges fish may be dispersed in available habitats, while at higher discharges they may seek out areas containing physical cover for protection against high water velocities. Sampling effectiveness of boat electrofishing can be influenced by discharge via changes to water velocity. Faster boat speeds associated with higher water velocities tend to increase capture effectiveness because fish are less likely to escape the electrofishing field. Variable discharge also alters water levels, which in turn change the water depth and sampling position in the river channel, both of which can affect sampling effectiveness.

The discharge of the Peace River is influenced by the operating regimes of the W.A.C. Bennett Dam and the PCN Dam generating stations. Both plants are power-peaking facilities that discharge at different rates in response to power demands. During periods of varying power demand flow releases can fluctuate widely on a daily basis. In contrast, flows are maintained at higher levels and are more stable during periods of high power demand.

To ascertain whether discharges during the field program affected catch rate, water level recorder stations were established in each sample zone. The water level data provided an index of discharge at the time of sampling. It should be noted that Station 1 was destroyed during the field program; therefore, the results for Zone 1 represent an extrapolation from Water Survey of Canada (SC) discharge stations (see Section 2.2.3).

The two basic patterns in flow regime (highly variable versus stable) were recorded during the field program (Figure 3.11). In August, the pattern at all stations was depicted by rapid changes followed by periods of static water levels. In contrast, October water levels were higher and were much less variable. The water level data recorded in August also illustrate that the distinct fluctuation is progressively attenuated as the distance from the PCN Dam increases. At Station 4, 14 km downstream of the PCN Dam water level changes were distinct, as were the periods of stable flow at the troughs and peaks of the hydrograph. Fifty-two kilometres downstream, the pattern was less distinct and by zones 2 (98 km) and 1 (127 km) the pattern of variation was much smoother and the periods of static water level were largely absent. This attenuation likely was due to distance from the source, discharge from tributaries, and widening of the river channel.

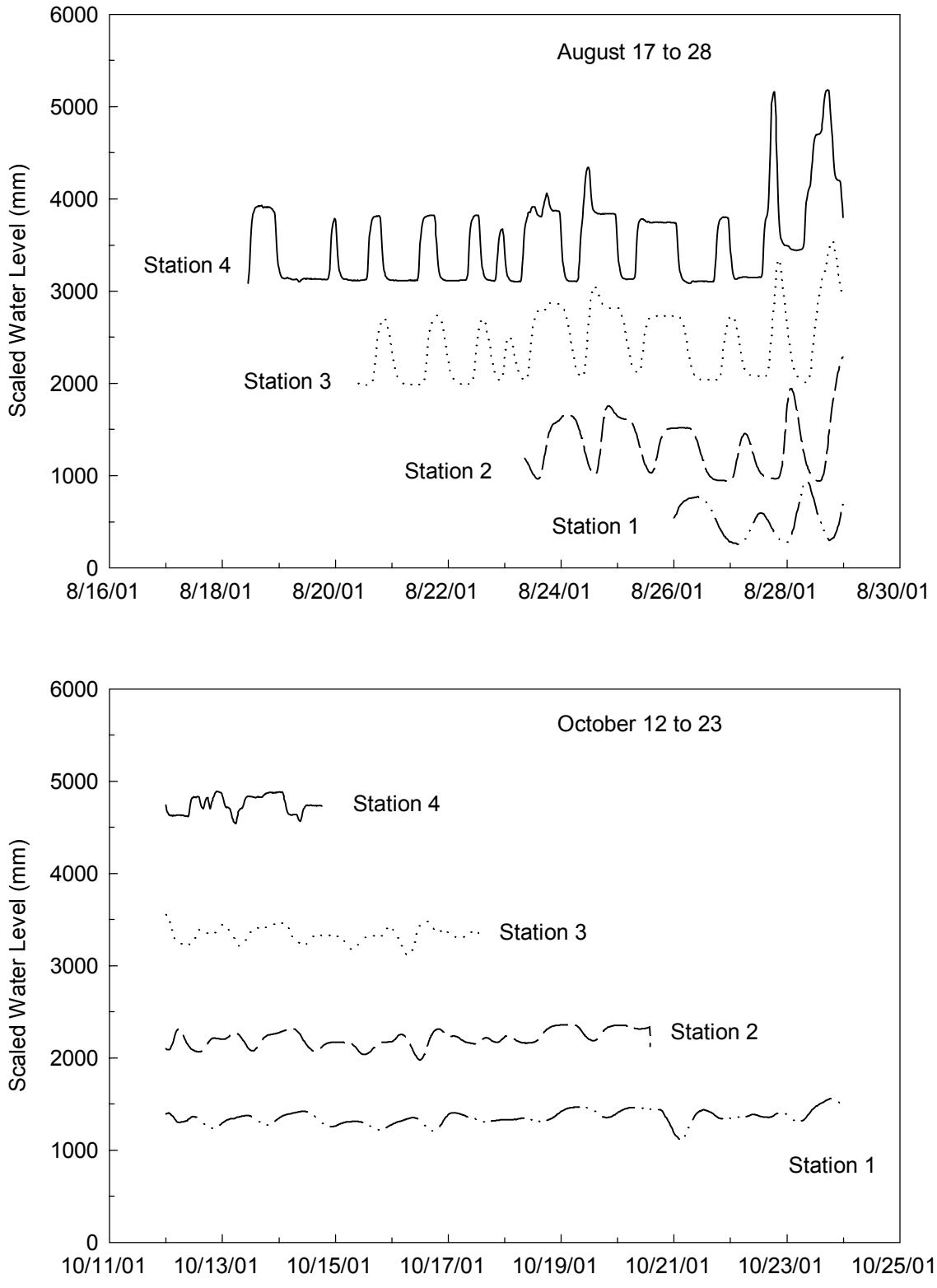


Figure 3.11 Scaled water levels at monitoring stations during Phase I of the Peace River Fish Community Indexing Program, 2001 (Patterns represent meaurements at 15 min intervals; see Section 2.2.3 regarding Station 1).

The August data show that the timing of the response to a change in water flow also is dependant on distance (Figure 3.11; Table 3.11). At Station 4, the approximate time required to record a change in water flow from the PCN Dam was 1.2 h. That same change would not be recorded at Station 1 for approximately 12.7 hr. This resulted in differing sampling conditions in each zone during August. In upstream zones 3 and 4 the hydrograph was dominated by rising and/or stable-low water levels. In Zone 2 all sampling occurred during the falling limb of the hydrograph. Conditions in Zone 1 were different again; sampling occurred at rising and/or stable-high water levels. These data indicated that if discharge affected catch rate, the effects would have to be examined in each zone, but sample sizes available for analysis would be small (Table 3.11).

Table 3.11 Summary of hydrographic information and sample sizes available for analysis during sampling during Phase I of the Peace River Fish Community Indexing Program, 2001.

Session[a]	Station	Distance (km)	Travel Time[b] (h)	Water Velocity[c] (km/h)	No. Samples per Flow Pattern and Habitat Category[d]							
					Falling		Stable-Low		Rising		Stable-High	
					SFN	SFC	SFN	SCC	SFN	SFC	SFN	SFC
August	1	127	12.7	10.0	3	1			1	2		1
	2	98	9.3	10.5	4	3						
	3	52	5.0	10.5			5	4		1		
	4	14	1.2	11.5			3	2	1	5		

[a] Data for October not presented because water levels were consistently stable and high.
[b] Approximate estimate based on visual assessment of water level patterns.
[c] Approximate estimate based on distance and travel time from upstream station; Station 4 results based on comparison to WSC Hudson Hope station data.
[d] See Table 2.1 for definitions.

As indicated earlier, catch rates for most species in each sample zone were higher in October compared to August (Figure 3.8). Higher, more stable water levels during October may explain this difference. High, stable flows provide consistent habitat conditions along the channel margins that may attract fish and greater water velocities may cause fish to seek shelter in these areas. Unfortunately, the relative importance of water level versus season on catch rate cannot be discerned using these data.

This problem was addressed by replacing recorded water levels with the proportional change in water level. Data collected in Zone 3 in the SFC habitat category during August and October were examined to ascertain whether there was a relationship between the proportional change in water level and catch rate. It should be noted that although water level data collected in October were considered to represent stable, high conditions they still exhibited variation that allowed comparison to catch rate.

The results suggested that water level could affect catch rate of some species regardless of season (Table 3.12). Bull trout, mountain whitefish, and longnose sucker catch rates were positively correlated to water level and this relationship was statistically significant. Other species including Arctic grayling, largescale sucker, and rainbow trout did not show a significant correlation. These results tend to support the position that higher water level, or discharge, may result in an increase in catch rate for some fish species.

Table 3.12 Correlation between catch rate and proportional change in water level during Phase I of the Peace River Fish Community Indexing Program, 2001.

Species	Correlation[a]	P-value
Arctic grayling	-0.428	0.217
Bull trout	+0.830	0.003
Rainbow trout	+0.161	0.656
Mountain whitefish	+0.755	0.012
Largescale sucker	+0.170	0.639
Longnose sucker	+0.664	0.036

[a] Pearson's Correlation Coefficient; sample data (n=10) collected in SFC habitat categories in Zone 3 during August and October used for the analysis.

These results may reflect the effects of flow stability rather than differences in flow volume. Water levels in October were more stable compared to conditions in August (Figure 3.11). As such, higher catch rates may have been due to stable water levels. If this were the case, then catch rates during stable flows in August should be greater than catch rates during periods of changing water levels. Mountain whitefish catch data from habitat categories SFC and SFN in zones 3 and 4 were used for this analysis because this was the only species that was abundant in all areas. Catch rates of mountain whitefish were 37.9 fish/km (n=7) during stable, low water levels in August compared to 23.0 fish/km (n=14) during rising water levels. This difference approached, but was not statistically significant (P=0.053, One-tailed T-test using log-transformed data).

These findings provide additional evidence that catch rates may be affected more by flow stability rather than flow volume. More work is required to establish whether this is a correct assumption. Regardless, these patterns indicate that fluctuations in water level are a common occurrence in the Peace River Study Area and that they probably influence catch rate.

Data Parameters

Use of Observed Fish

The type of information used to generate catch rates can affect both the accuracy and precision of the estimate. Boat electrofishing does not result in the capture all fish that are encountered during sampling; therefore, a common practice is to enumerate the number of observed fish and incorporate this information into the catch. This approach can provide a more accurate estimate of actual fish abundance and it ensures that scarce species or life stages are not excluded from the sample. However, including the number of observed fish in the catch may affect the precision of the sample. Field conditions, experience, and observer bias will affect the investigator's ability to correctly identify and count fish. As the number of fish observed increases, these problems are likely exacerbated.

The effect of using observed fish on the precision of catch rate was examined using data collected by RL&L (2001) from zones 3 and 4 during October 1999. These data were used because counting all observed fish was not part of the sampling protocol during the present study. The evaluation consisted of comparing the coefficient of variation of the catch rate estimate generated with and without observed fish.

The results of the comparison indicate that use of observed fish to generate catch rate will increase the sample variation for most species (Table 3.13). This increase could range from 3% (mountain whitefish) to 118% (longnose sucker). In one instance, a slight reduction in variation occurred (-2% for bull trout). Based on this information it appears that inclusion of all observed fish in the catch sample can lead to a decrease in precision.

Data Transformation

Catch rate data for fish species in large rivers often exhibit a skewed sample distribution caused by a large percentage of low values and a sample variation that is proportional to the mean. Transformation techniques are often used to adjust sample data so that they meet the assumptions of parametric statistical analyses (e.g., normal distribution and variance is independent of the mean). A second benefit of transformation is a reduction in sample variation.

Table 3.13 Effects of using observed fish on the precision of catch rates[a] during Phase I of the Peace River Fish Community Indexing Program, 2001.

Species	Coefficient of Variation		Percent Change in Variation
	Captured	Captured + Observed	
Arctic grayling	2.372	2.668	+12.5
Bull trout	1.054	1.038	-1.5
Largescale sucker	1.406	2.063	+46.7
Longnose sucker	1.310	2.862	+118.5
Mountain whitefish	0.522	0.539	+3.3
Rainbow trout	1.796	1.914	+6.5

[a] RL&L (2001) data collected in zones 3 and 4 during October used for the analysis.

Logarithmic transformation was used to adjust the Peace River catch rate data. As illustrated by the results for mountain whitefish, this created a more symmetrical distribution compared to nontransformed data that was heavily skewed to the left (Figure 3.12). This not only met the assumption for normal distribution (P=0.003, One-sample Kolmogorov-Smirnov Test), but it also made the sample variance independent of the mean (Figure 3.13).

Logarithmic transformation also resulted in a large reduction in sample variation. Using Zone 3 data collected in October as an example, the difference in variation exceeded 22% for all the target species (Table 3.14). The best results were recorded for Arctic grayling (46.2%) and mountain whitefish (67.8%). Based on this information, catch rate data should be log-transformed prior to analysis to meet the assumptions for parametric statistical tests and to improve the precision of the estimates.

Table 3.14 Effects of logarithmic transformation on the precision of catch rates[a] during Phase I of the Peace River Fish Community Indexing Program, 2001.

Species	Coefficient of Variation		Percent Change in Variation
	Raw Data	Log-transformed	
Arctic grayling	0.318	0.171	-46.2
Bull trout	0.711	0.463	-34.9
Largescale sucker	1.675	1.244	-25.7
Longnose sucker	0.603	0.362	-40.0
Mountain whitefish	0.245	0.079	-67.8
Rainbow trout	0.805	0.624	-22.5

[a] Based on data collected in Zone 3 during October in the SFC habitat category; see Table 2.1 for definition.

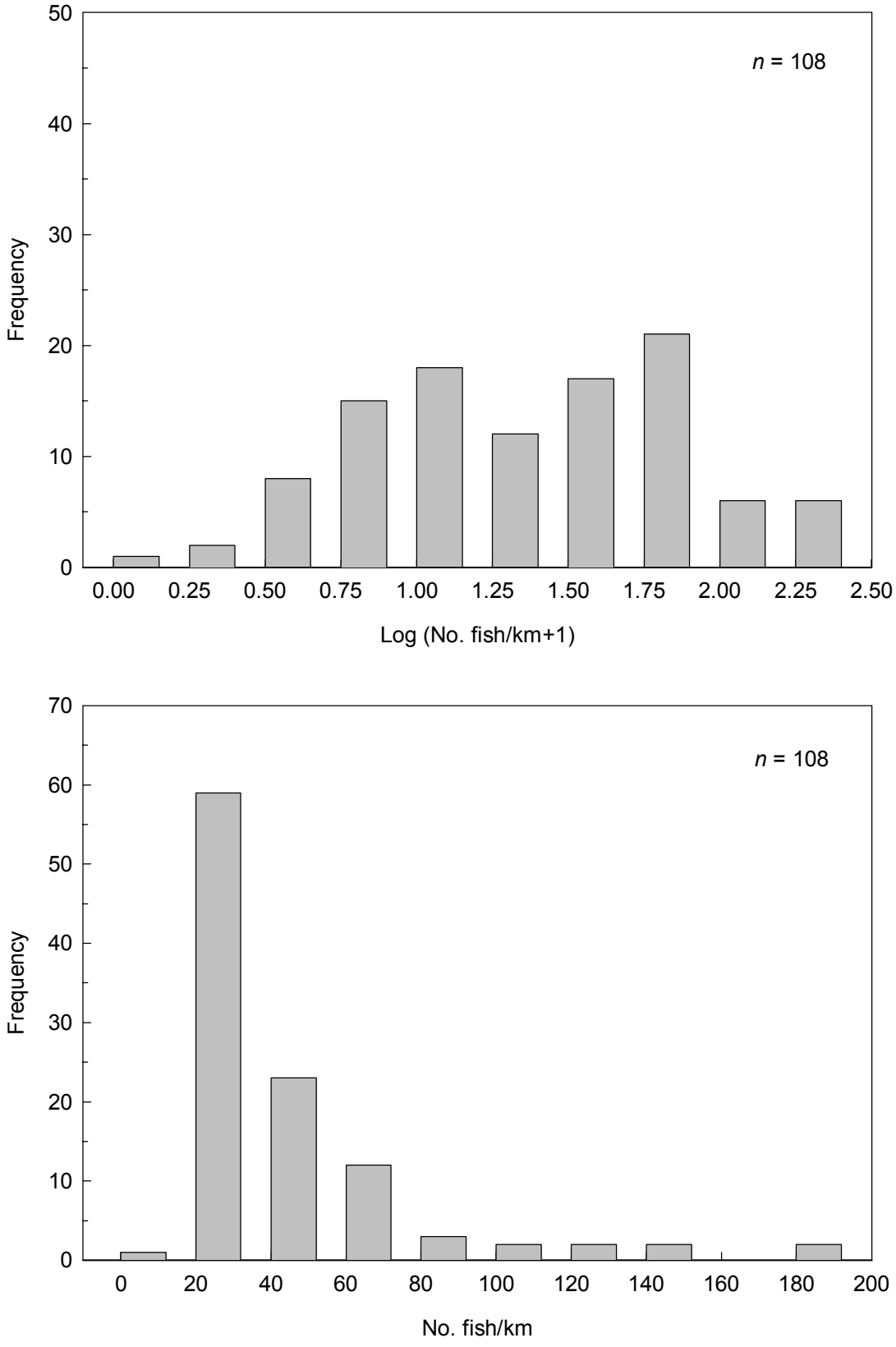


Figure 3.12 Frequency distribution of mountain whitefish catch rates before and after log transformation during Phase I of the Peace River Fish Community Indexing Program, 2001 (Data from tributary confluences and back channels excluded from the analysis).

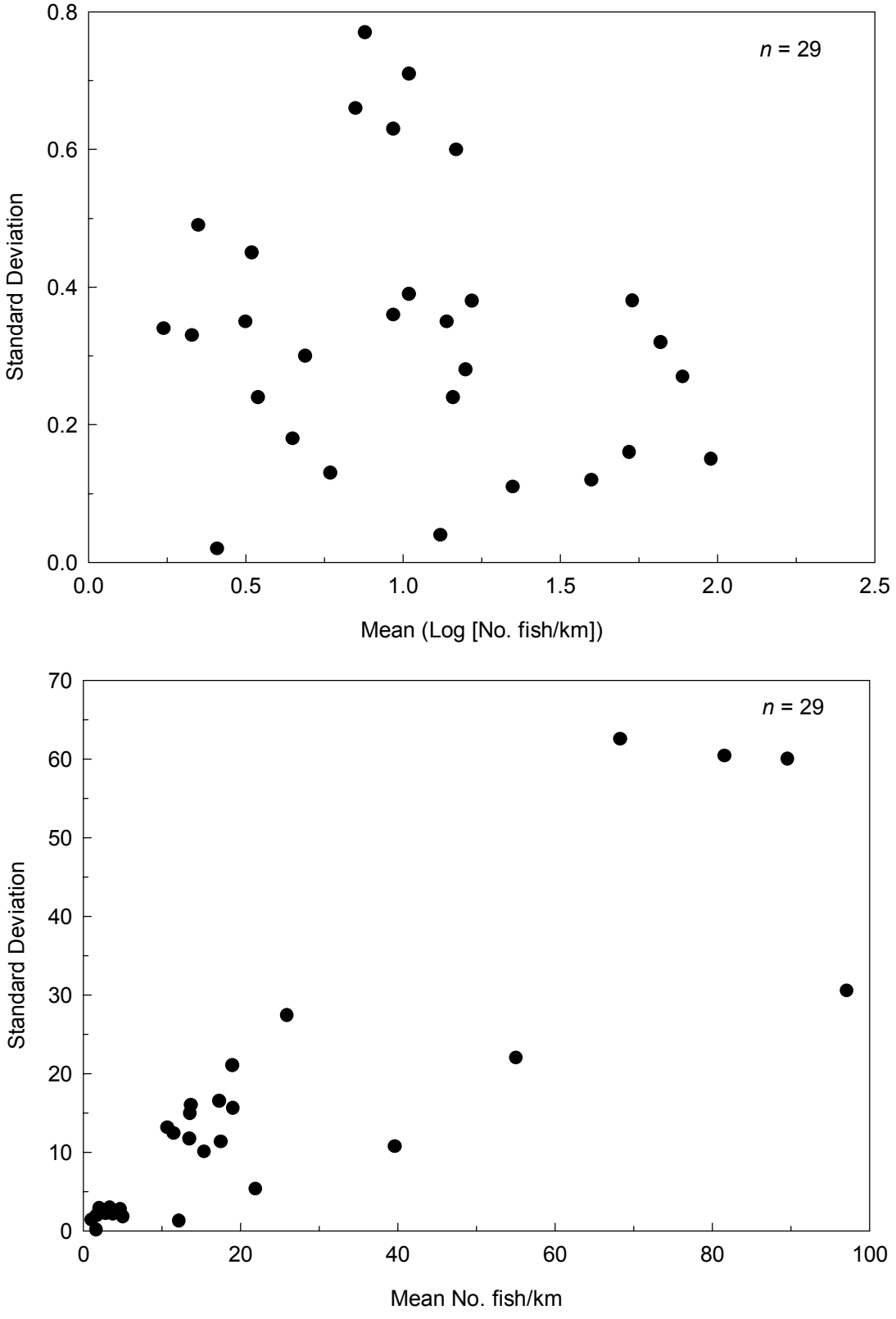


Figure 3.13 Relationship between sample mean and standard deviation for mountain whitefish catch rates during Phase I of the Peace River Fish Community Indexing Program, 2001 (Data point represents mean for each abitat category within each sample zone and season; means with zero standard deviation removed from the analysis).

3.3.2.2 Effort Required to Detect Change

Because a major objective of the Peace River Fish Community Indexing Program is to monitor change in fish abundance, it is important to establish whether the catch rate estimates are sufficiently precise to detect certain magnitude of change for given sampling effort. Based on experience from Phase I studies and other investigations on the Peace River, it is likely that logistical constraints will limit the number of sections to approximately 25 that can be effectively sampled in any one zone. Therefore, it is important to establish whether the precision of the estimates will enable detection of change given this upper limit of sampling effort.

Power analysis results indicated that the catch rates estimates of very few species would be sufficient to detect a 10% change in fish abundance (Table 3.15). The only exception was mountain whitefish, which would require eleven samples. When the difference was increased to 25%, only one other species could be added to the list (Arctic grayling). In this case nine samples would be needed to detect a 25% change in fish abundance. At 50% difference, bull trout (15 samples) longnose sucker (10 samples), and possibly rainbow trout (26 samples) would be suitable candidates for monitoring.

Table 3.15 Sample size required to detect change in catch rates during Phase I of the Peace River Fish Community Indexing Program, 2001.

Species	Mean ± SD (Log [No. fish/km + 1])	Sample Size[a]		
		10% Difference	25% Difference	50% Difference
Arctic grayling	1.456 ± 0.249	47	9	4
Bull trout	0.888 ± 0.411	>100	55	15
Largescale sucker	0.838 ± 1.043	>100	>100	>100
Longnose sucker	0.861 ± 0.674	>100	34	10
Mountain whitefish	3.107 ± 0.247	11	3	2
Rainbow trout	1.132 ± 0.707	>100	99	26

[a] Based on power analysis using data collected in Zone 3 during October in the SFC habitat category; $\alpha = 0.05$, Power = 0.80, n=5.

These results indicate that catch rate could be used to monitor changes in the abundance of fish. But, for many species the sample size needed to detect a change that is appropriate for monitoring purposes (e.g., 25% difference in adult fish abundance) would be prohibitively high. Of the fish present in the Peace River Study Area, Arctic grayling and mountain whitefish are likely the best species for this purpose.

The results of the power analysis should be viewed as preliminary because assumptions were made regarding the criteria used (i.e., $\alpha = 0.05$ and Power = 0.80). If the monitoring program is willing to accept a lower level of statistical certainty, these criteria can be adjusted (e.g., $\alpha = 0.1$), which will result in less sampling effort being needed to detect a specific amount of change.

3.3.2 Population Estimates

Only mountain whitefish and Arctic grayling had recoveries for the purposes of population estimation. Table 3.16 provides the data used for the population estimates. Figures 3.14 and 3.15 plot the posterior distribution over the range of the prior chosen for mountain whitefish and Arctic grayling, respectively. The span of the posterior distributions precludes quoting sensible point estimates. Figures 3.16 and 3.17 present the minimum population estimates and their associated precision for mountain whitefish (MNWH) and Arctic grayling (ARGR). For example, from the curves we can determine that there is a 0.95 probability that the abundance of mountain whitefish was at least 150,000 and the abundance of Arctic grayling was at least 1000, approximately.

Table 3.16 Data for population estimates for the 2001 study.

	Mountain Whitefish	**Arctic Grayling**
Marks Applied	602	42
Fish Examined	1192	71
Recaptures	3	2

3.3.3.1 Factors that Affect Population Estimates

The factors that affect the population estimates can be evaluated through an assessment of assumptions required for the closed sequential population model.

1. The population is closed, so the population size does not change over the period of the experiment. Because mountain whitefish and Arctic grayling reside in the study area, fish are not expected to immigrate or emigrate to/from the study area. Mortality should not be an issue because marked and unmarked fish should experience the same mortality. However, any estimates only pertain to the first sequence (17 to 28 August). Fish that were <250 mm fork length during the first sequence (thus, not represented by marks) may be larger than 250 mm in the second sequence and counted as fish examined for a mark.

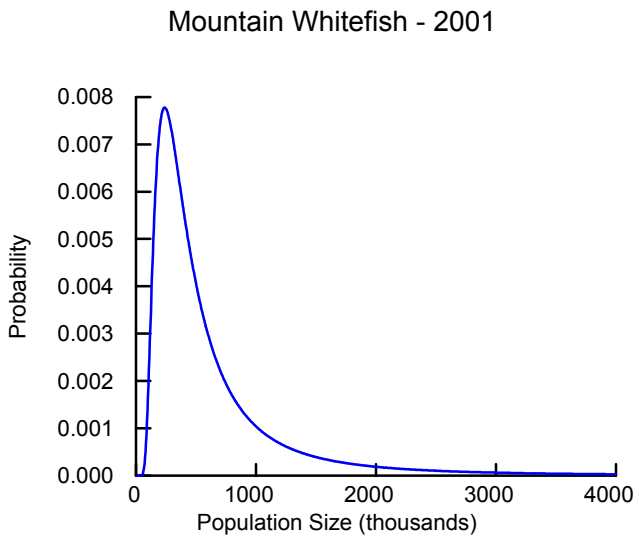


Figure 3.14 Posterior distribution for mountain whitefish.

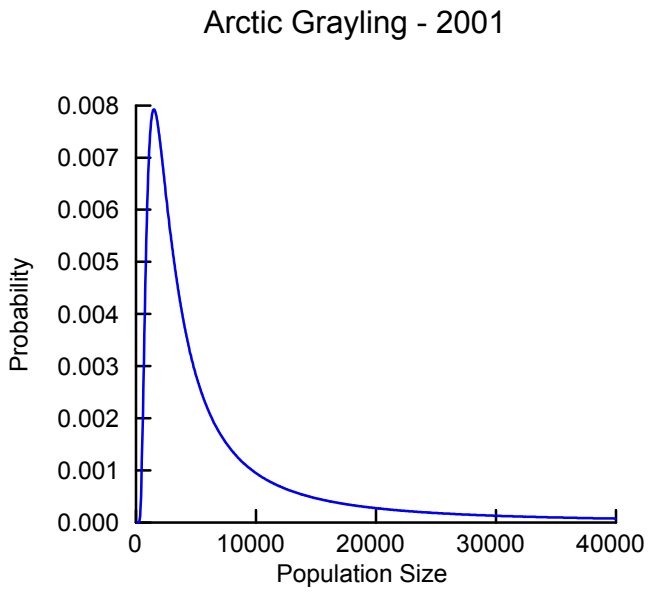


Figure 3.15 Posterior distribution for Arctic grayling.

Because very little information on growth was collected (i.e., few recaptures), the sample size was not corrected for this bias which results in an over estimate of the population size. The minimum population estimates (Figures 3.16 and 3.17) are mainly dependent on the number of marks applied and are insensitive (robust) to the growth-recruitment bias.

2. The probability of capturing a marked fish at any time is equal to the proportion of marked fish in the population at that time. A concern is that marks are applied at different locations with different mark rates because of different capture probabilities (e.g., water clarity) and effort. If the mark application is not random or in proportion to the population available at each location, then subsequent population estimates may be biased. The analytical correction is to stratify the estimation procedure by location; however, very sparse recoveries prevented the application of such a procedure. On the other hand, marked and unmarked fish had approximately two months to mix and return to their normal behavior.

3. Fish do not lose their marks over the period of the study. Each captured fish was examined for the presence of a scar. The incidence of tag loss was assessed to be very small (Pattenden *et al.* 1990).

4. All marked fish are reported on recovery. Only fish brought on board were included in the number of fish examined for a mark; thus, it is unlikely that a tagged fish would escape detection.

3.3.2.2 Effort Required to Detect Change

Table 3.17 provides the historical estimates of population size by species. The effort column refers to the total number of hours of boat electrofishing expended in the study. As previously noted, precision is defined as half the 95% HPD expressed as a percentage of the Bayesian mean. Note the very large values for the 2001 study implies that any point estimates are highly unreliable. Table 3.18 provides the precision at various effort factors based on the 1989 and 1990 studies for Arctic grayling and mountain whitefish. Figures 3.18 and 3.19 plot the precision as a function of electrofishing effort in hours for Arctic grayling and mountain whitefish, respectively.

Table 3.17 Comparison of historical estimates of population size by species generated in the Peace River Study Area.

	Effort (hrs)	Arctic Grayling	Mountain Whitefish	Lake Whitefish	Rainbow Trout	Walleye
1989[a]	95.9					
Recoveries		18	126	3	19	6
Mean		4,359	117,593	33,814	1,418	2,591
Precision (%)		47.1	17.4	136.6	41.3	86.1
1990[a]	110.9					
Recoveries		37		7	19	7
Mean		4,160		82,012	5,995	2,881
Precision (%)		32.9		65.5	39.0	64.7
2001[b]	26.2					
Recoveries		2	3			
Mean		7,700	560,000			
Precision (%)		175.0	140.0			

[a] From Pattenden *et al.* 1990, 1991.
[b] From present study.

Table 3.18 Precision based on the 1989 and 1990 studies[a].

Factor	Arctic grayling		Mountain whitefish
	1989	1990	1989
0.50	104.3	69.1	35.5
0.75	64.6	44.5	23.4
1.00	47.1	32.9	17.4
1.25	37.0	26.2	13.9
1.50	30.5	21.8	11.5
1.75	25.9	18.6	9.9
2.00	22.5	16.3	8.7
2.25	19.9	14.4	7.7
2.50	17.8	13.0	6.9

[a] From Pattenden *et al.* 1990, 1991.

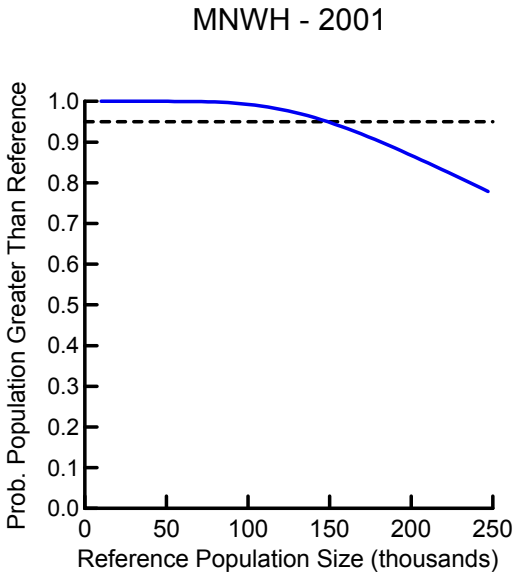


Figure 3.16 Minimum population estimates and the associated precision for mountain whitefish.

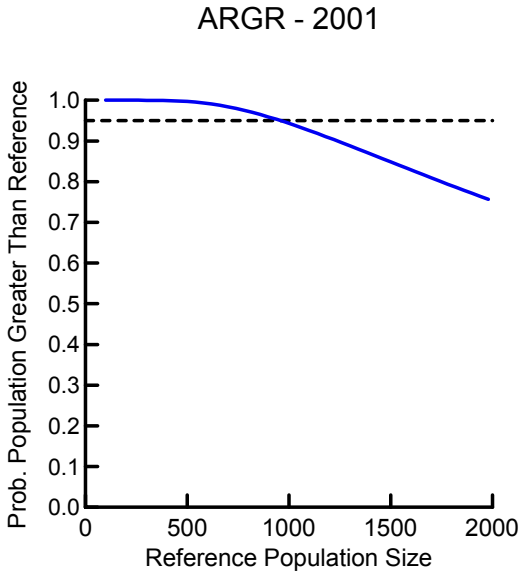


Figure 3.17 Minimum population estimates and the associated precision for Arctic grayling.

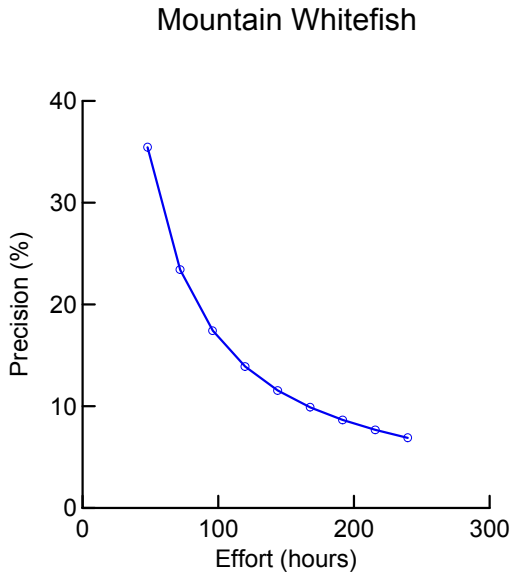


Figure 3.18 Precision of the population estimate at various effort for mountain whitefish.

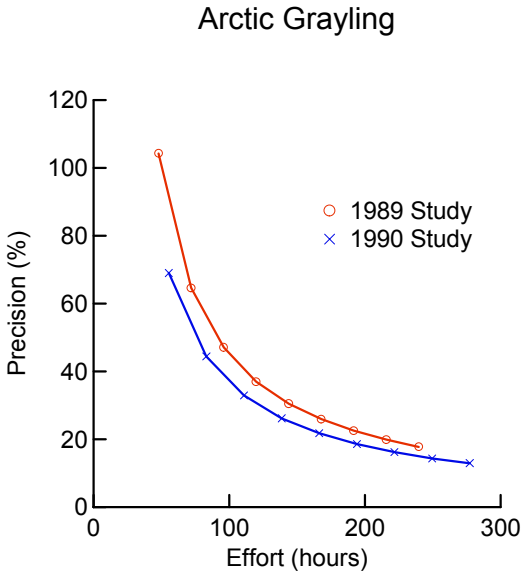


Figure 3.19 Precision of the population estimate at various effort for Arctic grayling.

4.0 SUMMARY

4.1 FISH COMMUNITY CHARACTERISTICS

The Phase I field program completed in August and October documented the general characteristics of the fish community in the mainstem Peace River and the lower sections of its tributaries. The findings of this investigation, which described the biological characteristics, distribution, and abundance of fish populations, were similar to findings by previous investigators (Pattenden *et al.* 1990, 1991; Slaney *et al.* 1991a; RL&L 2001).

The Phase I study also addressed data gaps in the information base. Biological characteristics of selected species were described (bull trout, longnose sucker, and largescale sucker) and the distribution of listed species (bull trout, spottail shiner, and goldeye) was documented. Bull trout and spottail shiner are widely distributed in the study area, while goldeye are restricted to the lowermost reach of the mainstem river. The results of the present study also suggest that there has been an expansion in the historical distribution of spottail shiner. This species was not encountered in the Peace River Study Area during investigations completed in 1989 and 1990, but it is now widespread in the mainstem river and the lower sections of several tributaries.

4.2 EVALUATION OF MONITORING TOOLS

4.2.1 Biological Characteristics

Biological characteristics including age-distribution, body condition, and growth rate can be used as monitoring tools for the Peace River Fish Community Indexing Program. Evaluation of data for one species, mountain whitefish, indicated that for each of these parameters the sample should be stratified to account for spatial and temporal differences in population characteristics.

4.2.2 Abundance Indices

Information collected during the small-fish component of the Phase I study indicated that catch rates generated by beach seining and backpack electrofishing were generally very low and highly variable. The results were consistent with findings made during previous investigations of the small-fish community in the Peace River Study Area. These characteristics preclude use of small-fish catch rates as a viable monitoring tool.

Results of the large-fish sampling component of the Phase I study suggest that catch rates generated by boat electrofishing can be used for monitoring purposes. Evaluation of factors that affect abundance indices showed that zone, season, habitat, water clarity, and discharge could influence catch rate.

Fish population abundance indices varied spatially and temporally. Catch rates tended to be highest in October and species-specific abundance was related to the location of the sample zone. Species such as bull trout, mountain whitefish, and rainbow trout were more numerous in upstream zones, while species such as Arctic grayling and longnose sucker were more abundant farther downstream. Catch rates of most target species also were higher in habitat sections containing physical cover. Mountain whitefish was the only species that was more abundant in habitat sections without physical cover.

During the Phase I field program, water clarity was not an important factor in much of the study area because visibility was generally consistent and high (i.e., >50 cm). However, wide variations in water clarity in Zone 3 during August did affect catch rate. Abundance indices of some species increased with water clarity, while for other species the opposite trend occurred. This suggests that the effect of variable water clarity is not consistent among species.

Variable discharge may also affect catch rate. Preliminary results examining the relationship between water level and catch rate suggest that catch rates are higher during periods with stable water flows (high and low) compared to periods with changing water flows (rising and falling).

The best approach to reduce the effects of these factors is to stratify the sample. This would help ensure a constant catchability within a particular stratum and would improve the precision of the catch rate estimate. Examination of data parameters also suggest that sample variation could be reduced further by not including all observed fish as part of the catch and by adjusting the data using logarithmic transformation.

The precision of the catch rate data does limit its effectiveness as a monitoring tool. Power analysis suggests that catch rate data for Arctic grayling and mountain whitefish would be suitable to detect a change of 25% in the sample population. But, logistical constraints likely would preclude collection of sufficient sample sizes for other species.

4.2.3 Population Estimates

The basic assumptions for the mark-recapture sequential closed population model for mountain whitefish and Arctic grayling can be met. While not incorporated into the estimates for the present study because of sparse recaptures, adjustments to the data to account for the growth related recruitment and stratification of recapture probabilities could be integrated into the estimation procedure. For the Phase I study, point estimates of population size should not be quoted because of poor precision. Only minimum population estimates and their associated precision should be cited. For example, we can determine that there is a 0.95 probability that the abundance of mountain whitefish was at least 150,000 and the abundance of Arctic grayling was at least 1000. Based on work during previous investigations in 1989 and 1990, more than 100 hours of boat electrofishing are needed to stabilize the precision of the population estimates. This would represent a four-fold increase, approximately, in the sampling effort expended during Phase I.

5.0 RECOMMENDATIONS

5.1 APPROACH AND DESIGN

The stated overall objective of the Large River Program is:

"to establish fish monitoring protocols that can be used reliably across the Peace River and Columbia River watersheds to provide an index of the general status of the fish community"

The monitoring protocol for these large river systems should be based on a systematic assessment of the following factors:

a. The potential effects of the dam operation regimes on the fish community.
b. The best indicator species based on life history and catchability.
c. The specific sampling locations or group of sampling locations.
d. The optimal sampling times or sequence.

The seasonal, daily and hourly fluctuations in discharge related to the W.A.C Bennett and PCN dams has a number of potential effects on the fish community of the Peace River. Rapid fluctuations in water level can displace or exclude fish from preferred habitats. Changes in water temperature characteristics can cause shifts in fish community assemblages and increased winter flows can alter ice conditions.

It is generally agreed that the impact of these factors will likely be greatest in the shallow water/near-shore habitats. Given these concerns, the best monitoring approach would be to focus sampling efforts on species residing in the mainstem Peace River with the following characteristics:

1. Commonly found in shallow water or near-shore habitats.
2. Mainstem Peace River is the primary environment.
3. Represent an important component of the local fish community.
4. Behavior and abundance facilitates the ability to sample the population.
5. Population is not substantially affected by recruitment from outside sources (e.g., hatchery enhancement activities).

Based on the above criteria, we recommend that mountain whitefish and Arctic grayling would be suitable target species for the monitoring program. Both species are readily captured in near-shore areas using boat electrofishing gear. Previous mark-recapture studies in the Site C Area indicate that size of the adult populations (fish $250 mm fork length) is very different. In 1989-1990, the Arctic graying population was estimated to be between 2,500 and 7,100 fish, while the mountain whitefish population was in excess of 90,000 fish. These species tend to be sedentary at certain times of the year making them suitable for mark-recapture studies. Tag recapture data from 1989-1990 suggest that fish do not move more than 10 km from the release site. Sampling locations, times and techniques should be optimized to monitor these species; however, other species also can be enumerated.

Results of the Phase I study suggest that the section of the Peace River between the Pine and Halfway rivers (Reach 2 or Phase I zones 2 and 3) would be the best location to periodically assess the population status of these species. This reach supports substantial populations of both species. Mountain whitefish rely upon this reach for spawning and rearing, while most of the Arctic graying are juveniles or adults that use the Halfway and Moberly River systems for spawning and early rearing. A concern regarding this choice is that the reach is situated 50 km downstream of the PCN Dam, which may reduce the ability to monitor the effects of dam operation. To address this issue, monitoring can be extended into Reach 3 (upstream of the Halfway River). Or, the section used for monitoring can be situated immediately downstream of the PCN Dam (e.g., adjacent to Hudson Hope). In this case, mountain whitefish would be the only suitable fish species.

Within the monitoring reach, sampling should be distributed between at least 3 sites that would be roughly 10-15 km long and at least 10 km apart. A minimum of 3 sites would be necessary to assess within-year variability between the monitoring sites and help ensure that any changes observed between years are not simply the result of localize changes in the fish population. The 10-15 km within each site should provide an adequate sample of various habitats, while the 10 km separation between the sites should reduce the potential of fish moving between the survey sites.

The timing and frequency of sampling efforts in a particular year are also important components of the monitoring program. The optimal sampling period depends on the river flow, water temperature, water clarity, and fish life history characteristics. Based on the Phase I study results, the best sampling conditions would occur when flows are high and stable, which may concentrate fish in near-shore habitats where they can be more efficiently sampled by boat electrofishing. It is difficult to predict when these conditions occur in the Peace River, but late summer to fall will likely provide an appropriate window. High water clarity also improves sampling effectiveness and these conditions are also most like to occur in late summer and fall when tributary inputs are low.

The life history characteristics of mountain whitefish and Arctic grayling will also increase their vulnerability to capture in late summer or fall. Mountain whitefish populations are accessible during fall sampling because they aggregate in near-shore areas prior to spawning. Mature Arctic graying migrate into tributaries to spawn in spring, but most of the adult population would have returned to the Peace River by late-summer. If juvenile Arctic grayling are to be included in the monitoring program, sampling would need to be deferred until mid to late fall after juvenile fish have dispersed from rearing tributaries to overwinter in the mainstem Peace River.

The timing of the surveys should be determined by water temperature and flow conditions rather than calendar dates. The program would be initiated after the target water temperature and flow conditions had been achieved. The minimum sampling effort would include three complete surveys through each of the three sampling sites. Each site should be surveyed sequentially to provide a period between samples for fish to return to their normal behavior and to provide any marked fish with an opportunity to mix with the unmarked population.

If fish population estimates are chosen as the primary monitoring tool, activities undertaken during each survey would vary over the sampling interval. During the first two surveys, all mountain whitefish and Arctic grayling $250 mm fork length would be tagged with Floy anchor tags. During the last survey at each site, no additional marks would be applied and surveys techniques would be adjusted to maximize the number of fish examined for marks.

If the primary monitoring strategy involves collection of biological data and indexing fish abundance using catch rate, then a slightly different sampling protocol would be employed. Attempts would be made to collect scale samples and body measurements (length and weight) from a random sample of the catch of each target species and sampling effort would be standardized across all surveys.

Prior to initiating the program, specific sampling and enumeration objectives should be clearly defined for target and non-target species. This approach will ensure that project managers can make an accurate estimate of the amount of sampling effort required to achieve the goals of the program.

The above sampling design will provide a balanced and robust approach for monitoring the fish community in the Peace River. Information will be collected from all species encountered while sampling efforts will focus on the target species. The surveys will be distributed over a significant portion of the river, but will focus on times and areas where the sampling methods are most effective at capturing the

target species. The initiation of the surveys will be responsive to annual variation in water temperature and flow, but the survey interval will be sufficiently long to ensure that the results are not compromised for short-term anomalies. The combination of the systematic application of electrofishing effort with mark-recapture will provide meaningful catch rate data for all species and a means of assessing the within and between year variability in the efficiency of the survey methods.

The overall goal for the next two years should be to implement and test the above sampling design. If successful, the above approach could be repeated at 3-5 year intervals to monitor long-terms changes in the fish community or more frequently to assess specific changes resulting from alternative operating regimes.

5.2 MONITORING TOOLS AND EFFORT

5.2.1 Biological Characteristics

Age-cohort analysis, body condition, and growth rate are all suitable parameters to monitor target fish populations. It is recommended that a representative sample of at least 300 fish be analyzed, which can be obtained by measuring and collecting ageing structures from all captured fish and then generating a random sample from this collection. Results from Phase I indicates that a sufficient sample can be obtained from mountain whitefish, but low numbers of Arctic grayling may be a problem.

5.2.3 Abundance Indices

It is recommended that index sampling within the monitoring sites be stratified by habitat to account for differences in catchability and sampling should focus on the SFC category (habitat with physical cover). This category is widely distributed in the reach that has been proposed for monitoring purposes (Reach 2 or Phase I zones 2 and 3). From 15 to 20 samples should be collected at each site to ensure that the power of the monitoring program is sufficient to detect change. Assuming that at least five sections can be sampled each day, each site would require from 3 to 4 days to survey. It is recommended that a site inspection be completed before initiation of the monitoring program to establish fixed sampling sections in the appropriate habitat.

5.2.4 Population Estimates

Population estimates will be computed following Gazey and Staley (1986) as presented in this report. A stratified design will be applied if marks move between sites. This can be accomplished by extending the Bayesian mark-recapture model for spatial stratification by assuming that all marked fish released in the same time period and site have the same recapture probability within a site and is proportional to the sampling intensity within that site.

Based on the precision analysis using the 1989 and 1990 data, a conservative estimate of approximately 100 hours of boat electrofishing effort will be required to stabilize the precision. The sampling should be equally disbursed over the sites with the last sampling sequence receiving more effort. The suggested distribution of effort is presented in Table 5.1

Table 5.1 Proposed distribution of effort (hours of boat electrofishing).

Site	Sequence			Total
	1	2	3	
1	10	10	13	33
2	10	10	13	33
3	10	10	13	33
Total	**30**	**30**	**39**	**99**

The sampling plan in Table 5.1 should result in approximately a 95% precision of ±50% for Arctic grayling and ±25% for mountain whitefish in each of the sites.

This estimate of sampling effort should be viewed as preliminary due to differences in sampling protocols used during the 1989-1990 studies and the proposed monitoring program. The previous investigation encompassed 151 km of river and a portion of the sampled area contained relatively low numbers of the target species (i.e., Reach 1 and 4). The proposed monitoring program will focus its effort within a shorter section of river (approximately 50 km) where the target species will be encountered more frequently. As such, tagging and recapture rates should be higher per unit effort of sampling, thereby reducing the amount of effort needed to detect change.

Assuming that 100 h of effort will be required to obtain the required precision, 45 field days of sampling will be needed to complete the program. This assumes that approximately 2.2 h of boat electrofishing effort is expended per day. A preliminary estimate to complete 45 field days of sampling is $75,000. This value does not include office related expenditures.

6.0 LITERATURE CITED

Burrows, J. T. Euchner, and D. Baccante. 1999. Bull trout movement patterns: Halfway and Peace rivers. *In* Ecology and Management of Northwest Salmonids: Bull Trout II conference. Canmore, Alberta.

Cone, 1989. The need to reconsider the use of condition indices in fishery science. Transactions of the American Fisheries Society 118: 510 - 514.

Cummins, K.W. 1962. An evaluation of some techniques for the collection and analysis of benthic samples with special emphasis on lotic waters. American Midland Naturalist 67: 477-504.

Environment Canada and Department of Fisheries and Oceans. 1995. Further guidance for the invertebrate community survey for aquatic environmental effects monitoring related to the Fisheries Act requirements. EEM 2. 206 p.

Gazey, W.J. 1994. Population size estimation for sparse data. Biometrics 50: 301-303.

Gazey, W.J. and M.J. Staley. 1986. Population estimation from mark-recapture experiments using a sequential Bayes algorithm. Ecology 67:941-951.

Hildebrand, L. 1990. Investigations of fish and habitat resources of the Peace River in Alberta - Volume I. Prepared for Alberta Environment, Planning Division, and Alberta Fish and Wildlife Division by R.L. & L. Environmental Services Ltd., Edmonton, Alberta. 148 p. + Appendices.

Mackay, W.C., G.R. Ash, and H.J. Norris. (editors). 1990. Fish ageing methods for Alberta. R.L. & L. Environmental Services Ltd. in association with Alberta Fish and Wildlife Division and University of Alberta, Edmonton. 113 p.

McInerny, M.C., and T. K. Cross. 2000. Effects of sampling time, intraspecific density, and environmental variables on electrofishing catch per effort of largemouth bass in Minnesota Lakes. North American Journal of Fisheries Management 20:328-336.

Pattenden, R., C. McLeod, G. Ash, and K. English. 1990. Peace River Site C Hydro Development Pre-construction Fisheries Studies. Fish movements and population status. 1989 studies. Report prepared for BC Hydro by R.L. & L. Environmental Services Ltd., Edmonton, Alberta, in association with K. English of LGL Ltd., Sidney, B.C. 97 p. + Appendices.

Pattenden, R., C. McLeod, G. Ash, and K. English. 1991. Peace River Site C Hydro Development Pre-construction Fisheries Studies. Fish movements and population status. 1990 studies. Report prepared for BC Hydro by R.L. & L. Environmental Services Ltd., Edmonton, Alberta, in association with K. English of LGL Ltd., Sidney, B.C. 121 p. + Appendices.

Pattenden, R. 1992. Peace River Site C Hydro Development, Pre-construction fisheries studies. Data Summary Report 1991. Report prepared for BC Hydro by R.L. & L. Environmental Services Ltd. 23 p. + 1 Appendix.

Pugh, L.L., and H.L. Schramm Jr. 1998. Comparison of electrofishing and hoopnetting in lotic habitats of the Lower Mississippi River. North American Journal of Fisheries Management 18:649-656.

R.L.&L. Environmental Services Ltd. 1992. Assessment of fisheries impacts from flow regulation on the Peace River. Draft report prepared for BC Hydro. 30 p.

R.L.&L. Environmental Services Ltd. 1998. Inventory of fish and fish habitat in the Bow River between Ghost Dam and Bearspaw Reservoir. RL&L Report No. 578F: 68 p. + 5 Appendices.

R.L.&L. Environmental Services Ltd. 2000. Dunvegan Hydroelectric Project - Fish and Habitat Inventory Comprehensive Report. Prepared for Glacier Power Ltd. RL&L Report No. 809F: 123 p. + 4 Appendices and Plates.

R.L.&L. Environmental Services Ltd. 2001. Peace River fish habitat utilization study. Prepared for BC Hydro - Environmental Services, Burnaby, BC. RL&L Report No. 725F: 72 p. + Appendices.

Sammons, S.M., and P.W. Bettoli. 1999. Spatial and temporal variation in electrofishing catch rates of three species of black bass (*Micropterus* spp.) from Normandy Reservoir, Tennessee. North American Journal of Fisheries Management 19:454-461.

Seber, G.A.F. 1982. The Estimation of Animal Abundance and related parameters. Second edition. Edward Arnold, London.

Slaney, T.L., R.J. Fielden, and J.A. Bruce. 1991a. Peace River Site C Development: Fisheries Habitat and Tributary Surveys. Year 1. Report prepared of BC Hydro by Aquatic Resources Ltd. 104 p. + Appendices.

Slaney, T.L., R.J. Fielden, and J.A. Bruce. 1991b. Peace River Site C Development: Fisheries Habitat and Tributary Surveys. Year 2. Report prepared of BC Hydro by Aquatic Resources Ltd. 81 p. + Appendices.

Sokal, R.R., and F.J. Rohlf. 1981. Biometry. W.H. Freeman and Co., San Francisco. 859 p.

APPENDIX A
SAMPLE SITES

Appendix A Table A1. Sampling sites and UTM locations (NAD 27; Zone 10V) in the study area during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Waterbody	Method	Site Label	Site Kilometre	Site Position	Easting	Northing
Zone 1							
	Beatton River	Beach Seine	BS0102	26.4	Right Downstream Bank	663065	6220421
	Kiskatinaw River	Beach Seine	BS0103	12.3	Right Downstream Bank	676319	6219756
	Peace River	Beach Seine	BS0110	30.6	Right Downstream Bank	659153	6220306
	Peace River	Beach Seine	BS0105	16.4	Right Downstream Bank	672506	6220013
	Peace River	Beach Seine	BS0106	18.3	Left Downstream Bank	671008	6221201
	Peace River	Beach Seine	BS0107	22.9	Right Downstream Bank	666647	6219700
	Peace River	Beach Seine	BS0109	23.7	Right Downstream Bank	666155	6220227
	Peace River	Beach Seine	BS0104	12.4	Right Downstream Bank	676552	6219672
	Peace River	Beach Seine	BS0101	26.4	Left Downstream Bank	663558	6219844
	Peace River	Beach Seine	BS0108	23.7	Right Downstream Bank	665956	6220183
	Peace River	Boat Electrofish	ES0108	22.0 to 20.0	Right Downstream Bank	667341	6220223
	Peace River	Boat Electrofish	ES0113	11.0 to 9.0	Left Downstream Bank	677117	6220855
	Peace River	Boat Electrofish	ES0111	15.1 to 13.0	Right Downstream Bank	673514	6219886
	Peace River	Boat Electrofish	ES0114	8.0 to 6.0	Right Downstream Bank	680147	6221093
	Peace River	Boat Electrofish	ES0101	31.2 to 29.7	Left Downstream Bank	658851	6221003
	Peace River	Boat Electrofish	ES0112	12.5 to 12.0	Right Downstream Bank	676379	6219802
	Peace River	Boat Electrofish	ES0102	29.2 to 27.3	Right Downstream Bank	660368	6220034
	Peace River	Boat Electrofish	ES0103	28.4 to 26.5	Left Downstream Bank	661147	6220434
	Peace River	Boat Electrofish	ES0107	25.0 to 23.0	Right Downstream Bank	664497	6219865
	Peace River	Boat Electrofish	ES0106	25.0 to 23.0	Left Downstream Bank	664476	6220392
	Peace River	Boat Electrofish	ES0105	26.4 to 25.8	Left Downstream Bank	663086	6220160
	Peace River	Boat Electrofish	ES0104	26.4 to 26.4	Both Banks	663065	6220287
	Peace River	Boat Electrofish	ES0109	19.8 to 17.5	Right Downstream Bank	669764	6220729
	Peace River	Boat Electrofish	ES0110	17.0 to 14.5	Left Downstream Bank	672313	6221045
	Peace River	Water Level Recorder	WL0101	24.4	Left Downstream Bank	665189	6220273
Zone 2							
	Moberly River	Backpack Electrofish	EF0203	64.5	Right Downstream Bank	628955	6229995
	Moberly River	Beach Seine	BS0210	64.5	Left Downstream Bank	629258	6230389
	Peace River	Backpack Electrofish	EF0204	57.2	Right Downstream Bank	635912	6230146
	Peace River	Backpack Electrofish	EF0202	65.6	Left Downstream Bank	628625	6230934
	Peace River	Backpack Electrofish	EF0201	70.0	Right Downstream Bank	624823	6233276
	Peace River	Beach Seine	BS0201	50.4	Right Downstream Bank	639436	6226227
	Peace River	Beach Seine	BS0209	53.6	Right Downstream Bank	637903	6227181

Appendix A Table A1. Sampling sites and UTM locations (NAD 27; Zone 10V) in the study area during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Waterbody	Method	Site Label	Site Kilometre	Site Position	Easting	Northing
Zone 2							
	Peace River	Beach Seine	BS0203	70.0	Right Downstream Bank	625106	6233193
	Peace River	Beach Seine	BS0204	69.3	Right Downstream Bank	625676	6233043
	Peace River	Beach Seine	BS0208	57.2	Right Downstream Bank	636341	6229953
	Peace River	Beach Seine	BS0207	61.2	Right Downstream Bank	632654	6228350
	Peace River	Beach Seine	BS0202	47.7	Right Downstream Bank	642839	6224070
	Peace River	Beach Seine	BS0205	64.7	Right Downstream Bank	628680	6230236
	Peace River	Beach Seine	BS0206	64.6	Right Downstream Bank	628940	6230018
	Peace River	Boat Electrofish	ES0205	62.0 to 60.5	Left Downstream Bank	631567	6229569
	Peace River	Boat Electrofish	ES0210	55.6 to 53.4	Right Downstream Bank	637066	6229174
	Peace River	Boat Electrofish	ES0209	57.0 to 55.6	Left Downstream Bank	636246	6230420
	Peace River	Boat Electrofish	ES0217	58.0 to 57.0	Right Downstream Bank	635274	6229964
	Peace River	Boat Electrofish	ES0208	59.0 to 58.2	Right Downstream Bank	634454	6229630
	Peace River	Boat Electrofish	ES0213	51.0 to 50.0	Left Downstream Bank	640013	6226318
	Peace River	Boat Electrofish	ES0206	60.5 to 59.6	Right Downstream Bank	633512	6229600
	Peace River	Boat Electrofish	ES0204	64.0 to 62.0	Right Downstream Bank	629350	6229630
	Peace River	Boat Electrofish	ES0203	64.8 to 64.3	Right Downstream Bank	628772	6230238
	Peace River	Boat Electrofish	ES0202	68.0 to 66.0	Left Downstream Bank	626980	6233033
	Peace River	Boat Electrofish	ES0212	53.0 to 51.4	Right Downstream Bank	638191	6226896
	Peace River	Boat Electrofish	ES0216	69.2 to 68.0	Right Downstream Bank	625643	6233245
	Peace River	Boat Electrofish	ES0201	70.0 to 69.2	Right Downstream Bank	624884	6233428
	Peace River	Boat Electrofish	ES0207	61.0 to 59.6	Both Banks	632843	6228658
	Peace River	Boat Electrofish	ES0211	54.0 to 53.3	Both Banks	637279	6227686
	Peace River	Boat Electrofish	ES0215	48.0 to 47.0	Right Downstream Bank	642505	6224222
	Peace River	Boat Electrofish	ES0214	50.0 to 48.0	Right Downstream Bank	640651	6225650
	Peace River	Gill Net	GN0201	53.2	Back Channel	637370	6228111
	Peace River	Water Level Recorder	WL0201	53.2	Right Downstream Bank	638163	6226799
Zone 3							
	Cache Creek	Stream Survey	EF0302	87.2	Both Banks	609724	6236675
	Halfway River	Beach Seine	BS0301	104.0	Left Downstream Bank	596446	6230967
	Peace River	Backpack Electrofish	EF0301	107.1	Right Downstream Bank	593803	6229205
	Peace River	Beach Seine	BS0309	100.8	Right Downstream Bank	599308	6232867
	Peace River	Beach Seine	BS0302	106.9	Left Downstream Bank	592648	6227687
	Peace River	Beach Seine	BS0304	99.0	Right Downstream Bank	600368	6232640

Appendix A Table A1. Sampling sites and UTM locations (NAD 27; Zone 10V) in the study area during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Waterbody	Method	Site Label	Site Kilometre	Site Position	Easting	Northing
Zone 3							
	Peace River	Beach Seine	BS0308	94.7	Right Downstream Bank	603525	6233063
	Peace River	Beach Seine	BS0310	103.4	Left Downstream Bank	597335	6230561
	Peace River	Beach Seine	BS0311	87.2	Left Downstream Bank	609845	6237165
	Peace River	Beach Seine	BS0307	94.7	Right Downstream Bank	603814	6232896
	Peace River	Boat Electrofish	ES0308	106.0 to 106.0	Both Banks	594806	6229387
	Peace River	Boat Electrofish	ES0309	102.0 to 101.0	Left Downstream Bank	598573	6232698
	Peace River	Boat Electrofish	ES0310	99.0 to 97.0	Left Downstream Bank	600396	6233154
	Peace River	Boat Electrofish	ES0301	98.0 to 96.0	Right Downstream Bank	600973	6232881
	Peace River	Boat Electrofish	ES0302	95.0 to 93.0	Left Downstream Bank	604224	6233458
	Peace River	Boat Electrofish	ES0303	93.0 to 91.0	Right Downstream Bank	605379	6233306
	Peace River	Boat Electrofish	ES0304	91.4 to 90.0	Right Downstream Bank	607019	6234035
	Peace River	Boat Electrofish	ES0305	90.0 to 88.0	Right Downstream Bank	607931	6234856
	Peace River	Boat Electrofish	ES0313	87.3 to 87.0	Left Downstream Bank	609754	6237104
	Peace River	Boat Electrofish	ES0311	87.0 to 85.5	Left Downstream Bank	610179	6237316
	Peace River	Boat Electrofish	ES0312	84.0 to 82.0	Right Downstream Bank	612701	6236192
	Peace River	Boat Electrofish	ES0306	108.0 to 106.0	Right Downstream Bank	593682	6228263
	Peace River	Boat Electrofish	ES0307	108.0 to 107.0	Left Downstream Bank	593621	6228688
	Peace River	Gill Net	GN0301	107	Back Channel	594168	6229205
	Peace River	Gill Net	GN0302	99.0	Back Channel	599910	6233671
	Peace River	Water Level Recorder	WL0301	98.5	Right Downstream Bank	600737	6232625
Zone 4							
	Farrell Creek	Stream Survey	EF0403	128.9	Both Banks	576364	6219209
	Lynx Creek	Stream Survey	EF0402	136.6	Both Banks	572476	6213983
	Maurice Creek	Stream Survey	EF0401	143.1	Both Banks	567949	6209244
	Peace River	Beach Seine	BS0407	131.2	Left Downstream Bank	574224	6218366
	Peace River	Beach Seine	BS0401	143.1	Right Downstream Bank	568131	6209305
	Peace River	Beach Seine	BS0402	136.5	Left Downstream Bank	572384	6214166
	Peace River	Beach Seine	BS0404	128.7	Left Downstream Bank	576547	6219300
	Peace River	Beach Seine	BS0405	126.1	Right Downstream Bank	579861	6219259
	Peace River	Beach Seine	BS0406	128.7	Left Downstream Bank	576683	6219078
	Peace River	Beach Seine	BS0410	135.2	Right Downstream Bank	573567	6215089
	Peace River	Beach Seine	BS0409	132.6	Right Downstream Bank	574107	6217191
	Peace River	Boat Electrofish	ES0402	143.1 to 142.9	Right Downstream Bank	568070	6209214

Appendix A Table A1. Sampling sites and UTM locations (NAD 27; Zone 10V) in the study area during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Waterbody	Method	Site Label	Site Kilometre	Site Position	Easting	Northing
Zone 4							
	Peace River	Boat Electrofish	ES0403	142.0 to 141.0	Left Downstream Bank	568739	6210338
	Peace River	Boat Electrofish	ES0404	140 to 139.0	Right Downstream Bank	570136	6211735
	Peace River	Boat Electrofish	ES0405	139.0 to 137.0	Left Downstream Bank	570531	6212312
	Peace River	Boat Electrofish	ES0406	136.5 to 136.3	Left Downstream Bank	572506	6214196
	Peace River	Boat Electrofish	ES0407	135.0 to 134.0	Right Downstream Bank	573600	6215259
	Peace River	Boat Electrofish	ES0408	133.0 to 132.0	Right Downstream Bank	573873	6217204
	Peace River	Boat Electrofish	ES0410	128.0 to 127.0	Right Downstream Bank	577246	6218905
	Peace River	Boat Electrofish	ES0411	126.7 to 126.4	Left Downstream Bank	578461	6220121
	Peace River	Boat Electrofish	ES0412	125.0 to 124.0	Right Downstream Bank	579646	6219452
	Peace River	Boat Electrofish	ES0413	123.0 to 122.0	Right Downstream Bank	581529	6219665
	Peace River	Boat Electrofish	ES0414	121.0 to 120.3	Right Downstream Bank	583474	6220607
	Peace River	Boat Electrofish	ES0409	128.7 to 128.0	Right Downstream Bank	577246	6219148
	Peace River	Boat Electrofish	ES0401	145.2 to 144.3	Right Downstream Bank	566855	6207725
	Peace River	Water Level Recorder	WL0401	137.6	Left Downstream Bank	571543	6213505

APPENDIX B
SAMPLING CONDITIONS

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date and Time	Effort (m)	(s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 1																					
	ES0101																				
		26/08/2001 10:15:00 AM	1300	627	SFC	E2	Run	Sand	LOD	3	11.5	55	2562	2	170	3	3	60	354	1	1
		21/10/2001 11:30:00 AM	1500	526	SFC	E2	Run	Sand	LOD	3	6.0	42	3190	2	200	3	4	60	354	1	1
	ES0102																				
		26/08/2001 11:00:00 AM	2100	1602	SLC	A2	Run	Cobble	Bank	3	11.5	55	2565	2	170	2	3	60	354	1	1
		21/10/2001 12:00:00 PM	1800	959	SLC	A2	Run	Cobble	Bank	3	6.0	42	3208	2	200	3	4	60	354	1	1
	ES0103																				
		26/08/2001 11:45:00 AM	1900	921	SLN	A3	Flat	Cobble	None	1	11.5	55	2569	4	170	2	3	60	354	1	1
		21/10/2001 12:30:00 PM	1500	855	SLN	A3	Flat	Cobble	None	1	6.0	42	3215	4	200	2	4	60	354	1	1
	ES0104																				
		26/08/2001 12:30:00 PM	400	880	SLN	A3	Flat	Cobble	None	1	17.0	10	2567	4	200	1	3	60	354	1	1
		21/10/2001 1:00:00 PM	400	1080	SLN	A3	Flat	Cobble	None	1	2.0	45	3222	4	390	2	4	60	354	1	1
	ES0105																				
		26/08/2001 1:30:00 PM	700	471	CON	TCD3	Confluence	Sand	None	4	12.5	10	2558	3	200	1	3	60	354	1	1
		21/10/2001 2:30:00 PM	700	726	CON	TCD3	Confluence	Sand	None	4	3.0	45	3235	3	39	2	4	60	354	1	1
	ES0106																				
		26/08/2001 2:30:00 PM	200	1182	SFC	A2	Run	Cobble	Rock; Bank	2	15.0	10	2540	3	200	2	3	60	354	1	1
		21/10/2001 3:00:00 PM	1300	585	SFC	A2	Run	Cobble	Rock; Bank	2	6.0	45	3235	2	190	2	4	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 1																				
	ES0107																			
	26/08/2001 3:30:00 PM	2000	1403	SFN	A3	Run	Cobble	None	1	13.0	80	2519	3	180	2	3	60	354	1	1
	21/10/2001 3:30:00 PM	600	303	SFN	A3	Run	Cobble	None	1	6.0	45	3231	2	190	2	4	60	354	1	1
	ES0108																			
	26/08/2001 4:15:00 PM	200	1122	SLC	A1	Run	Boulder	Rock	3	13.0	80	2491	3	180	2	3	60	354	1	1
	21/10/2001 4:15:00 PM	2000	1267	SLC	A1	Run	Boulder	Rock	3	6.0	45	3225	3	190	2	4	60	354	1	1
	ES0109																			
	26/08/2001 5:00:00 PM	2200	1398	SFN	A3	Run	Cobble	Rock	1	13.0	80	2465	3	180	1	3	60	354	1	1
	22/10/2001 11:30:00 AM	1200	1600	SFN	A3	Run	Cobble	Rock	1	6.0	85	3184	3	190	3	3.5	60	354	1	1
	ES0110																			
	26/08/2001 5:45:00 PM	2500	1159	SFN	A3	Run	Cobble	None	2	13.5	20	2429	3	180	1	3	60	354	1	1
	22/10/2001 12:00:00 PM	2000	723	SFN	A3	Run	Cobble	None	2	6.0	85	3185	3	190	3	3.5	60	354	1	1
	ES0111																			
	27/08/2001 10:30:00 AM	2000	1291	SFC	A2	Run	Cobble	Bank	3	12.5	55	2221	3	210	3	3	60	354	1	1
	22/10/2001 1:30:00 PM	1400	1001	SFC	A2	Run	Cobble	Bank	3	6.0	85	3176	3	190	3	3.5	60	354	1	1
	ES0112																			
	27/08/2001 11:15:00 AM	500	350	CON	TCD3	Confluence	Sand	None	4	16.0	10	2259	4	450	2	3	60	354	1	1
	22/10/2001 2:00:00 PM	500	461	CON	TCD3	Confluence	Sand	None	4	5.0	85	3171	3	230	3	3.5	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 1																				
	ES0113																			
	27/08/2001 11:45:00 AM	2000	1329	SFN	A3	Run	Cobble	None	2	3.0	10	2285	3	200	2	3	60	354	1	1
	22/10/2001 2:30:00 PM	2000	1076	SFN	A3	Run	Cobble	None	2	6.0	85	3168	3	190	3	3.5	60	354	1	1
	ES0114																			
	27/08/2001 1:30:00 PM	2000	1638	SFC	A2	Run	Cobble	LOD; Bank	2	13.0	55	2370	3	200	2	3	60	354	1	1
	22/10/2001 3:30:00 PM	1800	1122	SFC	A2	Run	Cobble	LOD; Bank	2	6.0	85	3162	3	190	3	3.5	60	354	1	1
Zone 2																				
	ES0201																			
	23/08/2001 11:30:00 AM	800	527	SLN	D3	Flat	Sand	None	2	11.5	110	1951	4	180	2	3	60	354	1	1
	18/10/2001 11:45:00 AM	800	725	SLN	D3	Flat	Sand	None	2	8.0	100	2961	4	160	2	3.2	60	354	1	1
	ES0202																			
	23/08/2001 12:15:00 PM	2000	1318	SLN	D3	Flat	Sand	Bank	4	11.5	110	1912	3	180	2	3	60	354	1	1
	18/10/2001 2:00:00 PM	1800	841	SLN	E2	Flat	Sand	Bank	4	8.0	100	2968	3	160	1	3.2	60	354	1	1
	ES0203																			
	23/08/2001 1:30:00 PM	500	863	CON	TCD3	Confluence	Sand	None	4	11.5	65	1844	4	190	3	3	60	354	1	1
	18/10/2001 2:40:00 PM	500	621	CON	TCD3	Confluence	Sand	None	4	5.0	100	2970	3	180	1	3.2	60	354	1	1
	ES0204																			
	23/08/2001 2:45:00 PM	2000	1158	SFC	A2	Run	Cobble	Rock; LOD; Bank	2	12.0	65	1794	3	190	3	3	60	354	1	1
	18/10/2001 3:15:00 PM	1000	591	SFC	A2	Run	Cobble	Rock; LOD; Bank	2	8.0	100	2979	2	180	2	3.2	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 2																				
	ES0205																			
	23/08/2001 3:30:00 PM	1500	805	SLN	A2	Flat	Cobble	Bank	4	12.0	110	1772	4	180	3	3	60	354	1	1
	18/10/2001 4:00:00 PM	1300	830	SLN	A2	Flat	Cobble	Bank	4	8.0	85	2991	4	160	1	3.2	60	354	1	1
	ES0206																			
	23/08/2001 4:30:00 PM	900	845	SFN	A3	Run	Cobble	None	1	12.0	75	1768	3	180	2	3	60	354	1	1
	18/10/2001 4:30:00 PM	500	334	SFN	A3	Run	Cobble	None	1	7.0	85	3002	2	160	1	3.2	60	354	1	1
	ES0207																			
	23/08/2001 5:15:00 PM	1400	1637	BAC	D3	Snye	Silt	None	3	15.0	75	1796	4	250	3	3	60	354	1	1
	19/10/2001 11:30:00 AM	1400	1375	BAC	D3	Snye	Sand	None	3	4.0	75	3064	4	160	2	4.5	60	354	1	1
	ES0208																			
	24/08/2001 10:15:00 AM	800	627	SLC	A1	Run	Cobble	Rock; Bank	3	11.0	65	2257	2	170	1	3	60	354	1	1
	19/10/2001 12:15:00 PM	800	506	SLC	A1	Run	Cobble	Rock; Bank	3	7.5	75	3040	1	160	2	3	60	354	1	1
	ES0209																			
	24/08/2001 11:15:00 AM	1400	1184	SLN	E3	Flat	Sand	Bank	4	11.0	65	2159	4	170	1	3	60	354	1	1
	19/10/2001 2:15:00 PM	600	915	SLN	E2	Flat	Sand	Bank	4	7.5	80	2998	3	160	2	3	60	354	1	1
	ES0210																			
	24/08/2001 12:00:00 PM	2200	1286	SFN	A3	Run	Cobble	None	1	11.0	65	2082	3	170	1	3	60	354	1	1
	19/10/2001 3:00:00 PM	1000	385	SFN	A3	Run	Cobble	None	1	7.5	80	2988	3	160	1	3	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 2																				
	ES0211																			
	24/08/2001 1:30:00 PM	700	1683	BAC	D3	Snye	Sand	None	4	13.0	65	1939	4	170	1	3	60	354	1	1
	19/10/2001 3:30:00 PM	700	1033	BAC	D3	Snye	Sand	None	4	6.5	95	2985	4	150	1	3	60	354	1	1
	ES0212																			
	24/08/2001 2:00:00 PM	1600	858	SFC	A2	Run	Cobble	Bank	2	12.0	65	1903	4	170	1	3	60	354	1	1
	19/10/2001 4:00:00 PM	1400	631	SFC	A2	Run	Cobble	Bank	2	8.0	95	2986	3	160	2	3	60	354	1	1
	ES0213																			
	24/08/2001 2:30:00 PM	1000	856	SLC	A2	Run	Boulder	Rock	3	12.5	65	1870	1	170	1	3	60	354	1	1
	19/10/2001 4:30:00 PM	800	519	SLC	A2	Run	Boulder	Rock	3	8.0	80	2990	1	160	2	3	60	354	1	1
	ES0214																			
	24/08/2001 3:15:00 PM	2000	1007	SLN	A3	Shoal	Cobble	None	1	13.0	60	1834	4	170	1	3	60	354	1	1
	19/10/2001 4:45:00 PM	1200	630	SFN	A3	Run	Cobble	None	1	8.0	80	2994	3	160	2	3	60	354	1	1
	ES0215																			
	24/08/2001 4:00:00 PM	1000	647	CON	TCD3	Confluence	Sand	None	4	14.5	60	1812	4	240	1	3	60	354	1	1
	19/10/2001 5:00:00 PM	500	659	CON	TCD3	Confluence	Sand	None	4	4.0	80	2999	3	230	2	3	60	354	1	1
	ES0216																			
	23/08/2001 11:40:00 AM	1200	529	SFC	A2	Run	Cobble	Bank	2	12.0	110	1925	3	180	2	3	60	354	1	1
	18/10/2001 12:30:00 PM	1200	767	SFC	A2	Run	Cobble	Bank	2	8.0	85	2961	3	160	2	3.2	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 2																				
	ES0217																			
	24/08/2001 10:00:00 AM	1000	627	SFN	A3	Shoal	Cobble	Rock	1	11.5	65	2279	3	170	1	3	60	354	1	1
	19/10/2001 1:00:00 PM	1000	395	SFN	A3	Run	Cobble	Rock	1	7.5	80	3019	3	160	2	3	60	354	1	1
Zone 3																				
	ES0301																			
	20/08/2001 1:00:00 PM	2000	1440	SFC	A1	Run	Boulder	Rock; Bank	2	12.0	145	1143	3	170	2	2.5	60	354	1	1
	15/10/2001 2:30:00 PM	900	492	SFC	A1	Run	Boulder	Rock; Bank	2	7.5	90	2453	2	210	3	3	60	354	1	1
	ES0302																			
	20/08/2001 2:00:00 PM	2000	940	SFN	A3	Run	Cobble	None	1	12.0	45	1139	3	310	1	2.5	60	354	1	1
	15/10/2001 3:15:00 PM	400	250	SFN	A3	Run	Cobble	None	1	7.5	95	2462	2	210	3	3	60	354	1	1
	ES0303																			
	20/08/2001 3:00:00 PM	2000	1874	SFC	A2	Run	Cobble	LOD; Bank	3	12.5	145	1136	3	140	1	2.5	60	354	1	1
	15/10/2001 4:15:00 PM	1300	872	SFC	A2	Run	Cobble	LOD; Bank	3	7.5	95	2471	3	210	3	3	60	354	1	1
	ES0304																			
	20/08/2001 4:00:00 PM	1000	951	SFC	A1	Run	Cobble	Rock; LOD; Bank	2	12.5	120	1137	2	140	1	2.5	60	354	1	1
	16/10/2001 11:30:00 AM	1400	788	SFC	A1	Run	Cobble	Rock; Bank	2	8.0	100	2403	2	170	2	3	60	354	1	1
	ES0305																			
	20/08/2001 5:00:00 PM	2000	1177	SFN	A3	Run	Cobble	None	2	12.0	85	1142	3	160	2	2.5	60	354	1	1
	16/10/2001 12:00:00 PM	300	496	SFN	A3	Run	Cobble	None	2	8.0	100	2455	3	170	2	3	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 3																				
	ES0306																			
	21/08/2001 10:30:00 AM	2000	1790	SFC	A2	Flat	Cobble	Rock; Bank	3	10.5	200	1138	4	140	3	2.5	60	354	1	1
	15/10/2001 10:30:00 AM	1000	568	SFC	A2	Run	Cobble	Rock; Bank	3	8.0	123	2348	2	170	3	3	60	354	1	1
	ES0307																			
	21/08/2001 11:45:00 AM	1500	927	SFN	A3	Run	Cobble	None	1	10.5	200	1139	3	140	3	2.5	60	354	1	1
	15/10/2001 11:30:00 AM	1000	686	SFN	A3	Run	Cobble	None	1	8.0	123	2373	3	170	3	3	60	354	1	1
	ES0308																			
	21/08/2001 1:00:00 PM	600	694	BAC	D3	Snye	Sand	None	1	12.0	200	1137	4	140	3	2.5	60	354	1	1
	15/10/2001 12:30:00 PM	600	639	BAC	D3	Snye	Sand	None	1	8.0	123	2403	4	170	3	3.2	60	354	1	1
	ES0309																			
	21/08/2001 2:15:00 PM	1000	569	SFN	A3	Run	Cobble	None	1	10.5	65	1139	3	210	3	2.5	60	354	1	1
	15/10/2001 1:00:00 PM	800	463	SFN	A3	Run	Cobble	None	1	7.0	90	2418	2	240	3	3.2	60	354	1	1
	ES0310																			
	21/08/2001 3:00:00 PM	2000	854	SFN	A3	Run	Cobble	None	2	10.5	65	1147	3	210	3	2.5	60	354	1	1
	15/10/2001 1:45:00 PM	200	171	SFN	A3	Run	Cobble	None	2	7.5	90	2439	2	210	3	3	60	354	1	1
	ES0311																			
	21/08/2001 4:15:00 PM	1500	854	SLC	A1	Run	Boulder	Rock; Bank	3	10.5	85	1301	3	190	3	2.5	60	354	1	1
	16/10/2001 1:30:00 PM	1300	655	SLC	A1	Run	Boulder	Rock; Bank	3	8.0	100	2569	3	170	2	3	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 3																				
	ES0312																			
	21/08/2001 5:00:00 PM	2000	1397	SFC	A1	Run	Cobble	Rock; Bank	2	10.5	110	1513	2	160	3	2.5	60	354	1	1
	16/10/2001 2:30:00 PM	1500	747	SFC	A1	Run	Cobble	Rock; Bank	2	8.0	100	2603	2	160	2	3	60	354	1	1
	ES0313																			
	21/08/2001 2:00:00 PM	300	532	CON	TCD3	Confluence	Sand	None	4	12.5	85	1138	4	200	3	2.5	60	354	2	1
	16/10/2001 1:00:00 PM	300	649	CON	TCD3	Confluence	Sand	None	4	8.0	100	2539	3	170	2	3	60	354	1	1
Zone 4																				
	ES0401																			
	17/08/2001 9:30:00 AM	800	678	SFN	A3	Run	Cobble	None	1	11.5	170	750	1	210	2	2.5	60	354	1	1
	12/10/2001 11:30:00 AM	600	289	SFN	A3	Run	Cobble	None	1	9.0	95	2222	1	160	2	3.5	60	354	1	1
	ES0402																			
	17/08/2001 10:00:00 AM	200	225	CON	TCD2	Confluence	Cobble	None	4	11.5	170	750	3	210	2	2.5	60	354	1	1
	12/10/2001 12:30:00 PM	200	443	CON	TCD2	Confluence	Cobble	None	4	7.0	95	2371	3	340	2	3	60	354	1	1
	ES0403																			
	17/08/2001 10:45:00 AM	1000	725	SFC	A2	Run	Boulder	Rock; Bank	2	11.5	170	748	2	210	2	2.5	60	354	1	1
	12/10/2001 1:30:00 PM	700	406	SFC	A2	Run	Boulder	Rock; Bank	2	9.0	105	2424	2	160	2	3.5	60	354	1	1
	ES0404																			
	17/08/2001 12:00:00 PM	1000	482	SFN	A3	Run	Cobble	None	1	11.5	145	747	2	130	2	2.5	60	354	1	1
	12/10/2001 2:30:00 PM	700	336	SFN	A3	Shoal	Cobble	None	1	9.0	100	2427	2	160	2	3.5	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 4																				
	ES0405																			
	17/08/2001 1:00:00 PM	1000	690	SFC	A2	Run	Cobble	Bank	3	12.0	170	745	3	130	2	2.5	60	354	1	1
	12/10/2001 3:30:00 PM	1400	346	SFC	A2	Run	Cobble	Bank	3	9.0	100	2434	2	160	2	3.5	60	354	1	1
	ES0406																			
	17/08/2001 2:15:00 PM	200	331	CON	TCD3	Confluence	Sand	None	4	12.0	50	748	4	140	1	2.5	60	354	1	1
	12/10/2001 4:30:00 PM	200	362	CON	TCD3	Confluence	Sand	None	4	9.0	100	2375	3	160	2	3.5	60	354	1	1
	ES0407																			
	17/08/2001 3:15:00 PM	1000	518	SFC	A1	Run	Boulder	Rock; Bank	3	12.0	145	780	1	140	1	2.5	60	354	1	1
	13/10/2001 10:00:00 AM	900	377	SFC	A1	Run	Boulder	Rock; Bank	3	9.0	100	2307	1	160	2	3	60	354	1	1
	ES0408																			
	17/08/2001 4:30:00 PM	1000	548	SFC	A2	Run	Cobble	Rock; Bank	1	12.0	145	820	2	150	1	2.5	60	354	1	1
	13/10/2001 11:15:00 AM	900	349	SFC	A2	Run	Cobble	Rock; Bank	1	9.0	100	2380	2	160	2	3	60	354	1	1
	ES0409																			
	18/08/2001 12:30:00 PM	700	629	SFN	A3	Run	Cobble	None	1	11.5	180	850	3	150	2	3	60	354	1	1
	ES0410																			
	18/08/2001 1:30:00 PM	1000	824	SFN	A3	Run	Cobble	Rock	1	11.5	180	895	3	150	1	2.5	60	354	1	1
	13/10/2001 12:30:00 PM	600	489	SFN	A3	Run	Cobble	Rock	1	9.0	100	2432	3	150	2	3	60	354	1	1
	ES0411																			
	18/08/2001 2:30:00 PM	300	291	CON	TCD3	Confluence	Sand	None	4	12.0	80	1341	4	130	1	2.5	60	354	1	1
	13/10/2001 1:30:00 PM	300	417	CON	TCD3	Confluence	Sand	None	4	9.0	90	2435	3	170	2	3	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B1. Boat electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time	Effort (m)	Effort (s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Dominant Cover	Bank Slope (1-4)	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Electrofisher A	Electrofisher Hz	Electrofisher V	Skill Net (1-4)	Skill Boat (1-4)
Zone 4																				
	ES0412																			
	18/08/2001 3:15:00 PM	1000	745	SFC	A2	Run	Cobble	Bank	2	12.0	180	1462	3	150	2	2.5	60	354	1	1
	13/10/2001 2:30:00 PM	1000	729	SFC	A2	Run	Cobble	Bank	2	9.0	90	2431	3	170	2	3	60	354	1	1
	ES0413																			
	18/08/2001 4:30:00 PM	1000	1049	SFC	A2	Flat	Cobble	LOD; Bank	3	12.0	180	1514	4	150	1	2.5	60	354	1	1
	13/10/2001 3:30:00 PM	1000	600	SFC	A2	Run	Cobble	LOD; Bank	3	9.0	85	2427	3	160	2	3	60	354	1	1
	ES0414																			
	18/08/2001 5:15:00 PM	700	472	SFC	A2	Run	Cobble	Rock; Bank	2	12.0	180	1522	3	130	1	2.5	60	354	1	1
	13/10/2001 4:30:00 PM	600	535	SFC	A2	Run	Cobble	Rock; Bank	2	9.0	85	2429	2	170	1	3	60	354	1	1

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Temp. (C)	Water Clarity (cm)	Water Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 1																						
	BS0101 Peace River																					
	25/08/2001 4:30:00 PM	60	CON	TCD2	Confluence			50	50					2	17.0	15	1832	0.59	0.04	220	3	2
	23/10/2001 10:55:00 AM	30	CON	TCD2	Confluence			50	50					2	2.0	50	3180	0.75	0.00	290	3	1
	23/10/2001 10:55:00 AM	35	CON	TCD2	Confluence			50	50					2	2.0	50	3180	0.35	0.00	290	3	1
	23/10/2001 10:55:00 AM	40	CON	TCD2	Confluence			50	50					2	2.0	50	3180	0.80	0.00	290	3	1
	BS0102 Beatton River																					
	25/08/2001 4:45:00 PM	80	SLN	D2	Shoal		50	50						2	18.0	10	1834	0.24	0.00	250	3	1
	23/10/2001 10:30:00 AM	35	SLN	D2	Shoal		10	30	60					1	1.0	45	3162	0.70	0.00	310	3	1
	23/10/2001 10:30:00 AM	35	SLN	D2	Shoal		10	30	60					1	1.0	45	3162	0.35	0.00	310	3	1
	23/10/2001 10:30:00 AM	30	SLN	D2	Shoal		10	30	60					1	1.0	45	3162	0.95	0.00	310	3	1
	BS0103 Kiskatinaw River																					
	28/08/2001 2:00:00 PM	50	SLN	D2	Shoal			50	50					1	16.0	15	2491	0.44	0.00	450	2	1
	28/08/2001 2:00:00 PM	50	SLN	D2	Shoal			50	50					1	16.0	15	2491	0.50	0.00	450	2	1
	23/10/2001 11:30:00 AM	30	SFN	D2	Shoal			50	50					1	1.0	125	3196	1.10	0.00	480	3	1
	23/10/2001 11:30:00 AM	30	SLN	D2	Shoal			50	50					1	1.0	125	3196	1.10	0.00	480	3	1
	23/10/2001 11:30:00 AM	45	SLN	D2	Shoal			50	50					1	1.0	125	3196	0.60	0.00	480	3	1
	BS0104 Peace River																					
	28/08/2001 2:00:00 PM	50	CON	TCD2	Confluence			50	50					2	13.5	15	2491	0.45	0.00	390	1	1
	28/08/2001 2:30:00 PM	45	CON	TCD2	Confluence				100					2	13.5	15	2444	0.55	0.00	390	1	1
	23/10/2001 12:00:00 PM	30	CON	TCD3	Confluence			50	50					2	6.0	110	3212	0.95	0.05	240	3	2
	23/10/2001 12:00:00 PM	35	CON	TCD3	Confluence			50	50					2	6.0	110	3212	0.90	0.05	240	3	2
	23/10/2001 12:00:00 PM	25	CON	TCD2	Confluence			50	50					2	6.0	110	3212	0.75	0.10	240	3	2

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Temp. (C)	Water Clarity (cm)	Water Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 1																						
	BS0105 Peace River																					
	28/08/2001 2:45:00 PM	65	SLN	D3	Backwater	100								1	13.0	55	2420	0.32	0.06	200	2	1
	28/08/2001 2:45:00 PM	65	SLN	D3	Backwater	100								1	13.0	55	2420	0.28	0.05	200	2	1
	BS0106 Peace River																					
	28/08/2001 3:20:00 PM	50	SLN	D3	Backwater	100								1	13.0	10	2350	0.53	0.00	190	2	1
	BS0107 Peace River																					
	28/08/2001 1:45:00 PM	50	SLN	D3	Backwater	100								1	13.0	55	2514	0.44	0.00	170	2	1
	28/08/2001 1:45:00 PM	50	SLN	D3	Backwater	100								1	13.0	55	2514	0.21	0.03	170	2	1
	23/10/2001 12:30:00 PM	30	SLN	D3	Backwater	100								1	6.0	95	3228	0.60	0.00	190	3	1
	23/10/2001 12:30:00 PM	30	SLN	D3	Backwater	100								1	6.0	95	3228	0.90	0.00	190	3	1
	23/10/2001 12:30:00 PM	30	SLN	D3	Backwater	100								1	6.0	95	3228	0.90	0.00	190	3	1
	BS0108 Peace River																					
	28/08/2001 4:00:00 PM	50	SLN	D3	Backwater	100								1	13.0	55	2323	0.32	0.00	180	2	1
	23/10/2001 1:00:00 PM	30	SLN	D2	Backwater		100							2	6.0	90	3243	0.75	0.00	190	3	1
	23/10/2001 1:00:00 PM	30	SLN	D2	Backwater		100							2	6.0	90	3243	0.85	0.00	190	3	1
	23/10/2001 1:00:00 PM	30	SLN	D2	Backwater		100							2	6.0	90	3243	1.00	0.00	190	3	1
	BS0109 Peace River																					
	28/08/2001 4:20:00 PM	50	SLN	A3	Shoal		100							1	13.0	55	2330	0.22	0.00	180	2	2
	BS0110 Peace River																					
	28/08/2001 5:30:00 PM	50	SLN	A3	Shoal		100							1	13.0	85	2216	0.35	0.11	180	2	2
Zone 2																						
	BS0201 Peace River																					

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Temp. (C)	Water Clarity (cm)	Water Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 2																						
	BS0201 Peace River																					
	24/08/2001 4:30:00 PM	50	SLN	A3	Backwater		50		50					1	13.0	65	1807	0.40	0.00	170	2	1
	24/08/2001 4:30:00 PM	50	SLN	A3	Backwater		50		50					1	13.0	65	1807	0.50	0.00	170	2	1
	BS0202 Peace River																					
	24/08/2001 5:15:00 PM	50	CON	TCD2	Confluence				100					2	13.0	60	1837	0.45	0.05	250	2	2
	20/10/2001 4:45:00 PM	30	CON	TCD2	Confluence		50		50					2	3.0	60	3130	0.60	0.00	290	3	1
	20/10/2001 4:45:00 PM	30	CON	TCD2	Confluence		50		50					2	3.0	60	3130	0.90	0.00	290	3	1
	20/10/2001 4:45:00 PM	40	CON	TCD2	Confluence		50		50					2	3.0	60	3130	0.70	0.05	290	3	1
	BS0203 Peace River																					
	25/08/2001 10:30:00 AM	50	BAC	D3	Snye	80			20					2	11.0	70	2209	0.48	0.00	170	2	1
	25/08/2001 10:30:00 AM	50	BAC	D3	Snye	80			20					2	11.0	70	2209	0.55	0.00	170	2	1
	20/10/2001 10:30:00 AM	35	BAC	D3	Snye	80			20					2	7.0	95	3114	0.95	0.00	170	3	1
	20/10/2001 10:30:00 AM	45	BAC	D3	Snye	80			20					2	7.0	95	3114	1.05	0.00	170	3	1
	20/10/2001 10:30:00 AM	30	BAC	D3	Snye	80			20					2	7.0	95	3114	1.05	0.00	170	3	1
	BS0204 Peace River																					
	25/08/2001 11:00:00 AM	50	SLN	D3	Backwater	100								1	11.0	70	2163	0.50	0.00	170	2	1
	BS0205 Peace River																					
	25/08/2001 11:30:00 AM	50	CON	TCD3	Confluence	100								2	11.1	70	2113	0.68	0.00	170	2	2
	BS0206 Peace River																					
	25/08/2001 12:00:00 PM	35	CON	TCD3	Confluence	100								3	13.0	75	2067	0.40	0.00	200	2	2
	20/10/2001 12:00:00 PM	30	CON	TCD3	Confluence	100								1	2.0	10	3113	0.60	0.00	240	3	1
	20/10/2001 12:00:00 PM	30	CON	TCD3	Confluence	100								1	2.0	10	3113	0.60	0.05	240	3	1

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Temp. (C)	Water Clarity (cm)	Water Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 2																						
	BS0206 Peace River																					
	20/10/2001 12:00:00 PM	30	CON	TCD3	Confluence		100							1	2.0	10	3113	0.50	0.10	240	3	2
	BS0207 Peace River																					
	25/08/2001 1:00:00 PM	50	BAC	D3	Snye	100							40	3	14.0	45	1975	0.35	0.00	370	2	1
	20/10/2001 1:30:00 PM	30	BAC	D3	Snye	100							65	1	5.0	40	3119	0.90	0.00	180	3	3
	20/10/2001 1:30:00 PM	30	BAC	D3	Snye	100								1	5.0	40	3119	0.90	0.00	180	3	3
	20/10/2001 1:30:00 PM	30	BAC	D3	Snye	100								1	5.0	40	3119	0.40	0.00	180	3	2
	20/10/2001 1:30:00 PM	30	BAC	D3	Snye	100								1	5.0	40	3119	0.60	0.00	180	3	2
	20/10/2001 1:30:00 PM	30	BAC	D3	Snye	100								1	5.0	40	3119	0.70	0.00	180	3	2
	20/10/2001 1:30:00 PM	30	BAC	D3	Snye	100								1	5.0	40	3119	0.65	0.00	180	3	2
	BS0208 Peace River																					
	25/08/2001 1:15:00 PM	40	SLN	A3	Backwater				100					2	12.0	75	1956	0.26	0.00	170	1	1
	BS0209 Peace River																					
	25/08/2001 2:15:00 PM	70	BAC	D3	Snye	100								1	14.0	40	1893	0.46	0.00	360	2	1
	20/10/2001 2:30:00 PM	30	BAC	D3	Snye	100								1	6.0	140	3123	0.80	0.00	170	3	1
	20/10/2001 2:30:00 PM	35	BAC	D3	Snye	100								1	6.0	140	3123	0.35	0.00	170	3	1
	20/10/2001 2:30:00 PM	35	BAC	D3	Snye	100								1	6.0	140	3123	0.85	0.00	170	3	2
	20/10/2001 2:30:00 PM	30	BAC	D3	Snye	100								1	6.0	140	3123	0.90	0.00	170	3	1
	20/10/2001 2:30:00 PM	35	BAC	D3	Snye	100								1	6.0	140	3123	0.95	0.00	170	3	1
	20/10/2001 2:30:00 PM	35	BAC	D3	Snye	100								1	6.0	140	3123	0.40	0.00	170	3	1
	BS0210 Moberly River																					
	20/10/2001 11:30:00 AM	30	SLN	D2	Shoal		20	30	50					2	1.0	45	3112	0.60	0.05	230	3	2

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Temp. (C)	Water Clarity (cm)	Water Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 2																						
	BS0210 Moberly River																					
	20/10/2001 11:30:00 AM	20	SLN	D2	Shoal		20	30	50					2	1.0	45	3112	0.70	0.05	230	3	2
	20/10/2001 11:30:00 AM	35	SLN	D2	Shoal		20	30	50					2	1.0	45	3112	0.45	0.05	230	3	2
Zone 3																						
	BS0301 Halfway River																					
	22/08/2001 11:00:00 AM	60	SLN	D2	Shoal		20		80					2	12.5	35	1142	0.55	0.00	390	1	2
	17/10/2001 10:00:00 AM	35	SLN	D2	Shoal		20		80					1	2.0	95	2466	0.45	0.00	380	1	1
	17/10/2001 10:00:00 AM	30	SLN	D2	Shoal		20		80					1	2.0	95	2466	0.45	0.00	380	1	1
	17/10/2001 10:00:00 AM	30	SLN	D2	Shoal		20		80					1	2.0	95	2466	0.45	0.00	380	1	1
	BS0302 Peace River																					
	22/08/2001 11:30:00 AM	50	BAC	D3	Snye	100								2	12.0	180	1146	0.52	0.00	180	2	2
	22/08/2001 11:30:00 AM	80	BAC	D3	Snye	100								2	12.0	180	1146	0.35	0.00	180	2	1
	17/10/2001 10:30:00 AM	35	BAC	D3	Snye	100							20	1	6.0	95	2476	0.70	0.00	160	1	1
	17/10/2001 2:00:00 PM	35	BAC	D3	Snye	100								1	6.0	95	2529	0.60	0.00	160	1	1
	17/10/2001 10:30:00 AM	35	BAC	D3	Snye	100								1	6.0	95	2476	0.60	0.00	160	1	1
	17/10/2001 10:30:00 AM	35	BAC	D3	Snye	100								1	6.0	95	2476	0.60	0.00	160	1	1
	BS0304 Peace River																					
	22/08/2001 1:30:00 PM	80	BAC	D3	Snye	50			50					1	12.0	180	1412	0.50	0.00	220	2	2
	22/08/2001 1:30:00 PM	80	BAC	D3	Snye	50			50					1	12.0	180	1412	0.88	0.00	220	2	1
	22/08/2001 1:30:00 PM	80	BAC	D3	Snye	50			50				30	1	12.0	180	1412	0.73	0.00	220	2	2
	17/10/2001 2:00:00 PM	40	BAC	D3	Snye	50			50				30	1	8.0	85	2529	0.50	0.00	170	3	1
	17/10/2001 2:00:00 PM	40	BAC	D3	Snye	50			50					1	8.0	85	2529	0.60	0.00	170	3	1

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Water Temp. (C)	Clarity (cm)	Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 3																						
	BS0304 Peace River																					
	17/10/2001 2:00:00 PM	30	BAC	D3	Snye	50			50					1	8.0	85	2529	0.65	0.00	170	3	1
	17/10/2001 2:00:00 PM	30	BAC	D3	Snye	50			50					1	8.0	85	2529	0.70	0.00	170	3	2
	17/10/2001 2:00:00 PM	35	BAC	D3	Snye	50			50					1	8.0	85	2529	0.50	0.00	170	3	1
	17/10/2001 2:00:00 PM	25	BAC	D3	Snye	50			50					1	8.0	85	2529	0.40	0.00	170	3	1
	BS0307 Peace River																					
	22/08/2001 4:00:00 PM	85	SFN	A3	Shoal				100					1	12.0	160	1833	0.43	0.09	150	1	2
	BS0308 Peace River																					
	22/08/2001 4:15:00 PM	50	SFN	D3	Shoal	100								2	12.0	160	1844	0.50	0.00	150	1	1
	BS0309 Peace River																					
	22/08/2001 4:30:00 PM	75	SLN	D3	Backwater	100								1	12.0	160	1850	0.40	0.00	150	2	1
	BS0310 Peace River																					
	22/08/2001 4:50:00 PM	75	CON	TCD2	Confluence				100					3	13.0	45	1855	0.42	0.00	210	3	1
	17/10/2001 3:00:00 PM	50	CON	TCD2	Confluence				100					1	8.0	85	2499	0.50	0.21	170	3	3
	17/10/2001 3:00:00 PM	50	CON	TCD2	Confluence				100					1	8.0	85	2499	0.40	0.10	170	3	3
	17/10/2001 3:00:00 PM	50	CON	TCD2	Confluence				100					1	8.0	85	2499	0.62	0.10	170	3	1
	BS0311 Peace River																					
	17/10/2001 1:00:00 PM	25	CON	TCD3	Confluence	100								2	8.0	90	2544	0.60	0.00	170	3	2
	17/10/2001 1:00:00 PM	25	CON	TCD3	Confluence	100								2	8.0	90	2544	0.60	0.00	170	3	1
	17/10/2001 1:00:00 PM	40	CON	TCD3	Confluence	100								2	8.0	90	2544	0.40	0.00	170	3	1
Zone 4																						
	BS0401 Peace River																					

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Water Temp. (C)	Clarity (cm)	Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 4																						
	BS0401 Peace River																					
	19/08/2001 10:30:00 AM	50	CON	TCD2	Confluence				100					2	14.0	170	706	0.57	0.00	140	2	1
	14/10/2001 4:30:00 PM	25	CON	TCD2	Confluence				100					2	8.5	90	2336	0.70	0.10	170	3	2
	14/10/2001 4:30:00 PM	25	CON	TCD2	Confluence				100					2	8.5	90	2336	0.59	0.15	170	3	2
	14/10/2001 4:30:00 PM	25	CON	TCD2	Confluence				100					2	8.5	90	2336	0.52	0.11	170	3	1
	BS0402 Peace River																					
	19/08/2001 12:00:00 PM	30	CON	TCD3	Confluence	80			20					2	12.0	40	729	0.65	0.00	140	1	1
	19/08/2001 12:00:00 PM	40	CON	TCD3	Confluence	80			20					2	12.0	40	729	0.55	0.00	140	1	1
	14/10/2001 3:00:00 PM	40	CON	TCD3	Confluence	80			20					2	8.0	100	2338	0.89	0.00	170	3	1
	14/10/2001 3:00:00 PM	25	CON	TCD3	Confluence	80			20					2	8.0	100	2338	0.67	0.00	170	2	1
	BS0404 Peace River																					
	19/08/2001 1:00:00 PM	55	CON	TCD2	Confluence				100					2	14.0	80	734	0.30	0.00	150	1	2
	14/10/2001 11:00:00 AM	35	CON	TCD2	Confluence	40			60					2	7.0	105	2164	0.52	0.00	240	2	2
	14/10/2001 11:00:00 AM	40	CON	TCD2	Confluence	40			60					2	7.0	105	2164	0.20	0.00	240	2	2
	14/10/2001 11:00:00 AM	50	CON	TCD2	Confluence	40			60					2	7.0	105	2164	0.60	0.00	240	2	2
	BS0405 Peace River																					
	19/08/2001 2:30:00 PM	75	SLN	A3	Backwater	50			50					2	13.0	180	734	0.47	0.00	150	2	1
	14/10/2001 12:00:00 PM	35	SLN	A3	Backwater				100					2	8.0	100	2249	0.18	0.05	170	3	1
	14/10/2001 12:00:00 PM	35	SLN	A3	Backwater				100					2	8.0	100	2249	0.45	0.08	170	3	1
	14/10/2001 12:00:00 PM	40	SLN	A3	Backwater				100					2	8.0	100	2249	0.82	0.05	170	3	2
	BS0406 Peace River																					
	19/08/2001 3:00:00 PM	65	SLN	D3	Backwater	80			20					1	13.0	180	733	0.67	0.00	150	1	2

See Report Section 2.0 for definitions

Appendix B Table B2. Beach seine sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Water Temp. (C)	Clarity (cm)	Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 4																						
	BS0407 Peace River																					
	19/08/2001 3:30:00 PM	60	SLN	D3	Backwater	100								2	16.0	180	731	0.43	0.00	150	1	2
	19/08/2001 3:30:00 PM	30	SLN	D3	Backwater	100								2	16.0	180	731	0.47	0.00	150	1	1
	14/10/2001 1:00:00 PM	35	SLN	D3	Backwater	100								2	8.0	90	2325	0.70	0.00	170	2	1
	14/10/2001 1:00:00 PM	30	SLN	D3	Backwater	100								2	8.0	90	2325	0.76	0.00	170	2	1
	BS0409 Peace River																					
	19/08/2001 4:30:00 PM	60	SLN	A3	Backwater				100					1	13.0	160	731	0.50	0.00	160	2	4
	BS0410 Peace River																					
	19/08/2001 5:30:00 PM	30	SLN	D2	Backwater				100					2	13.0	160	732	0.50	0.15	160	1	2

See Report Section 2.0 for definitions

Appendix B Table B3. Backpack electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Temp. (C)	Clarity (cm)	Water Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Volt.	Eff. (1-4)
Zone 2																							
	EF0201 Peace River																						
	25/08/2001 10:45:00 AM	80	SFN	A3	Shoal				100					1	11.0	70	2186	0.23	0.15	170	3	400	1
	EF0202 Peace River																						
	25/08/2001 11:15:00 AM	75	SFN	A3	Shoal				100					1	12.0	70	2138	0.36	0.17	170	3	300	1
	EF0203 Moberly River																						
	25/08/2001 12:00:00 PM	65	STREAM	TCD2	Riffle				100					1	13.0	45	2067	0.17	0.24	200	1	300	2
	EF0204 Peace River																						
	25/08/2001 1:30:00 PM	60	SFN	A3	Shoal				100					1	12.0	75	1938	0.25	0.16	170	1	400	2
Zone 3																							
	EF0301 Peace River																						
	22/08/2001 12:00:00 PM	35	SFN	A3	Shoal				100					1	12.0	180	1156	0.20	0.10	220	1	300	2
	EF0302 Cache Creek																						
	22/08/2001 2:15:00 PM	140	STREAM		Riffle	10	30	20	40		10		5		15.0	35				1090		200	
	17/10/2001 11:45:00 AM	290	STREAM		Riffle	10	20	60	10		10		5		1.0	95				1040		200	
Zone 4																							
	EF0401 Maurice Creek																						
	19/08/2001 9:50:00 AM	151	STREAM		Riffle		15	5	40	40	20				13.0	80				320		300	
	14/10/2001 3:30:00 PM	235	STREAM		Riffle		15	5	40		20				3.0	95				340		300	
	EF0402 Lynx Creek																						
	19/08/2001 11:15:00 AM	135	STREAM		Riffle	20	10	10	20	40	20				12.0	5				1290		200	

See Report Section 2.0 for definitions

Appendix B Table B3. Backpack electrofisher sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label and Waterbody / Date and Time	Effort (m)	Habitat Type	Bank Habitat	Instream Habitat	Substrate Si	Sa	Gr	Co	Bo	Cover Rock	LOD	Veg	Bank Slope (1-4)	Water Temp. (C)	Clarity (cm)	Level (mm)	Depth (m)	Vel. (m/s)	Cond. (us/cm)	Light (1-4)	Volt.	Eff. (1-4)
Zone 4																							
	EF0402 Lynx Creek																						
	14/10/2001 2:30:00 PM	205	STREAM		Riffle	20	10	10	20		20				2.0	35				640		300	
	EF0403 Farrell Creek																						
	19/08/2001 1:15:00 PM	140	STREAM		Riffle	10	30	20	40		15				16.5	35				490		300	
	14/10/2001 11:00:00 AM	198	STREAM		Riffle	10	30	20	40		15				2.0	100				490		300	

See Report Section 2.0 for definitions

Appendix B Table B4. Gill net sampling conditions during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label / Date and Time		Effort (m)	(s)	Habitat Type	Bank Habitat	Instream Habitat	Dominant Substrate	Water Temp. (C)	Water Clarity (cm)	Water Level (mm)	Water Vel. (1-4)	Cond. (us/cm)	Light (1-4)	Efficiency (1-4)
Zone 2															
	GN0201														
	20/10/2001	2:30:00 PM	60	3600	BAC	D3	Snye	Silt	6.0	140	3123	4	170	3	1
Zone 3															
	GN0301														
	16/10/2001	4:40:00 PM	60	1800	BAC	D3	Snye	Silt	8.0	100	2650	4	170	2	1
	GN0302														
	17/10/2001	2:15:00 PM	60	3600	BAC	D3	Snye	Silt	8.0	102	2522	4	170	2	1

See Report Section 2.0 for definitions

APPENDIX C
LIFE HISTORY DATA

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	BS0101 25/08/2001 26.4									
		Flathead chub	72					0		
		Flathead chub	73					0		
		Flathead chub	66					0		
		Flathead chub	52					0		
		Flathead chub	72					0		
		Flathead chub	69					0		
		Flathead chub	73					0		
		Lake chub	80					0		
		Sucker spp.	32					0		
		Sucker spp.	28					0		
		Lake chub	25					4		
		Lake chub	28					4		
		Lake chub	22					4		
		Lake chub	23					4		
		Lake chub	26					4		
		Lake chub	22					4		
		Lake chub	29					4		
		Lake chub	24					4		
		Lake chub	27					4		
		Lake chub	23					4		
		Redside shiner	25					0		
		Redside shiner	24					4		
	BS0102 25/08/2001 26.4									
		Lake chub	77					0		
		Longnose sucker	88					0		
		Northern pikeminnow	82					0		
		Northern pikeminnow	87					0		
		Northern pikeminnow	82					0		
		Northern pikeminnow	72					0		
		Redside shiner	55					0		
		Spottail shiner	61					0		
		Spottail shiner	56					0		
		Trout-perch	87					0		
		Lake chub	23					4		
		Northern pikeminnow	43					4		
	BS0104 28/08/2001 12.4									
		Flathead chub	99					0		
		Flathead chub	86					0		
		Flathead chub	109					0		
		Flathead chub	80					0		
		Flathead chub	91					0		
		Lake chub	65					0		
		Northern pike	456	930		Fin Ray	4	0		
		Redside shiner	68					0		
		Redside shiner	72					0		
		Redside shiner	78					0		
		Redside shiner	66					0		
		Redside shiner	67					0		
		Redside shiner	81					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	BS0104 28/08/2001 12.4									
		Redside shiner	63					0		
		Redside shiner	61					0		
		Redside shiner	70					0		
		Redside shiner	69					0		
		Redside shiner	72					0		
		Redside shiner	69					0		
		Redside shiner	57					0		
		Redside shiner	71					0		
		Spottail shiner	54					0		
		Trout-perch	51					0		
	BS0106 28/08/2001 18.3									
		Flathead chub	83					0		
		Northern pikeminnow	97					0		
		Redside shiner	44					0		
	BS0108 28/08/2001 23.7									
		Longnose sucker	87					0		
		Sucker spp.	31					0		
	BS0109 28/08/2001 23.7									
		Longnose sucker	27					4		
		Longnose sucker	25					4		
		Longnose sucker	42					4		
		Longnose sucker	30					4		
		Longnose sucker	35					4		
		Longnose sucker	27					4		
		Longnose sucker	40					4		
		Longnose sucker	41					4		
		Longnose sucker	41					4		
		Northern pikeminnow	29					4		
	BS0110 28/08/2001 30.6									
		Sucker spp.	48					0		
	ES0101 26/08/2001 31.2									
		Bull trout	559	1600		Fin Ray		0	Yellow	772
		Largescale sucker	521	1570				0	Yellow	675
		Longnose sucker	175	64				0		
		Longnose sucker	397	806				0	Yellow	770
		Longnose sucker	227	162				0		
		Longnose sucker	387	846				0	Yellow	767
		Longnose sucker	359	620				0	Yellow	766
		Mountain whitefish	182	64				0		
		Mountain whitefish	428	1016				0	Yellow	768
		Mountain whitefish	282	236				0	Yellow	771
		Mountain whitefish	183	56				0		
		Mountain whitefish	277	258				0	Yellow	769
		Mountain whitefish	182	54				0		
		Mountain whitefish	210	82				0		
		Mountain whitefish	121	20				0		
		Mountain whitefish	193	66				0		
		Arctic grayling	168					0		
		Longnose sucker	341	544				0	Yellow	1774

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0101 26/08/2001 31.2									
		Longnose sucker	421	1152				0	Yellow	1773
		Mountain whitefish	151	38				0		
		Mountain whitefish	144	34				0		
		Mountain whitefish	167	48				0		
		Mountain whitefish	383	642				0	Yellow	1772
		Mountain whitefish	199	74				0		
		Mountain whitefish	92	8				0		
		Mountain whitefish	413	792				0	Yellow	1799
		Rainbow trout	221	110				0		
	ES0102 26/08/2001 29.2									
		Goldeye	369	500		Scale	8	0	Yellow	779
		Largescale sucker	443	1190				0	Yellow	774
		Largescale sucker	494	1310				0	Yellow	775
		Longnose sucker	437	1130				0	Yellow	773
		Longnose sucker	195	94				0		
		Mountain whitefish	293	292				0	Yellow	776
		Mountain whitefish	283	256				0	Yellow	778
		Mountain whitefish	194	68				0		
		Mountain whitefish	260	196				0	Yellow	777
		Mountain whitefish	135	20				0		
		Largescale sucker	472	1410				0	Yellow	1784
		Longnose sucker	368	698				0	Yellow	1776
		Longnose sucker	473					0	Yellow	1777
		Longnose sucker	283	270				0	Yellow	1779
		Longnose sucker	353	550				0	Yellow	1778
		Longnose sucker	444	982				0	Yellow	1782
		Longnose sucker	416	946				0	Yellow	1783
		Longnose sucker	491	1632				0	Yellow	1781
		Longnose sucker	367	1622				0	Yellow	1775
		Longnose sucker	447	1124				0	Yellow	1800
		Mountain whitefish	374	620				0	Yellow	1780
		Mountain whitefish	208	102				0		
		Mountain whitefish	200					0		
		Walleye	437	878				5	Yellow	1785
	ES0103 26/08/2001 28.4									
		Largescale sucker	461	1292				0		
		Largescale sucker	423	1012				0	Yellow	780
		Largescale sucker	354	558				0	Yellow	781
		Largescale sucker	338	434				0		
		Longnose sucker	392	696				0	Yellow	782
		Largescale sucker	178	64				0		
		Longnose sucker	385	818				0	Yellow	1854
		Longnose sucker	390	786				0	Yellow	1794
		Longnose sucker	395	902				0	Yellow	1858
		Longnose sucker	457	1120				0	Yellow	1855
		Longnose sucker	431	1056				0	Yellow	1795
		Longnose sucker	427	1020				0	Yellow	1789
		Longnose sucker	419	848				0	Yellow	1798
		Longnose sucker	447	1290				0	Yellow	1851

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0103 26/08/2001 28.4									
		Longnose sucker	443	1214				0	Yellow	1853
		Longnose sucker	387	725				0	Yellow	1857
		Longnose sucker	495	1292				0	Yellow	1796
		Mountain whitefish	101	10				0		
		Mountain whitefish	194	70				0		
		Mountain whitefish	90					0		
		Mountain whitefish	132	24				0		
		Mountain whitefish	103					0		
		Mountain whitefish	260	202				0	Yellow	1790
		Mountain whitefish	101	8				0		
		Trout-perch	72					0		
		Walleye	573			Fin Ray	12	0	Yellow	1788
		Walleye	325	372		Fin Ray	4	0	Yellow	1793
		Walleye	399	752		Fin Ray	7	0	Yellow	1860
		Walleye	355	466		Fin Ray	4	0	Yellow	1797
		Walleye	412	748		Fin Ray	6	0	Yellow	1787
		Walleye	435	952		Fin Ray	6	0	Yellow	1792
		Walleye	394	712		Fin Ray	5	0	Yellow	1791
		Walleye	344			Fin Ray	4	0	Yellow	1856
		Walleye	356	502		Fin Ray	5	0	Yellow	1859
		Walleye	338	408		Fin Ray	4	0	Yellow	1852
		Walleye	321	318		Fin Ray	3	0	Yellow	1786
	ES0104 26/08/2001 26.4									
		Burbot	296	146				0	Yellow	821
		Goldeye	376	572		Scale	9	0	Yellow	797
		Goldeye	363	592		Scale	8	0	Yellow	793
		Goldeye	382	634		Scale	10	0	Yellow	808
		Goldeye	341	424		Scale	7	0	Yellow	807
		Largescale sucker	419	988				0	Yellow	789
		Largescale sucker	458	1220				0	Yellow	806
		Largescale sucker	487	1492				0	Yellow	809
		Largescale sucker	490	1448				0	Yellow	815
		Largescale sucker	438	1146				0	Yellow	817
		Largescale sucker	427	1132				0	Yellow	803
		Largescale sucker	499	1752				0	Yellow	795
		Largescale sucker	506	1686				0	Yellow	783
		Largescale sucker	553	2032				0	Yellow	785
		Largescale sucker	512	1638				0	Yellow	784
		Largescale sucker	456	1354				0	Yellow	788
		Largescale sucker	515	1610				0	Yellow	791
		Largescale sucker	540	2082				0	Yellow	790
		Largescale sucker	456	1216				0	Yellow	805
		Largescale sucker	481	1356				0	Yellow	794
		Largescale sucker	407	748				0	Yellow	804
		Largescale sucker	437	1180				0	Yellow	796
		Largescale sucker	494	1766				0	Yellow	798
		Largescale sucker	356	566				0	Yellow	799
		Largescale sucker	451	1072				0	Yellow	800
		Largescale sucker	439	1068				0	Yellow	801

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0104 26/08/2001 26.4									
		Largescale sucker	431	970				0	Yellow	802
		Largescale sucker	533	2024				0	Yellow	786
		Largescale sucker	382	728				0	Yellow	787
		Longnose sucker	275	220				0	Yellow	819
		Northern pikeminnow	481	1426				0	Yellow	792
		Walleye	456	982		Fin Ray		0	Yellow	818
		Walleye	422	866		Fin Ray		0	Yellow	816
		Walleye	410	690		Fin Ray		0	Yellow	810
		Walleye	455	1078		Fin Ray		0	Yellow	811
		Walleye	435	918		Fin Ray		0	Yellow	812
		Walleye	565	1876		Fin Ray		0	Yellow	813
		Walleye	401	796		Fin Ray		0	Yellow	814
		Walleye	355	442		Fin Ray		0	Yellow	820
		Walleye	271	142		Fin Ray	3	0	Yellow	1861
	ES0105 26/08/2001 26.4									
		Burbot	431	450				0		
		Largescale sucker	460	1322				0	Yellow	832
		Largescale sucker	360	604				0	Yellow	834
		Largescale sucker	598	2286				0	Yellow	827
		Largescale sucker	427	900				0	Yellow	824
		Largescale sucker	498	1276				0	Yellow	823
		Largescale sucker	415	930				0	Yellow	833
		Largescale sucker	488	1438				0	Yellow	836
		Largescale sucker	489	1218				0	Yellow	837
		Largescale sucker	485					0	Yellow	828
		Largescale sucker	455	1340				0	Yellow	826
		Largescale sucker	445					0	Yellow	825
		Largescale sucker	363	530				0	Yellow	835
		Largescale sucker	499	1622				0	Yellow	830
		Largescale sucker	455	1190				0	Yellow	821
		Largescale sucker	478	1522				0		
		Largescale sucker	450	1130				0	Yellow	831
		Largescale sucker	509	1716				0	Yellow	829
		Largescale sucker	511	1620				0	Yellow	822
		Longnose sucker	290	256				0	Yellow	838
		Walleye	334	386		Fin Ray		0	Yellow	839
		Arctic grayling	413	788				0	Yellow	1862
		Longnose sucker	390	784				0	Yellow	1863
		Longnose sucker	350	528				0		
		Longnose sucker	360	478				0	Yellow	1865
		Mountain whitefish	206	48				0		
		Walleye	385	558		Fin Ray	5	0	Yellow	1866
		Walleye	372	516		Fin Ray	5	0	Yellow	1864
	ES0106 26/08/2001 25.0									
		Burbot	477	684				0	Yellow	852
		Goldeye	348	534		Scale	7	0	Yellow	849
		Largescale sucker	474	1316				0	Yellow	850
		Largescale sucker	507	1502				0	Yellow	844
		Largescale sucker	472	1322				0	Yellow	842

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0106 26/08/2001 25.0									
		Longnose sucker	471	1224				0	Yellow	840
		Longnose sucker	383	746				0	Yellow	843
		Mountain whitefish	338	237				0	Yellow	854
		Mountain whitefish	388	656				0	Yellow	847
		Mountain whitefish	352	506				0	Yellow	846
		Mountain whitefish	293	290				0	Yellow	848
		Mountain whitefish	250	176				0	Yellow	855
		Mountain whitefish	374	640				0	Yellow	845
		Northern pikeminnow	524	2090				0	Yellow	841
		Walleye	418	856		Fin Ray		0	Yellow	851
		Longnose sucker	261	238				0	Yellow	1883
		Longnose sucker	396	840				0	Yellow	1878
		Longnose sucker	386	768				0	Yellow	1867
		Longnose sucker	371	664				0	Yellow	1879
		Mountain whitefish	350	490				0	Yellow	1869
		Mountain whitefish	301	284				0	Yellow	1870
		Mountain whitefish	154	42				0		
		Northern pike	197	88				0		
	ES0107 26/08/2001 25.0									
		Bull trout	357	452		Fin Ray		0	Yellow	860
		Bull trout	496	1216		Fin Ray		0	Yellow	861
		Lake chub	85					0		
		Largescale sucker	533	1876				0	Yellow	856
		Longnose sucker	197	90				0		
		Longnose sucker	416	854				0	Yellow	857
		Longnose sucker	195	86				0		
		Longnose sucker	482	944				0	Yellow	858
		Longnose sucker	382	692				0	Yellow	853
		Longnose sucker	181	68				0		
		Mountain whitefish	277	230				0	Yellow	859
		Mountain whitefish						0		
		Mountain whitefish	182	28				0		
		Mountain whitefish	186	64				0		
		Rainbow trout	189	88				0		
		Redside shiner	104					0		
		Largescale sucker	484	1586				0	Yellow	1868
		Largescale sucker	427	1062				0		
		Largescale sucker	482	1516				0		
		Longnose sucker	401	760				0	Yellow	1881
		Longnose sucker	402	888				0	Yellow	1876
		Longnose sucker	417	976				0		
		Longnose sucker	422	1082				0		
		Mountain whitefish	260	190	8			0	Yellow	1871
		Mountain whitefish	369	564	8			0	Yellow	1891
		Mountain whitefish	354	452	8			0	Yellow	1889
		Mountain whitefish	360	484	8			0	Yellow	1890
		Mountain whitefish	355	474	8			0	Yellow	1875
		Mountain whitefish	266	174				0	Yellow	1892
		Mountain whitefish	367	330	9			0	Yellow	1882

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0107 26/08/2001 25.0									
		Mountain whitefish	350	420	18			0	Yellow	1874
		Mountain whitefish	340		8			0	Yellow	1877
		Mountain whitefish	292	252	8			0	Yellow	1880
		Mountain whitefish	360	520	8			0	Yellow	1873
		Mountain whitefish	296	292	8			0	Yellow	1893
		Mountain whitefish	326	390	8			0	Yellow	1885
		Mountain whitefish	271	204	8			0	Yellow	1884
		Mountain whitefish	382	646	18			0	Yellow	1887
		Mountain whitefish	384	658	18			0	Yellow	1872
		Mountain whitefish	324	382	8			0	Yellow	1888
		Mountain whitefish	368	558	8			0		
		Mountain whitefish	350	506	18			0	Yellow	1886
	ES0108 26/08/2001 22.0									
		Longnose sucker	424	916				0	Yellow	862
		Longnose sucker	200	92				0		
		Mountain whitefish	388	704				0	Yellow	864
		Mountain whitefish	210	90				0		
		Mountain whitefish	451	1242				0	Yellow	863
		Mountain whitefish	185	62				0		
		Mountain whitefish	195	74				0		
		Bull trout	297	246		Fin Ray	3	0	Yellow	1900
		Bull trout	468	948		Fin Ray	6	0	Yellow	1901
		Longnose sucker	398	752				0	Yellow	1898
		Longnose sucker	247	190				0		
		Longnose sucker	375	678				0	Yellow	1895
		Longnose sucker	458	1208				0	Yellow	1894
		Mountain whitefish	438	946				0	Yellow	1896
		Mountain whitefish	208	92				0		
		Mountain whitefish	439	938				0	Yellow	1899
		Walleye	314	386		Fin Ray	4	0	Yellow	1897
	ES0109 26/08/2001 19.8									
		Arctic grayling	150	44				0		
		Arctic grayling	157	46				0		
		Largescale sucker	476	1444				0	Yellow	867
		Largescale sucker	421	1050				0	Yellow	866
		Longnose sucker	265	258				0	Yellow	869
		Longnose sucker	382	712				0	Yellow	870
		Longnose sucker	411	940				0	Yellow	868
		Longnose sucker	200	90				0		
		Longnose sucker	101	12				0		
		Longnose sucker	95	12				0		
		Longnose sucker	161	54				0		
		Longnose sucker	356	628				0	Yellow	871
		Mountain whitefish	275	244				0	Yellow	873
		Mountain whitefish	191	62				0		
		Mountain whitefish	187	68				0		
		Mountain whitefish	120	16				0		
		Mountain whitefish	182	52				0		
		Mountain whitefish	384	698				0	Yellow	872

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0109 26/08/2001 19.8									
		Walleye	457	1240		Fin Ray		0	Yellow	865
		Arctic grayling	176	54				0		
		Arctic grayling	196	78				0		
		Arctic grayling	135	28				0		
		Bull trout	415	672		Fin Ray	5	0	Yellow	1919
		Bull trout	330	314		Fin Ray	3	0	Yellow	1918
		Bull trout	457					2	Yellow	1901
		Largescale sucker	396	850				0	Yellow	1922
		Largescale sucker	373	712				0		
		Largescale sucker	468					0	Yellow	1907
		Longnose sucker	423	914				0	Yellow	1917
		Longnose sucker	411	910				0		
		Longnose sucker	401	854				0	Yellow	1920
		Longnose sucker	448					0	Yellow	1904
		Mountain whitefish	195	82				0		
		Mountain whitefish	382	602	8			0	Yellow	1915
		Mountain whitefish	304	342				0		
		Mountain whitefish	356	504				0	Yellow	1906
		Mountain whitefish	197	84				0		
		Mountain whitefish	361	542	8			0	Yellow	1911
		Mountain whitefish	366	520	8			0	Yellow	1908
		Mountain whitefish	380	590	8			0	Yellow	1913
		Mountain whitefish	285	236	8			0	Yellow	1910
		Mountain whitefish	391	666	8			0	Yellow	1909
		Mountain whitefish	343	376	8			0	Yellow	1921
		Mountain whitefish	281	250				0	Yellow	1914
		Mountain whitefish	361	576	8			0	Yellow	1903
		Mountain whitefish	100	8				0		
		Mountain whitefish	444	1102	18			0	Yellow	1916
		Mountain whitefish	331	378	9			0	Yellow	1912
		Mountain whitefish	146					0		
		Mountain whitefish	283	228				0	Yellow	1923
		Mountain whitefish	185	70				0		
		Mountain whitefish	373	536	18			0	Yellow	1905
		Mountain whitefish	281					0		
		Mountain whitefish	346	360	8			0	Yellow	1902
	ES0110 26/08/2001 17.0									
		Arctic grayling	162	46				0		
		Burbot	385	422				0	Yellow	891
		Burbot	355	320				0	Yellow	886
		Longnose sucker	382	780				0	Yellow	887
		Longnose sucker	287	272				0	Yellow	888
		Longnose sucker	373	606				0	Yellow	892
		Longnose sucker	352	522				0	Yellow	878
		Longnose sucker	254	200				0	Yellow	890
		Longnose sucker	237	168				0		
		Longnose sucker	147					0		
		Longnose sucker	182	72				0		
		Longnose sucker	327	428				0	Yellow	884

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0110 26/08/2001 17.0									
		Mountain whitefish	423	942				0	Yellow	876
		Mountain whitefish	109	12				0		
		Mountain whitefish	359	584				0	Yellow	882
		Mountain whitefish	409	984				0	Yellow	880
		Mountain whitefish	289	274				0	Yellow	889
		Mountain whitefish	234	170				0		
		Mountain whitefish	277	228				0	Yellow	875
		Mountain whitefish	270	224				0	Yellow	893
		Mountain whitefish	266	192				0	Yellow	896
		Mountain whitefish	253	268				0	Yellow	895
		Mountain whitefish	362	644				0	Yellow	877
		Mountain whitefish	286	310				0	Yellow	894
		Mountain whitefish	344	464				0	Yellow	879
		Mountain whitefish	447	1064				0	Yellow	874
		Mountain whitefish	83	8				0		
		Mountain whitefish	387	688				0	Yellow	885
		Mountain whitefish	272	260				0	Yellow	881
		Northern pikeminnow	330	436				0	Yellow	883
		Arctic grayling	197	94				0		
		Bull trout	330	334				0	Yellow	1933
		Longnose dace	65					0		
		Longnose sucker	401	890				0	Yellow	1928
		Longnose sucker	286	310				0	Yellow	1926
		Longnose sucker	416	886				0	Yellow	1932
		Longnose sucker	420	946				0	Yellow	1930
		Longnose sucker	364	676				0	Yellow	1931
		Longnose sucker	370					0	Yellow	1924
		Mountain whitefish	201	78				0		
		Mountain whitefish	211	96				0		
		Mountain whitefish	204	80				0		
		Mountain whitefish	197	80				0		
		Mountain whitefish	144	48				0		
		Mountain whitefish	157	34				0		
		Mountain whitefish	170	46				0		
		Mountain whitefish	385	568				0	Yellow	1925
		Mountain whitefish	213	100				0		
		Mountain whitefish	140	30				0		
		Mountain whitefish	210	90				0		
		Mountain whitefish	306	302				0	Yellow	1929
		Mountain whitefish	201	80				0		
		Mountain whitefish	206	86				0		
		Mountain whitefish	181	60				0		
		Mountain whitefish	144	36				0		
		Mountain whitefish	146	32				0		
		Mountain whitefish	149	30				0		
		Mountain whitefish	157	36				0		
		Mountain whitefish	209	88				0		
		Mountain whitefish	100	8				0		
		Mountain whitefish	291	264				0	Yellow	1927

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0111 27/08/2001 15.1									
		Goldeye	378	664		Scale	9	0	Yellow	897
		Longnose sucker	355	598				0	Yellow	898
		Longnose sucker	370	666				0	Yellow	899
		Mountain whitefish	373	624				0	Yellow	900
		Mountain whitefish	184	62				0		
		Mountain whitefish	188	66				0		
		Mountain whitefish	199	70				0		
		Mountain whitefish	187	68				0		
		Mountain whitefish	189	62				0		
		Mountain whitefish	183	56				0		
		Mountain whitefish	195	76				0		
		Longnose sucker	502	1400				0	Yellow	1937
		Rainbow trout	171	52				0		
	ES0112 27/08/2001 12.5									
		Bull trout	420	710				0	Yellow	908
		Largescale sucker	440	976				0	Yellow	903
		Largescale sucker	440	976				0	Yellow	903
		Largescale sucker	445	1066				0	Yellow	904
		Largescale sucker	405	814				0	Yellow	902
		Largescale sucker	395	878				0	Yellow	901
		Largescale sucker	445	1066				0	Yellow	904
		Largescale sucker	367	570				0	Yellow	906
		Largescale sucker	367	570				0	Yellow	906
		Largescale sucker	405	814				0	Yellow	902
		Longnose sucker	408	900				0	Yellow	905
		Mountain whitefish	280	228				0	Yellow	907
		Mountain whitefish	107	20				0		
		Northern pikeminnow	333					0	Yellow	883
		Bull trout	425	766				0	Yellow	1946
		Longnose sucker	346	544				0	Yellow	1944
		Longnose sucker	389	926				0	Yellow	1941
		Mountain whitefish	290	272	8			0	Yellow	1936
		Mountain whitefish	281	252				0	Yellow	1945
		Mountain whitefish	338	408	8			0	Yellow	1934
		Mountain whitefish	370	556	8			0	Yellow	1938
		Mountain whitefish	153	34				0		
		Mountain whitefish	368	474	8			0	Yellow	1939
		Mountain whitefish	267	198	8			0	Yellow	1942
		Mountain whitefish	404	650				0	Yellow	1943
		Mountain whitefish	389	632	18			0	Yellow	1935
		Mountain whitefish	433	470	9			0	Yellow	1940
	ES0113 27/08/2001 11.0									
		Burbot	303	146				0		
		Longnose sucker	384	690				0	Yellow	915
		Mountain whitefish	294	248				0	Yellow	916
		Mountain whitefish	398	742				0	Yellow	911
		Mountain whitefish	384	788				0	Yellow	914
		Mountain whitefish	363	558				0	Yellow	917
		Mountain whitefish	290	266				0	Yellow	918

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0113 27/08/2001 11.0									
		Mountain whitefish	288	272				0	Yellow	919
		Mountain whitefish	373	610				0	Yellow	909
		Northern pike	424	402		Fin Ray	4	0	Yellow	913
		Walleye	359	500		Fin Ray		0	Yellow	920
		Walleye	381	634		Fin Ray		0	Yellow	910
		Walleye	425	840		Fin Ray		0	Yellow	912
		Arctic grayling	117	6				0		
		Largescale sucker	204	90				0		
		Longnose sucker	256	190				0	Yellow	1950
		Mountain whitefish	398		19			0		
		Mountain whitefish	197	74				0		
		Mountain whitefish	223	118				0		
		Mountain whitefish	213	84				0		
		Mountain whitefish	193	72				0		
		Mountain whitefish	261	178				0	Yellow	1953
		Mountain whitefish	274	208				0	Yellow	1954
		Mountain whitefish	192	58				0		
		Mountain whitefish	370	498				0	Yellow	1952
		Mountain whitefish	154	22				0		
		Mountain whitefish	186	64				0		
		Mountain whitefish	448	896				0	Yellow	1947
		Mountain whitefish	421	840	19			0	Yellow	1948
		Mountain whitefish	502	1376	19			0	Yellow	1949
		Mountain whitefish	481	1230				0	Yellow	1951
		Mountain whitefish	272	214				0	Yellow	1955
		Rainbow trout	193	80				0		
		Rainbow trout	174	58				0		
		Trout-perch	79					0		
	ES0114 27/08/2001 8.0									
		Goldeye	338	426		Scale	8	0	Yellow	921
		Goldeye	342	452		Scale	8	0	Yellow	922
		Largescale sucker	337	500				0	Yellow	923
		Longnose sucker	151	38				0		
		Longnose sucker	205	94				0		
		Longnose sucker	184	78				0		
		Mountain whitefish	253	134				0	Yellow	929
		Mountain whitefish	183	62				0		
		Mountain whitefish	110	14				0		
		Mountain whitefish	112	14				0		
		Mountain whitefish	275	228				0	Yellow	927
		Mountain whitefish	388	780				0	Yellow	926
		Mountain whitefish	283	326				0	Yellow	925
		Mountain whitefish	179	56				0		
		Mountain whitefish	282	306				0	Yellow	924
		Mountain whitefish	293	260				0	Yellow	928
		Redside shiner	84					0		
		Redside shiner	96	10				0		
		Bull trout	430	718				0	Yellow	1961
		Longnose sucker	456	1132				0	Yellow	1956

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 1 Peace River										
	ES0114 27/08/2001 8.0									
		Mountain whitefish	208	104				0		
		Mountain whitefish	182	64				0		
		Mountain whitefish	290	256		8		0	Yellow	1957
		Mountain whitefish	289	244				0	Yellow	1958
		Mountain whitefish	398	536				0	Yellow	1959
		Mountain whitefish	223	142				0		
		Mountain whitefish	196	74				0		
		Mountain whitefish	194	68				0		
		Northern pike	445	596				2	Yellow	913
		Rainbow trout	298					0	Yellow	1960
Zone 2 Peace River										
	BS0202 20/10/2001 47.7									
		Prickly sculpin	30					4		
	BS0203 20/10/2001 70.0									
		Largescale sucker	28					4		
		Largescale sucker	26					4		
		Longnose sucker	43					4		
		Longnose sucker	41					4		
		Longnose sucker	33					4		
		Longnose sucker	35					4		
		Longnose sucker	41					4		
	BS0205 25/08/2001 64.7									
		Sucker spp.	31					0		
		Sucker spp.	29					0		
	BS0206 20/10/2001 64.6									
		Longnose sucker	48					4		
		Mountain whitefish	96					0		
		Northern pikeminnow	76					0		
		Prickly sculpin	25					4		
		Redside shiner	62					0		
		Redside shiner	33					0		
		Redside shiner	33					0		
		Redside shiner	27					0		
		Redside shiner	50					0		
		Redside shiner	59					0		
		Redside shiner	50					0		
		Redside shiner	37					0		
		Redside shiner	47					0		
		Redside shiner	27					0		
		Redside shiner	44					0		
		Redside shiner	34					0		
		Slimy sculpin	72					4		
		Spoonhead sculpin	30					0		
		Spottail shiner	28					0		
		Spottail shiner	30					0		
		Spottail shiner	39					0		
		Spottail shiner	40					0		
		Spottail shiner	32					0		
		Spottail shiner	34					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	BS0206 20/10/2001 64.6									
		Spottail shiner	33					0		
		Spottail shiner	31					0		
		Spottail shiner	27					0		
		Spottail shiner	41					0		
		Spottail shiner	32					0		
		Spottail shiner	31					0		
		Spottail shiner	35					0		
		Spottail shiner	34					0		
		Spottail shiner	38					0		
		Spottail shiner	40					0		
		Spottail shiner	35					0		
		Spottail shiner	33					0		
		Spottail shiner	43					0		
		Spottail shiner	32					0		
		Spottail shiner	29					0		
		Spottail shiner	34					0		
		Spottail shiner	39					0		
		Spottail shiner	34					0		
		Spottail shiner	36					0		
		Spottail shiner	37					0		
		Spottail shiner	30					0		
		Spottail shiner	38					0		
		Spottail shiner	39					0		
		Spottail shiner	34					0		
		Spottail shiner	43					0		
		Spottail shiner	34					0		
		Spottail shiner	36					0		
		Spottail shiner	42					0		
		Spottail shiner	28					0		
		Spottail shiner	34					0		
		Spottail shiner	38					0		
		Spottail shiner	29					0		
		Spottail shiner	25					0		
		Spottail shiner	37					0		
		Spottail shiner	38					0		
		Spottail shiner	33					0		
		Spottail shiner	34					0		
		Spottail shiner	39					0		
		Spottail shiner	41					0		
		Spottail shiner	38					0		
		Spottail shiner	33					0		
		Spottail shiner	37					0		
		Spottail shiner	41					0		
		Spottail shiner	32					0		
		Spottail shiner	34					0		
		Spottail shiner	32					0		
		Spottail shiner	54					0		
		Spottail shiner	42					0		
		Spottail shiner	29					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	BS0206 20/10/2001 64.6									
		Spottail shiner	29					0		
		Spottail shiner	40					0		
		Spottail shiner	33					0		
		Spottail shiner	40					0		
		Spottail shiner	49					0		
		Spottail shiner	42					0		
		Spottail shiner	36					0		
		Spottail shiner	39					0		
		Spottail shiner	36					0		
		Spottail shiner	37					0		
		Spottail shiner	32					0		
		Spottail shiner	34					0		
		Spottail shiner	38					0		
		Spottail shiner	34					0		
		Spottail shiner	24					0		
		Sucker spp.	38					0		
		Sucker spp.	28					0		
		Sucker spp.	34					0		
		Sucker spp.	34					0		
		Sucker spp.	32					0		
		Sucker spp.	32					0		
		Sucker spp.	37					0		
		Sucker spp.	40					0		
		Sucker spp.	41					0		
		Sucker spp.	33					0		
		Sucker spp.	43					0		
		Sucker spp.	32					0		
		Sucker spp.	37					0		
		Sucker spp.	35					0		
		Sucker spp.	37					0		
		Sucker spp.	34					0		
		Sucker spp.	37					0		
		Sucker spp.	35					0		
		Sucker spp.	31					0		
		Sucker spp.	36					0		
		Sucker spp.	31					0		
		Sucker spp.	42					0		
		Sucker spp.	36					0		
		Sucker spp.	39					0		
		Sucker spp.	34					0		
		Sucker spp.	34					0		
		Sucker spp.	36					0		
		Sucker spp.	32					0		
		Sucker spp.	28					0		
		Trout-perch	68					0		
	BS0207 25/08/2001 61.2									
		Redside shiner	57					0		
		Redside shiner	51					0		
		Redside shiner	57					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	BS0207 25/08/2001 61.2									
		Redside shiner	53					0		
		Redside shiner	56					0		
		Redside shiner	56					0		
		Redside shiner	53					0		
		Redside shiner	33					0		
		Redside shiner	58					0		
		Redside shiner	55					0		
		Spoonhead sculpin	24					0		
		Spoonhead sculpin	22					0		
		Spottail shiner	42					0		
		Spottail shiner	67					0		
		Spottail shiner	70					0		
		Spottail shiner	69					0		
		Spottail shiner	74					0		
		Spottail shiner	69					0		
		Spottail shiner	72					0		
		Spottail shiner	73					0		
		Spottail shiner	58					0		
		Spottail shiner	73					0		
		Spottail shiner	74					0		
		Spottail shiner	71					0		
		Spottail shiner	64					0		
		Spottail shiner	60					0		
		Spottail shiner	73					0		
		Spottail shiner	69					0		
		Spottail shiner	71					0		
		Spottail shiner	71					0		
		Spottail shiner	69					0		
		Spottail shiner	64					0		
		Spottail shiner	74					0		
		Sucker spp.	27					0		
		Largescale sucker	180					0		
		Longnose sucker	73					0		
		Longnose sucker	60					0		
		Redside shiner	30					0		
		Redside shiner	50					0		
		Redside shiner	69					0		
		Redside shiner	30					0		
		Redside shiner	22					0		
		Spottail shiner	31					0		
		Spottail shiner	31					0		
		Spottail shiner	24					0		
		Spottail shiner	32					0		
		Spottail shiner	33					0		
		Spottail shiner	35					0		
		Spottail shiner	76					0		
		Spottail shiner	31					0		
		Spottail shiner	39					0		
		Spottail shiner	29					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	BS0207 25/08/2001 61.2									
		Spottail shiner	30					0		
		Spottail shiner	30					0		
		Spottail shiner	71					0		
		Spottail shiner	77					0		
		Spottail shiner	33					0		
		Spottail shiner	37					0		
		Spottail shiner	30					0		
		Sucker spp.	44					0		
		Sucker spp.	36					0		
		Sucker spp.	45					0		
		Sucker spp.	29					0		
		Sucker spp.	40					0		
		Yellow perch	124					0		
	BS0209 25/08/2001 53.6									
		Northern pike	202			Scale	2	0		
		Spottail shiner	48					0		
		Spottail shiner	50					0		
		Sucker spp.	31					0		
		Sucker spp.	32					0		
		Sucker spp.	28					0		
		Sucker spp.	26					0		
		Sucker spp.	31					0		
		Sucker spp.	28					0		
		Sucker spp.	35					0		
		Sucker spp.	32					0		
		Sucker spp.	33					0		
		Sucker spp.	29					0		
		Sucker spp.	39					0		
		Sucker spp.	34					0		
		Sucker spp.	27					0		
		Sucker spp.	27					0		
		Sucker spp.	28					0		
	BS0210 20/10/2001 64.5									
		Longnose sucker	104					0		
		Redside shiner	72					0		
		Redside shiner	91					0		
		Redside shiner	89					0		
		Sucker spp.	42					0		
	EF0201 25/08/2001 70.0									
		Longnose dace	29					0		
		Longnose dace	28					0		
		Longnose dace	32					0		
		Longnose dace	34					0		
		Longnose dace	31					0		
		Longnose dace	33					0		
		Longnose dace	34					0		
		Longnose dace	32					0		
		Longnose dace	36					0		
		Longnose dace	31					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	EF0201 25/08/2001 70.0									
		Longnose dace	34					0		
		Longnose sucker	84					0		
		Longnose sucker	68					0		
		Slimy sculpin	61					0		
		Slimy sculpin	57					0		
	EF0202 25/08/2001 65.6									
		Longnose dace	24					0		
		Longnose dace	45					0		
		Redside shiner	22					0		
		Slimy sculpin	76					0		
		Sucker spp.	25					0		
		Sucker spp.	29					0		
		Sucker spp.	22					0		
		Sucker spp.	28					0		
		Sucker spp.	22					0		
		Sucker spp.	27					0		
		Sucker spp.	28					0		
		Sucker spp.	24					0		
		Sucker spp.	25					0		
		Sucker spp.	21					0		
	EF0203 25/08/2001 64.5									
		Longnose dace	62					0		
		Longnose dace	68					0		
		Longnose dace	77					0		
		Longnose dace	70					0		
		Longnose dace	76					0		
		Longnose dace	60					0		
		Longnose dace	69					0		
		Longnose dace	46					0		
		Longnose dace	74					0		
		Longnose sucker	155					0		
		Longnose sucker	114					0		
		Northern pikeminnow	94					0		
		Redside shiner	75					0		
		Redside shiner	106					0		
		Redside shiner	89					0		
		Redside shiner	76					0		
		Redside shiner	76					0		
		Redside shiner	64					0		
		Spottail shiner	56					0		
	EF0204 25/08/2001 57.2									
		Longnose sucker	113					0		
		Slimy sculpin	46					0		
		Slimy sculpin	58					0		
		Slimy sculpin	79					0		
		Slimy sculpin	70					0		
		Slimy sculpin	43					0		
		Slimy sculpin	67					0		
		Slimy sculpin	56					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	EF0204 25/08/2001 57.2									
		Slimy sculpin	57					0		
		Slimy sculpin	47					0		
		Slimy sculpin	41					0		
		Slimy sculpin	54					0		
		Slimy sculpin	53					0		
	ES0201 23/08/2001 70.0									
		Longnose sucker	389	942				0	Yellow	606
		Mountain whitefish	194	66				0		
		Mountain whitefish	287					0		
		Lake whitefish	274	220		Scale	3	0	Yellow	1700
		Lake whitefish	253	166		Scale	3	0	Yellow	1804
		Largescale sucker	403	862				0	Yellow	1813
		Largescale sucker	340	516				0	Yellow	1810
		Largescale sucker	366	640				0	Yellow	1812
		Largescale sucker	373	678				0	Yellow	1811
		Largescale sucker	370	720				0	Yellow	1808
		Longnose sucker	438	1190				0	Yellow	1809
		Longnose sucker	423					0	Yellow	1807
		Longnose sucker	378	714				0	Yellow	1695
		Longnose sucker	391	750				0	Yellow	1806
		Longnose sucker	478	1456				0	Yellow	1697
		Longnose sucker	455	1214				0	Yellow	1803
		Longnose sucker	447	1158				0	Yellow	1699
		Longnose sucker	438	1148				0	Yellow	1805
		Mountain whitefish	276	212				0	Yellow	1815
		Mountain whitefish	206	92				0		
		Mountain whitefish	230	140				0		
		Mountain whitefish	104	10				0		
		Mountain whitefish	327	430				0	Yellow	1814
		Northern pike	564	1314		Fin Ray	5	0	Yellow	1696
		Northern pike	490	898		Fin Ray	4	0	Yellow	1801
		Rainbow trout	435	912				0	Yellow	1817
		Walleye	475	1310		Fin Ray	9	0	Yellow	1698
		Walleye	446	992		Fin Ray	6	0	Yellow	1816
		Walleye	442	1028		Fin Ray	7	0	Yellow	1802
	ES0202 23/08/2001 68.0									
		Arctic grayling	218	78				0		
		Arctic grayling						0		
		Bull trout	275	216				0	Yellow	613
		Largescale sucker	467	476				0		
		Largescale sucker	319	404				0		
		Largescale sucker	144	40				0		
		Longnose sucker	428	886	9			0	Yellow	608
		Longnose sucker	395	862				0	Yellow	607
		Longnose sucker	102	10				0		
		Longnose sucker	134	28				0		
		Mountain whitefish	388					0		
		Mountain whitefish	258	184				0	Yellow	612
		Mountain whitefish	204	66				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0202 23/08/2001 68.0									
		Mountain whitefish	189	66				0		
		Mountain whitefish	205	78				0		
		Mountain whitefish	198	72				0		
		Mountain whitefish	310	386				0	Yellow	614
		Mountain whitefish	195	78				0		
		Mountain whitefish	383	620				0	Yellow	611
		Mountain whitefish	349	454				0	Yellow	609
		Mountain whitefish	353					0		
		Mountain whitefish	298	274				0	Yellow	615
		Mountain whitefish	345	516				0	Yellow	610
		Arctic grayling	103	8				0		
		Arctic grayling	134	26				0		
		Arctic grayling	315					2	Yellow	1818
		Arctic grayling	124	22				0		
		Longnose sucker	322	434				0		
		Longnose sucker	417	1022				0		
		Longnose sucker	373	712				0		
		Longnose sucker	446	1314				0		
		Longnose sucker	407	834				0		
		Longnose sucker	414	906				0		
		Longnose sucker	426	1068				0		
		Longnose sucker	398	784				0		
		Mountain whitefish	150	32				0		
		Mountain whitefish	325					2	Yellow	1833
		Mountain whitefish	420	1006				0		
		Mountain whitefish	162	44				0		
		Mountain whitefish	211	102				0		
		Mountain whitefish	158	36				0		
		Mountain whitefish	265	214				0		
		Mountain whitefish	430					2	Yellow	1821
		Mountain whitefish	236	140				0		
		Trout-perch	74	4				0		
	ES0203 23/08/2001 64.8									
		Largescale sucker	501					0		
		Largescale sucker	520	1986				0	Yellow	616
		Mountain whitefish	319	368				0	Yellow	618
		Northern pike	514	934		Fin Ray	4	0	Yellow	617
		Northern pikeminnow	561	2270				2	White	13089
		Redside shiner	83					0		
		Arctic grayling	357	584				0	Yellow	1845
		Bull trout	566			Fin Ray		0	Yellow	1846
		Longnose sucker	410	958				0		
		Longnose sucker	384	820				0		
		Mountain whitefish	358	490	8			0		
		Mountain whitefish	238	140				0		
		Mountain whitefish	298					0		
		Mountain whitefish	308	360				0		
		Mountain whitefish	227	120				0		
		Mountain whitefish	161	38				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0203 23/08/2001 64.8									
		Mountain whitefish	276	256				0		
		Mountain whitefish	157					0		
		Mountain whitefish	435					0	Yellow	1844
		Mountain whitefish	197	72				0		
		Mountain whitefish	329	460				0		
		Mountain whitefish	394	688				0		
		Mountain whitefish	324	386				0		
		Mountain whitefish	319	330	8			0		
		Mountain whitefish	210	110				0		
	ES0204 23/08/2001 64.0									
		Arctic grayling	289	274				0	Yellow	642
		Arctic grayling	381	714	10			0	Yellow	639
		Arctic grayling	317	362				0	Yellow	631
		Arctic grayling	352	464				0	Yellow	624
		Bull trout	171	52		Scale	2	0		
		Bull trout	309	166		Fin Ray		0	Yellow	653
		Largescale sucker	139	34				0		
		Largescale sucker	241	178				0		
		Longnose sucker	248	176				0		
		Longnose sucker	169	58				0		
		Longnose sucker	243	146				0		
		Longnose sucker	246	208				0		
		Longnose sucker	369	744				0	Yellow	646
		Longnose sucker	167	54				0		
		Longnose sucker	209	116				0		
		Longnose sucker	156	44				0		
		Longnose sucker	260	214				0	Yellow	648
		Longnose sucker	310	344				0	Yellow	652
		Longnose sucker	279	264				0		
		Longnose sucker	154	42				0		
		Mountain whitefish	291	312				0	Yellow	643
		Mountain whitefish	443	934				0	Yellow	635
		Mountain whitefish	250	160				0	Yellow	634
		Mountain whitefish	332					0	Yellow	633
		Mountain whitefish	193	68				0		
		Mountain whitefish	330	452				0	Yellow	630
		Mountain whitefish	332	402				0	Yellow	629
		Mountain whitefish	441	900				0	Yellow	627
		Mountain whitefish	340	496				0	Yellow	636
		Mountain whitefish	337	488				0	Yellow	628
		Mountain whitefish	254	162				0	Yellow	655
		Mountain whitefish	353					0		
		Mountain whitefish	365	600				0	Yellow	623
		Mountain whitefish	364	518				0	Yellow	622
		Mountain whitefish	463	1084				0	Yellow	621
		Mountain whitefish	431	1032				0	Yellow	620
		Mountain whitefish	497	1472				0	Yellow	619
		Mountain whitefish	133	22				0		
		Mountain whitefish	74	4				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0204 23/08/2001 64.0									
		Mountain whitefish	272	234				0	Yellow	649
		Mountain whitefish	357	576				0	Yellow	625
		Mountain whitefish	416					0		
		Mountain whitefish	389	746				0	Yellow	640
		Mountain whitefish	194	58				0		
		Mountain whitefish	214	92				0		
		Mountain whitefish	410	912				0	Yellow	637
		Mountain whitefish	262	196				0	Yellow	654
		Mountain whitefish	246	166				0		
		Mountain whitefish	275	220				0	Yellow	651
		Mountain whitefish	276	194				0	Yellow	650
		Mountain whitefish	264	178				0	Yellow	647
		Mountain whitefish						0		
		Mountain whitefish	246	148				0		
		Mountain whitefish	428	962				0	Yellow	645
		Mountain whitefish	201	76				0		
		Mountain whitefish	418					0	Yellow	644
		Mountain whitefish	323	364				0	Yellow	641
		Mountain whitefish	449	1106				0	Yellow	626
		Mountain whitefish	337	496				0	Yellow	638
		Mountain whitefish						0		
		Mountain whitefish	341	446				0	Yellow	632
		Redside shiner	36					0		
		Redside shiner	34					0		
		Arctic grayling	378	576				0	Yellow	1702
		Arctic grayling	279	268				0	Yellow	1848
		Arctic grayling	112					0		
		Arctic grayling	124	18				0		
		Arctic grayling	389	774				0	Yellow	1847
		Arctic grayling	318	392				0		
		Arctic grayling	298	274				0	Yellow	1850
		Lake whitefish	484	1458		Scale	7	0	Yellow	1849
		Mountain whitefish	337	452	8			0		
		Mountain whitefish	267	196				0		
		Mountain whitefish	240	150				0		
		Mountain whitefish	307	398	8			0		
		Mountain whitefish	335	494	8			0		
		Mountain whitefish	289	300				0		
		Mountain whitefish	307	360	8			0		
		Mountain whitefish	365	540	8			0		
		Mountain whitefish	352	508	8			0		
		Mountain whitefish	113	12				0		
		Mountain whitefish	325	416				0		
		Mountain whitefish	406	782				0		
		Mountain whitefish	207	100				0		
		Mountain whitefish	305		8			0		
		Mountain whitefish	303	346				0	Yellow	1701
		Mountain whitefish	363	522	8			0		
		Mountain whitefish	341	482	8			0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0204 23/08/2001 64.0									
		Mountain whitefish	336					0		
		Mountain whitefish	305	330	8			0		
		Mountain whitefish	338	440	8			0		
		Mountain whitefish	415					0		
		Mountain whitefish	391	658	8			0		
		Mountain whitefish	340	518				0		
		Mountain whitefish	303	348	8			0		
		Mountain whitefish	294	322	8			0		
		Mountain whitefish	365	520	8			0		
		Mountain whitefish	369	570	8			0		
		Mountain whitefish	348	484	8			0		
		Mountain whitefish	452	1060				0		
		Mountain whitefish	279	250	8			0		
		Mountain whitefish	315	410	8			0		
		Mountain whitefish	337	468	8			0		
		Mountain whitefish	137	28				0		
		Mountain whitefish	348	464	8			0		
		Mountain whitefish	292	352	8			0		
		Mountain whitefish	153	38				0		
		Mountain whitefish	105	12				0		
		Mountain whitefish	345	592				0		
		Mountain whitefish	280	244	8			0		
		Mountain whitefish	151	34				0		
		Mountain whitefish	285	326	8			0		
		Mountain whitefish	343	538	8			0		
		Redside shiner	100	8				0		
	ES0205 23/08/2001 62.0									
		Arctic grayling	277	340				0	Yellow	662
		Arctic grayling	287	240				0	Yellow	661
		Arctic grayling	159	50				0		
		Largescale sucker	348	490				0	Yellow	656
		Longnose sucker	425	888				0	Yellow	658
		Longnose sucker	375	706				0	Yellow	657
		Longnose sucker	126	26				0		
		Mountain whitefish	264	190				0	Yellow	659
		Mountain whitefish	351	524				0	Yellow	660
		Arctic grayling	408					0	Yellow	1704
		Arctic grayling	288					0	Yellow	1707
		Arctic grayling	435					0	Yellow	1706
		Arctic grayling	167					0		
		Arctic grayling	415					0	Yellow	1703
		Largescale sucker	393					0		
		Longnose sucker	399					0		
		Longnose sucker	403					0		
		Longnose sucker	417					0		
		Longnose sucker	341					0		
		Longnose sucker	452					0		
		Longnose sucker	354					0		
		Longnose sucker	415					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0205 23/08/2001 62.0									
		Longnose sucker	420					0		
		Longnose sucker	456					0		
		Longnose sucker	358					0		
		Longnose sucker	365					0		
		Longnose sucker	372					0		
		Longnose sucker	412					0		
		Mountain whitefish	429					0		
	ES0206 23/08/2001 60.5									
		Bull trout	416	678		Fin Ray		0	Yellow	681
		Bull trout	419	688		Fin Ray		0	Yellow	679
		Largescale sucker	454	1270				0	Yellow	663
		Longnose dace	86					0		
		Longnose sucker	180	74				0		
		Mountain whitefish	281	248				0	Yellow	677
		Mountain whitefish	190	64				0		
		Mountain whitefish	217	102				0		
		Mountain whitefish	147	26				0		
		Mountain whitefish	130	26				0		
		Mountain whitefish	257	172				0	Yellow	680
		Mountain whitefish	183	62				0		
		Mountain whitefish	136	26				0		
		Mountain whitefish	422	1084				0	Yellow	665
		Mountain whitefish	102	8				0		
		Mountain whitefish	192	76				0		
		Mountain whitefish	125	20				0		
		Mountain whitefish	127	20				0		
		Mountain whitefish	121	18				0		
		Mountain whitefish	332	422				0	Yellow	670
		Mountain whitefish	390	692				0	Yellow	664
		Mountain whitefish	428	906				0	Yellow	666
		Mountain whitefish	393	756				0	Yellow	667
		Mountain whitefish	367	554				0	Yellow	668
		Mountain whitefish	262	176				0	Yellow	669
		Mountain whitefish	384	606				0	Yellow	671
		Mountain whitefish	430	972				0	Yellow	672
		Mountain whitefish	355	586				0	Yellow	673
		Mountain whitefish	313	326				0	Yellow	674
		Mountain whitefish	289	276				0	Yellow	675
		Mountain whitefish	76					0		
		Mountain whitefish	87					0		
		Mountain whitefish	254	184				0	Yellow	676
		Mountain whitefish	191	62				0		
		Mountain whitefish	82	8				0		
		Mountain whitefish	202	80				0		
		Mountain whitefish	81	4				0		
		Northern pike	271	160				0	Yellow	678
		Longnose sucker	405	982				0		
		Mountain whitefish	280				8	0		
		Mountain whitefish	220	122				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0206 23/08/2001 60.5									
		Mountain whitefish	303	310	8			0		
		Mountain whitefish	296		8			0		
		Mountain whitefish	321	394	8			0		
		Mountain whitefish	283	230	8			0		
		Mountain whitefish	317	390	8			0		
		Mountain whitefish	321	382	8			0		
		Mountain whitefish	320	330	8			0		
		Mountain whitefish	312	388	8			0		
		Mountain whitefish	323		8			0		
		Mountain whitefish	349	546				0		
		Mountain whitefish	343	432	8			0		
		Mountain whitefish	430	942	8			0		
		Mountain whitefish	406	828				0		
		Mountain whitefish	316	402				0		
		Mountain whitefish	344	420	8			0		
		Mountain whitefish	376	622				0		
		Mountain whitefish	308		8			0		
		Mountain whitefish	438	994				0		
		Mountain whitefish	342	400	8			0		
		Mountain whitefish	340	452	8			0		
		Mountain whitefish	441	994				0		
		Mountain whitefish	365	592	8			0		
		Mountain whitefish	323	330	8			0		
		Mountain whitefish	321	364	8			0		
		Mountain whitefish	345	394	8			0		
		Mountain whitefish	430	968				0		
		Mountain whitefish	371	596	8			0		
		Mountain whitefish	331	418				0		
	ES0207 23/08/2001 61.0									
		Largescale sucker	467	1200				0	Yellow	682
		Largescale sucker	409	810				0	Yellow	683
		Northern pike	611	1632		Fin Ray	6	0	Yellow	685
		Northern pike	554	1232		Fin Ray	5	0	Yellow	684
		Redside shiner	91					0		
		Yellow perch	143			Fin Ray	3	0		
		Yellow perch	141	40		Fin Ray	3	0		
		Yellow perch	167	62		Fin Ray	4	0		
		Yellow perch	135	30		Fin Ray	3	0		
		Largescale sucker	189	82				0		
		Largescale sucker	154	44				0		
		Largescale sucker	230	156				0		
		Largescale sucker	151	38				0		
		Largescale sucker	177					0		
		Largescale sucker	322	406				0		
		Northern pike	269	130		Scale	2	0	Yellow	1708
		Northern pike	280	140		Scale	2	0	Yellow	1705
		Northern pike	272	122		Scale	2	0	Yellow	1709
		White sucker	192	88				0		
		White sucker	292	310				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0207 23/08/2001 61.0									
		White sucker	172	60				0		
		White sucker	250	214				0		
	ES0208 24/08/2001 59.0									
		Arctic grayling	348	468	20			0	Yellow	689
		Arctic grayling	334	382				0	Yellow	702
		Arctic grayling	369	610	10			0	Yellow	703
		Arctic grayling	151	38				0		
		Arctic grayling	369	568	10			0	Yellow	696
		Arctic grayling	269	210				0	Yellow	704
		Largescale sucker	450	1412				0	Yellow	701
		Largescale sucker	416	954				0	Yellow	695
		Largescale sucker	470	1246				0	Yellow	686
		Longnose sucker	420	780				0	Yellow	698
		Longnose sucker	378	694				0	Yellow	692
		Longnose sucker	434	1142				0	Yellow	691
		Longnose sucker	199	114				0		
		Longnose sucker	170	52				0		
		Longnose sucker	420	1034				0	Yellow	687
		Longnose sucker	357	596				0		
		Longnose sucker	232	142				0		
		Mountain whitefish	332	438				0	Yellow	693
		Mountain whitefish	311	350				0	Yellow	688
		Mountain whitefish	406	710				0	Yellow	700
		Mountain whitefish						0		
		Mountain whitefish	87					0		
		Mountain whitefish	352	522				0	Yellow	690
		Mountain whitefish	396	708				0	Yellow	699
		Mountain whitefish	403	784				0	Yellow	694
		Mountain whitefish	360	548				0	Yellow	697
		Arctic grayling	116	24				0		
		Bull trout	596	3300				0	Yellow	1717
		Largescale sucker	378	688				0		
		Longnose sucker	427	982				0	Yellow	1715
		Longnose sucker	393					0	Yellow	1711
		Longnose sucker	403	918				0	Yellow	1710
		Mountain whitefish	390	614				0	Yellow	1712
		Mountain whitefish	397	754				0	Yellow	1713
		Mountain whitefish	347	384	9			0		
		Mountain whitefish	314	316	8			0	Yellow	1714
		Mountain whitefish	358	434				0	Yellow	1716
	ES0209 24/08/2001 57.0									
		Arctic grayling	170	52				0		
		Longnose sucker	383	724				0	Yellow	706
		Longnose sucker	387	736				0	Yellow	707
		Longnose sucker	397	808				0	Yellow	708
		Longnose sucker	360	620				0	Yellow	709
		Longnose sucker	346	498				0	Yellow	710
		Longnose sucker	463	1156				0	Yellow	715
		Longnose sucker	115	18				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0209 24/08/2001 57.0									
		Mountain whitefish	199	92				0		
		Mountain whitefish	423	830				0	Yellow	711
		Arctic grayling	122	20				0		
		Bull trout	274	192				0	Yellow	1755
		Longnose sucker	443	1052				0		
		Longnose sucker	147	36				0		
		Longnose sucker	316	494				0		
		Longnose sucker	442					0		
		Mountain whitefish	377	514				0	Yellow	1754
		Mountain whitefish	280	248				0		
		Mountain whitefish	342					2	Yellow	1728
		Mountain whitefish	399					2	Yellow	1713
		Rainbow trout	361	638				0	Yellow	1753
		Rainbow trout	357	632				0	Yellow	1756
	ES0210 24/08/2001 55.6									
		Bull trout	452	870		Fin Ray		0	Yellow	731
		Largescale sucker	564	2200				0	Yellow	719
		Largescale sucker	454	1108				0	Yellow	718
		Largescale sucker	157					0		
		Largescale sucker	435	1030				0	Yellow	716
		Largescale sucker	133	32				0		
		Longnose sucker	167	50				0		
		Longnose sucker	154	42				0		
		Longnose sucker	392	890				0	Yellow	714
		Longnose sucker	422	1074				0	Yellow	715
		Longnose sucker	385	800				0	Yellow	722
		Longnose sucker	507					0	Yellow	717
		Longnose sucker	93	8				0		
		Longnose sucker	167	54				0		
		Mountain whitefish	427	938				0	Yellow	721
		Mountain whitefish	267	216				0	Yellow	737
		Mountain whitefish	464	1190				0	Yellow	720
		Mountain whitefish	79					0		
		Mountain whitefish	288	248				0	Yellow	723
		Mountain whitefish	307	326				0	Yellow	724
		Mountain whitefish	192	64				0		
		Mountain whitefish	347	510				0	Yellow	726
		Mountain whitefish	188	68				0		
		Mountain whitefish	292	276				0	Yellow	727
		Mountain whitefish	406	720				0	Yellow	728
		Mountain whitefish	423	882				0	Yellow	729
		Mountain whitefish	368	664				0	Yellow	730
		Mountain whitefish	239	156				0		
		Mountain whitefish	395					2	Yellow	667
		Mountain whitefish	321	354				0	Yellow	736
		Mountain whitefish	396	584				0	Yellow	725
		Mountain whitefish	242	148				0		
		Mountain whitefish	251	156				0	Yellow	735
		Mountain whitefish	305	312				0	Yellow	734

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0210 24/08/2001 55.6									
		Mountain whitefish	213	92				0		
		Northern pike	944	9000		Fin Ray	9	0	Yellow	713
		Northern pike	572	1374		Fin Ray	5	0	Yellow	732
		Northern pike	506	864		Fin Ray	4	0	Yellow	733
		Arctic grayling	297	352				0	Yellow	1759
		Bull trout	470	898				0	Yellow	1760
		Kokanee	171	46				0		
		Largescale sucker	515	1628				0		
		Longnose sucker	402	786				0		
		Longnose sucker	485					0		
		Longnose sucker	460					0		
		Longnose sucker	490	1540				0		
		Longnose sucker	484	1312				0		
		Longnose sucker	318	412				0		
		Mountain whitefish	393	786				0	Yellow	1757
		Mountain whitefish	145					0		
		Mountain whitefish	224	100				0		
		Mountain whitefish	212					0		
		Mountain whitefish	318	358				0	Yellow	1758
	ES0211 24/08/2001 54.0									
		Northern pike	564	2500		Fin Ray	5	0	Yellow	738
		Northern pike	498			Fin Ray	4	0	Yellow	740
		Northern pike	742	5500		Fin Ray	9	0	Yellow	739
		Walleye	331	410		Fin Ray		0	Yellow	743
		White sucker	408	996				0	Yellow	741
		White sucker	397	952				0	Yellow	742
		Largescale sucker	176	52				0		
		Largescale sucker	224	136				0		
		Longnose sucker	520	1406				0		
		Northern pike	444			Scale	4	0	Yellow	1761
		Northern pike	321	210		Fin Ray	3	0	Yellow	1762
	ES0212 19/10/2001 53.0									
		Largescale sucker	570	2274				0		
		Largescale sucker	494	1582				0		
		Largescale sucker	472	1208				0		
		Largescale sucker	450	1242				0		
		Largescale sucker	567					0		
		Longnose sucker	361	638				0		
		Longnose sucker	380					0		
		Longnose sucker	449	1224				0		
		Longnose sucker	461					0		
		Mountain whitefish	321	472	8			0		
		Northern pike	609	1662		Fin Ray	6	0	Yellow	1765
		Northern pike	445	598		Scale	4	0	Yellow	1764
		Northern pikeminnow	406	788				0	Yellow	1763
	ES0213 24/08/2001 51.0									
		Longnose sucker	414	862				0	Yellow	748
		Longnose sucker	416	904				0	Yellow	750
		Longnose sucker	444	1138				0	Yellow	747

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0213 24/08/2001 51.0									
		Longnose sucker	409	864				0	Yellow	749
		Longnose sucker	438	1252				0	Yellow	754
		Longnose sucker	414	762				0	Yellow	753
		Mountain whitefish	374	666				0	Yellow	751
		Mountain whitefish	144	28				0		
		Mountain whitefish	457	1268				0	Yellow	746
		Mountain whitefish	195	72				0		
		Mountain whitefish	412	800				0	Yellow	745
		Mountain whitefish	252	168				0	Yellow	752
		Mountain whitefish	259	188				0	Yellow	756
		Mountain whitefish	250	160				0	Yellow	755
		Mountain whitefish	330	456				0	Yellow	744
		Mountain whitefish	254	160				0	Yellow	757
		Mountain whitefish	187	58				0		
		Mountain whitefish	260	182				0	Yellow	758
		Mountain whitefish	140	18				0		
		Arctic grayling	210	120				0		
		Longnose sucker	400	778				0	Yellow	1768
		Longnose sucker	427	1202				0	Yellow	1769
		Longnose sucker	382	730				0	Yellow	1767
		Longnose sucker	383	760				0	Yellow	1770
		Longnose sucker	447					0	Yellow	1771
		Longnose sucker	270	234				0	Yellow	1766
		Mountain whitefish	189					0		
		Mountain whitefish	104					0		
		Mountain whitefish	212					0		
	ES0214 24/08/2001 50.0									
		Largescale sucker	491	1538				0	Yellow	761
		Largescale sucker	454	1382				0	Yellow	759
		Largescale sucker	169	58				0		
		Largescale sucker	489	1578				0	Yellow	762
		Largescale sucker	121	20				0		
		Largescale sucker	470	1366				0	Yellow	763
		Longnose sucker	136	34				0		
		Longnose sucker	460					0	Yellow	760
		Longnose sucker	138	36				0		
		Longnose sucker	97					0		
		Longnose sucker	172	62				0		
		Longnose sucker	146	30				0		
		Longnose sucker	207	108				0		
		Mountain whitefish	182	54				0		
		Mountain whitefish	173	50				0		
		Mountain whitefish	466	1068				0		
		Mountain whitefish	369	588				0	Yellow	764
		Mountain whitefish	138	20				0		
		Mountain whitefish	154	26				0		
		Mountain whitefish	130	20				0		
		Mountain whitefish	413	934				2	Orange	8844
		Arctic grayling	121					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0214 24/08/2001 50.0									
		Arctic grayling	133					0		
		Largescale sucker	366					0		
		Largescale sucker	509					0		
		Largescale sucker	516					0		
		Largescale sucker	494					0		
		Largescale sucker	357					0		
		Longnose sucker	455					0		
		Longnose sucker	427					0		
		Longnose sucker	414					0		
		Longnose sucker	398					0		
		Longnose sucker	434					0		
		Longnose sucker	383					0		
		Longnose sucker	348					0		
		Longnose sucker	405					0		
		Longnose sucker	395					0		
		Longnose sucker	454					0		
		Longnose sucker	414					0		
		Longnose sucker	471					0		
		Longnose sucker	434					0		
		Longnose sucker	445					0		
		Longnose sucker	446					0		
		Mountain whitefish	150					0		
		Mountain whitefish	198					0		
		Mountain whitefish	357					0		
		White sucker	398					0		
	ES0215 19/10/2001 48.0									
		Mountain whitefish	353					0		
		Mountain whitefish	188					0		
		Mountain whitefish	379					0		
		Mountain whitefish	390					0		
	ES0216 23/08/2001 69.2									
		Arctic grayling	284	254				0	Yellow	605
		Mountain whitefish	370	654				0	Yellow	591
		Mountain whitefish	366	620				0	Yellow	594
		Mountain whitefish	378	664				0	Yellow	595
		Mountain whitefish	407	804				0	Yellow	597
		Mountain whitefish	442	868				0	Yellow	598
		Mountain whitefish	206	94				0		
		Mountain whitefish	445	992				0	Yellow	602
		Mountain whitefish	363					0	Yellow	599
		Mountain whitefish	308	306				0	Yellow	593
		Mountain whitefish	176	58				0		
		Mountain whitefish	443	1068				0	Yellow	601
		Mountain whitefish	279	220				0	Yellow	596
		Mountain whitefish	192	64				0		
		Mountain whitefish	391	692				0	Yellow	592
		Mountain whitefish	358	560				0	Yellow	600
		Mountain whitefish	371	572				0		
		Mountain whitefish	203	80				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0216 23/08/2001 69.2									
		Mountain whitefish	202	76				0		
		Mountain whitefish	203	86				0		
		Mountain whitefish	281	240				0	Yellow	604
		Mountain whitefish	318	418				0	Yellow	603
		Mountain whitefish	192	66				0		
		Mountain whitefish	207	84				0		
		Mountain whitefish	198	72				0		
		Arctic grayling	295	310				0	Yellow	1824
		Arctic grayling	171	58				0		
		Arctic grayling	215	94				0		
		Arctic grayling	242	168				0		
		Arctic grayling	204	94				0		
		Arctic grayling	283	234				0	Yellow	1826
		Arctic grayling	195	90				0		
		Arctic grayling	244	186				0		
		Arctic grayling	196	76				0		
		Arctic grayling	190	76				0		
		Arctic grayling	253	218				0	Yellow	1831
		Arctic grayling	313	388				0	Yellow	1818
		Arctic grayling	145	12				0		
		Arctic grayling	390	670				0		
		Arctic grayling	351	588				0	Yellow	1825
		Arctic grayling	323	424				0	Yellow	1819
		Arctic grayling	296	264				2	Yellow	605
		Bull trout	395	556				0	Yellow	1839
		Bull trout	246	148		Fin Ray	3	0		
		Longnose sucker	350	562				0	Yellow	1838
		Longnose sucker	403	802				0	Yellow	1822
		Longnose sucker	488					0		
		Longnose sucker	352	614				0	Yellow	1827
		Longnose sucker	448	1042				0	Yellow	1828
		Longnose sucker	353	608				0	Yellow	1832
		Longnose sucker	346	452				0	Yellow	1820
		Longnose sucker	351	580				0	Yellow	1840
		Mountain whitefish	211	100				0		
		Mountain whitefish	326	388				0	Yellow	1833
		Mountain whitefish	358	502				0	Yellow	1834
		Mountain whitefish	157	34				0		
		Mountain whitefish	292	220				0	Yellow	1835
		Mountain whitefish	267	224				0	Yellow	1836
		Mountain whitefish	371	528				0	Yellow	1837
		Mountain whitefish	271	210				0	Yellow	1841
		Mountain whitefish	212	98				0		
		Mountain whitefish	304	348				0	Yellow	1842
		Mountain whitefish	183	74				0		
		Mountain whitefish	207	84				0		
		Mountain whitefish	426					0		1829
		Mountain whitefish	431	886				0	Yellow	1821
		Mountain whitefish	358	630				0	Yellow	1823

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0216 23/08/2001 69.2									
		Mountain whitefish	386	628	8			0	Yellow	1830
		Mountain whitefish	357	516				0	Yellow	1843
	ES0217 24/08/2001 58.0									
		Longnose sucker	161	56				0		
		Longnose sucker						0		
		Longnose sucker	259	224				0		
		Mountain whitefish	123	22				0		
		Mountain whitefish	131	22				0		
		Mountain whitefish	352	476				0	Yellow	705
		Mountain whitefish	141	28				0		
		Mountain whitefish	198	76				0		
		Redside shiner	96					0		
		Arctic grayling	411	902				0	Yellow	1718
		Arctic grayling	377	638				2	Yellow	696
		Arctic grayling	127	20				0		
		Bull trout	339	356				0		
		Kokanee	160	42				0		
		Largescale sucker	471	1248				0	Yellow	1719
		Largescale sucker	498	1650				0	Yellow	1720
		Longnose sucker	127	26				0		
		Mountain whitefish	320		8			0	Yellow	1725
		Mountain whitefish	325	346				0	Yellow	1734
		Mountain whitefish	336		8			0	Yellow	1736
		Mountain whitefish	404	628	18			0	Yellow	1733
		Mountain whitefish	320	370	8			0	Yellow	1730
		Mountain whitefish	332	440	8			0	Yellow	1731
		Mountain whitefish	338	430	8			0	Yellow	1729
		Mountain whitefish	324	334	8			0	Yellow	1737
		Mountain whitefish	457	1044	18			0	Yellow	1735
		Mountain whitefish	217	130				0		
		Mountain whitefish	339	462	8			0	Yellow	1745
		Mountain whitefish	254	196	8			0	Yellow	1739
		Mountain whitefish	273	248	8			0	Yellow	1741
		Mountain whitefish	270	206				0	Yellow	1742
		Mountain whitefish	328	396	8			0	Yellow	1744
		Mountain whitefish	330	432	8			0	Yellow	1743
		Mountain whitefish	326	420	8			0	Yellow	1740
		Mountain whitefish	358	514	8			0	Yellow	1746
		Mountain whitefish	354		8			0		
		Mountain whitefish	338	454	8			0	Yellow	1738
		Mountain whitefish	344	436	8			0	Yellow	1727
		Mountain whitefish	380	646	8			0	Yellow	1732
		Mountain whitefish	331	450	8			0	Yellow	1749
		Mountain whitefish	352	474	8			0	Yellow	1750
		Mountain whitefish	335	374	8			0	Yellow	1751
		Mountain whitefish	409	692	18			0	Yellow	1752
		Mountain whitefish	266	214				0	Yellow	1747
		Mountain whitefish	343	460				0	Yellow	1728
		Mountain whitefish	333	394	8			0	Yellow	1722

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 2 Peace River										
	ES0217 24/08/2001 58.0									
		Mountain whitefish	367	580	8			0		
		Mountain whitefish	312					0		
		Mountain whitefish	303	324	8			0	Yellow	1721
		Mountain whitefish	468	1382	18			0	Yellow	1723
		Mountain whitefish	362	486	8			0	Yellow	1724
		Mountain whitefish	295	312				0	Yellow	1748
		Mountain whitefish	373	600	8			0	Yellow	1726
		Redside shiner	88					0		
Zone 3 Halfway River										
	BS0301 22/08/2001 104.0									
		Lake chub	74					0		
		Lake chub	63					0		
		Lake chub	74					0		
		Lake chub	70					0		
		Largescale sucker	302					0		
		Largescale sucker	105					0		
		Northern pikeminnow	160					0		
		Northern pikeminnow	115					0		
		Northern pikeminnow	264					0		
		Redside shiner	79					0		
		Redside shiner	104					0		
		Redside shiner	61					0		
		Redside shiner	67					0		
		Redside shiner	63					0		
		Redside shiner	58					0		
		Redside shiner	65					0		
		Redside shiner	66					0		
		Redside shiner	102					0		
		Redside shiner	114					0		
		Redside shiner	116					0		
		Redside shiner	69					0		
		Redside shiner	63					0		
		Redside shiner	64					0		
		Redside shiner	74					0		
		Redside shiner	84					0		
		Redside shiner	102					0		
		Redside shiner	84					0		
		Redside shiner	91					0		
		Redside shiner	94					0		
		Redside shiner	92					0		
		Redside shiner	61					0		
		Redside shiner	63					0		
		Redside shiner	60					0		
		Redside shiner	94					0		
		Redside shiner	104					0		
		Redside shiner	54					0		
		Redside shiner	121					0		
		Redside shiner	89					0		
		Redside shiner	76					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	BS0301 22/08/2001 104.0									
		Redside shiner	88					0		
		Redside shiner	88					0		
		Redside shiner	89					0		
		Redside shiner	64					0		
		Redside shiner	99					0		
		Redside shiner	61					0		
		Redside shiner	69					0		
		Redside shiner	99					0		
		Redside shiner	82					0		
		Redside shiner	64					0		
		Spottail shiner	72					0		
	BS0302 22/08/2001 106.9									
		Mountain whitefish	50					0		
		Sucker spp.	29					0		
		Largescale sucker	39					4		
		Largescale sucker	35					4		
		Largescale sucker	38					4		
		Longnose sucker	38					4		
		Longnose sucker	38					4		
		Longnose sucker	31					4		
	BS0304 22/08/2001 99.0									
		Sucker spp.	22					0		
		Sucker spp.	21					0		
		Sucker spp.	16					0		
		Arctic grayling	49					0		
		Redside shiner	72					0		
		Spoonhead sculpin	38					0		
	BS0310 22/08/2001 103.4									
		Spottail shiner	48					0		
	BS0311 17/10/2001 87.2									
		Redside shiner	25					0		
	EF0301 22/08/2001 107.1									
		Lake chub	73					0		
		Lake chub	31					0		
		Prickly sculpin	66					0		
		Prickly sculpin	69					0		
		Prickly sculpin	51					0		
		Prickly sculpin	52					0		
		Sculpin spp.	19					0		
		Slimy sculpin	54					0		
		Slimy sculpin	49					4		
		Slimy sculpin	50					0		
		Slimy sculpin	51					0		
		Slimy sculpin	55					0		
	EF0302 22/08/2001 87.2									
		Lake chub	78					0		
		Lake chub	70					0		
		Lake chub	66					0		
		Largescale sucker	143					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	EF0302 22/08/2001 87.2									
		Largescale sucker	159					0		
		Largescale sucker	138					0		
		Largescale sucker	320					0		
		Longnose dace	68					0		
		Longnose dace	81					0		
		Longnose dace	76					0		
		Longnose sucker	187					0		
		Longnose sucker	83					0		
		Longnose sucker	150					0		
		Longnose sucker	148					0		
		Longnose sucker	188					0		
		Longnose sucker	171					0		
		Longnose sucker	90					0		
		Longnose sucker	96					0		
		Longnose sucker	85					0		
		Longnose sucker	119					0		
		Longnose sucker	176					0		
		Northern pike	585			Fin Ray	5	0	Yellow	590
		Northern pikeminnow	224					0		
		Northern pikeminnow	205					0		
		Northern pikeminnow	216					0		
		Northern pikeminnow	194					0		
		Northern pikeminnow	225					0		
		Northern pikeminnow	231					0		
		Northern pikeminnow	203					0		
		Peamouth	159					0		
		Redside shiner	81					0		
		Redside shiner	67					0		
		Redside shiner	85					0		
		Redside shiner	102					0		
		Redside shiner	76					0		
		Redside shiner	91					0		
		Redside shiner	88					0		
		Redside shiner	83					0		
		Spottail shiner	78					0		
		Spottail shiner	82					0		
		Spottail shiner	62					0		
		Spottail shiner	64					0		
		Kokanee	71					0		
	ES0301 20/08/2001 98.0									
		Arctic grayling	299	322	10			0	Yellow	317
		Arctic grayling	337	470	10			0	Yellow	318
		Arctic grayling	306	338	10			0	Yellow	319
		Arctic grayling	308	350	20			0	Yellow	320
		Arctic grayling	301	310	10			0	Yellow	322
		Arctic grayling	187	78				0		
		Mountain whitefish	177	60				0		
		Mountain whitefish	138	26				0		
		Mountain whitefish	201	94				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0301 20/08/2001 98.0									
		Mountain whitefish	253	194				0	Yellow	325
		Mountain whitefish	210	90				0		
		Mountain whitefish	315	292				0	Yellow	321
		Mountain whitefish	248	158				0		
		Mountain whitefish	268	206				0	Yellow	327
		Mountain whitefish	262	198				0	Yellow	326
		Mountain whitefish	206	94				0		
		Mountain whitefish	339	384				0		
		Mountain whitefish	199	70				0		
		Mountain whitefish	69					0		
		Mountain whitefish	263	176				0	Yellow	323
		Mountain whitefish	243	140				0		
		Mountain whitefish	254	200				0	Yellow	328
		Mountain whitefish	242	146				0		
		Rainbow trout	196	82				0		
		Arctic grayling	343	452				0	Yellow	1573
		Arctic grayling	382					0	Yellow	1574
		Arctic grayling	365	602				0	Yellow	1569
		Bull trout	380	630		Fin Ray	4	0	Yellow	1565
		Bull trout	418	696		Fin Ray	4	0	Yellow	1567
		Longnose sucker	389					0	Yellow	1559
		Mountain whitefish	346					0	Yellow	1562
		Mountain whitefish	326					0		
		Mountain whitefish	338					0	Yellow	1560
		Mountain whitefish	335					0	Yellow	1566
		Mountain whitefish	274					0		
		Mountain whitefish	284					0	Yellow	1568
		Mountain whitefish	329					0		
		Mountain whitefish	357					0		
		Mountain whitefish	198	78				0		
		Mountain whitefish	319					0		
		Mountain whitefish	318					0	Yellow	1570
		Mountain whitefish	222	114				0		
		Mountain whitefish	331					0		
		Mountain whitefish	316					0		
		Mountain whitefish	315					0	Yellow	1558
		Mountain whitefish	333					0		
		Mountain whitefish	345					0	Yellow	1571
		Mountain whitefish	336					0	Yellow	1563
		Mountain whitefish	254					0	Yellow	1561
		Mountain whitefish	135					0		
		Mountain whitefish	323					0	Yellow	1564
		Mountain whitefish	200					0		
		Mountain whitefish	307					0	Yellow	1575
		Mountain whitefish	365					0	Yellow	1572
		Mountain whitefish	142	32				0		
		Rainbow trout	402	756				0		
		Rainbow trout	159	52				0		
	ES0302 20/08/2001 95.0									

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0302 20/08/2001 95.0									
		Bull trout	300	256		Fin Ray		0	Yellow	352
		Largescale sucker	428	1038		Fin Ray	11	0	Yellow	329
		Largescale sucker	461	1304		Fin Ray	13	0		
		Largescale sucker	457	1228		Fin Ray	10	0		
		Largescale sucker	192	74		Fin Ray	3	0		
		Largescale sucker	139	44		Fin Ray		0		
		Largescale sucker	441	1174		Fin Ray	10	0		
		Largescale sucker	233	130		Fin Ray	4	0		
		Largescale sucker	267	234		Fin Ray	4	0		
		Largescale sucker	503	1732		Fin Ray	15	0	Yellow	333
		Longnose sucker	400	800		Fin Ray	10	0	Yellow	334
		Longnose sucker	192	82		Fin Ray	3	0		
		Longnose sucker	203	106		Fin Ray	4	0		
		Longnose sucker	173	66				0		
		Longnose sucker	192	106		Fin Ray	3	0		
		Longnose sucker	236	150		Fin Ray		0		
		Longnose sucker	207	110		Fin Ray	3	0		
		Longnose sucker	424	972		Fin Ray	10	0	Yellow	346
		Longnose sucker	311	416		Fin Ray	6	0	Yellow	347
		Longnose sucker	286	260		Fin Ray	5	0	Yellow	344
		Longnose sucker	368	592		Fin Ray	8	0	Yellow	336
		Longnose sucker	461	1180		Fin Ray	12	0	Yellow	332
		Longnose sucker	429	928		Fin Ray	12	0	Yellow	330
		Longnose sucker	185	76				0		
		Longnose sucker	238	146		Fin Ray	4	0		
		Longnose sucker	128	22		Scale	2	0		
		Longnose sucker	163	46				0		
		Longnose sucker	148	50				0		
		Mountain whitefish	422	852				0	Yellow	337
		Mountain whitefish	330	448				0	Yellow	345
		Mountain whitefish	344	462				0	Yellow	341
		Mountain whitefish	281	242				0	Yellow	348
		Mountain whitefish	276	228				0	Yellow	354
		Mountain whitefish	265	220				0	Yellow	353
		Mountain whitefish	328	398				0	Yellow	349
		Mountain whitefish	356	430				0	Yellow	335
		Mountain whitefish	248	166				0		
		Mountain whitefish	135	22				0		
		Mountain whitefish	330	408				0	Yellow	342
		Mountain whitefish	325	364				0	Yellow	351
		Mountain whitefish	205	104				0		
		Mountain whitefish	337	396				0	Yellow	331
		Mountain whitefish	178	60				0		
		Mountain whitefish	244	148				0		
		Mountain whitefish	254	160				0	Yellow	339
		Mountain whitefish	325	376				0	Yellow	338
		Mountain whitefish	291	286				0	Yellow	343
		Mountain whitefish	324	378				0	Yellow	340
		Mountain whitefish	288	274				0	Yellow	350

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0302 20/08/2001 95.0									
		Northern pikeminnow	225	124				0		
		Mountain whitefish	414	852	8			0	Yellow	1557
		Mountain whitefish	277					0		
		Mountain whitefish	349					0		
		Mountain whitefish	431	1098				0	Yellow	1576
		Mountain whitefish	313					0		
		Mountain whitefish	286					0		
		Mountain whitefish	332		8			0	Yellow	1556
		Mountain whitefish	400					0		
		Mountain whitefish	257					0		
		Mountain whitefish	305					0		
		Mountain whitefish	393					0	Yellow	1555
		Mountain whitefish	293					0	Yellow	1554
		Mountain whitefish	293					0		
		Mountain whitefish	368					0		
		Mountain whitefish	385					0	Yellow	1552
		Mountain whitefish	407	784				0	Yellow	1551
		Mountain whitefish	289					0		
		Mountain whitefish	326					0		
		Mountain whitefish	422					0		
		Mountain whitefish	350		8			0		
		Mountain whitefish	338		8			0		
		Mountain whitefish	343		8			0	Yellow	1553
		Mountain whitefish	327					0		
		Mountain whitefish	421					0		
		Mountain whitefish	372					0		
		Mountain whitefish	362		8			0		
		Mountain whitefish	335					0		
		Mountain whitefish	240					0		
		Mountain whitefish	285					0		
		Mountain whitefish	321					0		
		Mountain whitefish	297					0		
		Mountain whitefish	388					0		
		Mountain whitefish	327		8			0		
		Mountain whitefish	342		8			0		
		Mountain whitefish	327					0		
		Mountain whitefish	267					0		
		Mountain whitefish	330		8			0		
		Mountain whitefish	372		8			0		
		Mountain whitefish	393		8			0		
		Mountain whitefish	323		8			0		
		Mountain whitefish	366					0		
		Mountain whitefish	342		8			0		
		Mountain whitefish	294					0		
	ES0303 20/08/2001 93.0									
		Arctic grayling	369	682	20			0	Yellow	360
		Arctic grayling	369	622	20			0	Yellow	356
		Arctic grayling	164	56				0		
		Arctic grayling	273					0	Yellow	357

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0303 20/08/2001 93.0									
		Arctic grayling	129	50				0		
		Arctic grayling	179	64				0		
		Brook Trout	275	224		Fin Ray	3	0	Yellow	358
		Mountain whitefish	194	72				0		
		Mountain whitefish	100	70				0		
		Mountain whitefish	199	80				0		
		Mountain whitefish	205	84				0		
		Mountain whitefish	212	102				0		
		Mountain whitefish	192	68				0		
		Mountain whitefish	320	396				0	Yellow	355
		Mountain whitefish	205	92				0		
		Mountain whitefish	184	68				0		
		Mountain whitefish	213	106				0		
		Mountain whitefish	192	70				0		
		Mountain whitefish	198	70				0		
		Mountain whitefish	201	78				0		
		Prickly sculpin	90					0		
		Rainbow trout	158	50				0		
		Rainbow trout	363					0		
		Rainbow trout	261	210				0	Yellow	359
		Arctic grayling	322	406				0	Yellow	1580
		Arctic grayling	362	594				0	Yellow	1577
		Arctic grayling	403	758				0	Yellow	1578
		Bull trout	373	476		Fin Ray	4	0	Yellow	1582
		Largescale sucker	515					0		
		Largescale sucker	570	2154				0	Yellow	1579
		Largescale sucker	445					0		
		Longnose sucker	354					0		
		Longnose sucker	445					0		
		Longnose sucker	422					0		
		Longnose sucker	458					0		
		Longnose sucker	449					0		
		Longnose sucker	412					0		
		Longnose sucker	404					0		
		Longnose sucker	484					0		
		Mountain whitefish	226					0		
		Mountain whitefish	398					0		
		Mountain whitefish	222	108				0		
		Mountain whitefish	367					0		
		Mountain whitefish	334					0		
		Mountain whitefish	390					0		
		Mountain whitefish	350					0		
		Mountain whitefish	215	90				0		
		Mountain whitefish	136	20				0		
		Mountain whitefish	355					0		
		Mountain whitefish	291					0		
		Mountain whitefish	344					0		
		Mountain whitefish	208	92				0		
		Mountain whitefish	351					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0303 20/08/2001 93.0									
		Mountain whitefish	205	78				0		
		Mountain whitefish	253					0		
		Mountain whitefish	146	28				0		
		Mountain whitefish	381					0		
		Mountain whitefish	391					0		
		Mountain whitefish	335					0		
		Mountain whitefish	383					0		
		Mountain whitefish	208	78				0		
		Mountain whitefish	328					0		
		Rainbow trout	273	242				0	Yellow	1581
	ES0304 20/08/2001 91.4									
		Arctic grayling	280	264				0	Yellow	364
		Arctic grayling	315	394				0	Yellow	365
		Arctic grayling	372	588	10			0	Yellow	366
		Arctic grayling	412	824	10			0	Yellow	367
		Arctic grayling	183	76				0		
		Arctic grayling	178	64				0		
		Longnose sucker	390	776				0	Yellow	361
		Mountain whitefish	130	18				0		
		Mountain whitefish	257	186				0	Yellow	363
		Mountain whitefish	135	24				0		
		Mountain whitefish	121	18				0		
		Mountain whitefish	140	18				0		
		Mountain whitefish	216	88				0		
		Mountain whitefish	136	18				0		
		Mountain whitefish	140	28				0		
		Mountain whitefish	121	20				0		
		Mountain whitefish	183	58				0		
		Mountain whitefish	309	358				0	Yellow	362
		Mountain whitefish	155	36				0		
		Mountain whitefish	181	60				0		
		Mountain whitefish	136	28				0		
		Mountain whitefish	126	26				0		
		Mountain whitefish	127	20				0		
		Mountain whitefish	130	22				0		
		Mountain whitefish	191	72				0		
		Mountain whitefish	126	20				0		
		Mountain whitefish	130	20				0		
		Mountain whitefish	212	84				0		
		Mountain whitefish	131	24				0		
		Rainbow trout	157					0		
		Arctic grayling	393	826				0	Yellow	1585
		Arctic grayling	370	592				0	Yellow	1598
		Arctic grayling	358	622				0	Yellow	1596
		Arctic grayling	354	590				0	Yellow	1604
		Arctic grayling	346	614				0	Yellow	1591
		Bull trout	392	514				0	Yellow	1616
		Longnose sucker	377	730				0	Yellow	1593
		Longnose sucker	436	1130				0	Yellow	1592

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0304 20/08/2001 91.4									
		Longnose sucker	259	60				0	Yellow	1608
		Longnose sucker	349	558				0	Yellow	1599
		Longnose sucker	450	1204				0	Yellow	1607
		Longnose sucker	387	752				0	Yellow	1603
		Longnose sucker	367	626				0	Yellow	1589
		Longnose sucker	389	788				0	Yellow	1605
		Mountain whitefish	329	404				0		
		Mountain whitefish	412	750				0	Yellow	1597
		Mountain whitefish	335	420	8			0	Yellow	1600
		Mountain whitefish	397	778				0	Yellow	1601
		Mountain whitefish	335	435				0	Yellow	1615
		Mountain whitefish	217	100				0		
		Mountain whitefish	223	124				0		
		Mountain whitefish	256	192				0	Yellow	1613
		Mountain whitefish	206	102				0		
		Mountain whitefish	329	420				0	Yellow	1614
		Mountain whitefish	273	212				0	Yellow	1619
		Mountain whitefish	211	106				0		
		Mountain whitefish	156	40				0		
		Mountain whitefish	367	564	8			0	Yellow	1618
		Mountain whitefish	162	54				0		
		Mountain whitefish	418	846	18			0	Yellow	1611
		Mountain whitefish	173	50				0		
		Mountain whitefish	332	426				0	Yellow	1606
		Mountain whitefish	221	118				0		
		Mountain whitefish	220	108				0		
		Mountain whitefish	321	370				0	Yellow	1595
		Mountain whitefish	403	742				0	Yellow	1594
		Mountain whitefish	247	176				0		
		Mountain whitefish	357	522				0		
		Mountain whitefish	302	276				0	Yellow	1586
		Mountain whitefish	346	430				0	Yellow	1612
		Mountain whitefish	357	484				0	Yellow	1590
		Mountain whitefish	346	560				0	Yellow	1584
		Mountain whitefish	267	196				0	Yellow	1602
		Mountain whitefish	340	432				0		
		Mountain whitefish	389	712				0	Yellow	1610
		Mountain whitefish	348	438				0	Yellow	1587
		Mountain whitefish	396	624	17			0	Yellow	1609
		Rainbow trout	193	86				0		
		Rainbow trout	337	472				0	Yellow	1588
		Rainbow trout	324	400				0	Yellow	1617
		Rainbow trout	293	296				0	Yellow	1583
	ES0305 20/08/2001 90.0									
		Bull trout	434	728		Fin Ray		0	Yellow	383
		Kokanee	124	16				0		
		Largescale sucker	474	1448				0	Yellow	369
		Largescale sucker	438	1304				0		
		Largescale sucker	500	1656				0	Yellow	377

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0305 20/08/2001 90.0									
		Largescale sucker	446	1134				0	Yellow	371
		Longnose sucker	264	256				0	Yellow	384
		Longnose sucker	157	44				0		
		Longnose sucker	392	780				0	Yellow	380
		Longnose sucker	409	874				0	Yellow	368
		Mountain whitefish	133	22				0		
		Mountain whitefish	208	96				0		
		Mountain whitefish	254	180				0	Yellow	381
		Mountain whitefish	411	770				0	Yellow	378
		Mountain whitefish	253	152				0	Yellow	385
		Mountain whitefish	134	28				0		
		Mountain whitefish	140	26				0		
		Mountain whitefish	129	20				0		
		Mountain whitefish	327	380				0	Yellow	376
		Mountain whitefish	387	586				0	Yellow	370
		Mountain whitefish	352	496				0	Yellow	382
		Mountain whitefish	137	30				0		
		Mountain whitefish	137	26				0		
		Mountain whitefish	204	84				0		
		Mountain whitefish	188	58				0		
		Mountain whitefish	204	78				0		
		Mountain whitefish	486	1500				0	Yellow	375
		Mountain whitefish	139	24				0		
		Mountain whitefish	338	482				0	Yellow	373
		Mountain whitefish	186	64				0		
		Mountain whitefish	193	76				0		
		Mountain whitefish	207	92				0		
		Mountain whitefish	390	654				0	Yellow	374
		Mountain whitefish	264	220				0	Yellow	372
		Mountain whitefish	201	78				0		
		Mountain whitefish	342	420				0	Yellow	379
		Mountain whitefish	340	410				0		
		Mountain whitefish	134	26				0		
		Mountain whitefish	176	54				0		
		Mountain whitefish	132	22				0		
		Bull trout	365	478				0	Yellow	1634
		Largescale sucker	548	1892				0	Yellow	1625
		Longnose sucker	386	742				0	Yellow	1633
		Longnose sucker	346					0	Yellow	1631
		Longnose sucker	378					0	Yellow	1630
		Longnose sucker	382	602				0	Yellow	1624
		Mountain whitefish	337					0	Yellow	1621
		Mountain whitefish	333					0	Yellow	1628
		Mountain whitefish	219	108				0		
		Mountain whitefish	304					0	Yellow	1632
		Mountain whitefish	389	604				0	Yellow	1626
		Mountain whitefish	360					0		
		Mountain whitefish	193	64				0		
		Mountain whitefish	307					0	Yellow	1635

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0305 20/08/2001 90.0									
		Mountain whitefish	283	252				0	Yellow	1627
		Mountain whitefish	277	252	8			0	Yellow	1623
		Mountain whitefish	315					0		
		Mountain whitefish	357					0	Yellow	1620
		Mountain whitefish	340					0	Yellow	1629
		Mountain whitefish	249					0		
		Rainbow trout	344	514				0	Yellow	1622
	ES0306 21/08/2001 108.0									
		Arctic grayling	164	56				0		
		Arctic grayling	271	230				0	Yellow	391
		Arctic grayling	324	382	20			0	Yellow	387
		Mountain whitefish	135	22				0		
		Mountain whitefish	249	182				0		
		Mountain whitefish	413	852				0	Yellow	389
		Mountain whitefish	123	18				0		
		Mountain whitefish	214	92				0		
		Mountain whitefish	140	26				0		
		Mountain whitefish	204	96				0		
		Mountain whitefish	403	694				0	Yellow	393
		Mountain whitefish	148	30				0		
		Mountain whitefish	143	28				0		
		Mountain whitefish	299	280				0	Yellow	388
		Mountain whitefish	357	502				0	Yellow	386
		Mountain whitefish	138	20				0		
		Mountain whitefish	162	38				0		
		Mountain whitefish	200	82				0		
		Mountain whitefish	130	20				0		
		Mountain whitefish	251					0	Yellow	392
		Mountain whitefish	223	106				0		
		Mountain whitefish	364	490				0	Yellow	394
		Mountain whitefish	220					0		
		Mountain whitefish	264	196				0	Yellow	396
		Mountain whitefish	198	82				0		
		Mountain whitefish	214	104				0		
		Mountain whitefish	142	61				0		
		Mountain whitefish	322	352				0	Yellow	390
		Mountain whitefish	220	100				0		
		Mountain whitefish	203	90				0		
		Mountain whitefish	198	78				0		
		Mountain whitefish	194	78				0		
		Mountain whitefish	180	62				0		
		Mountain whitefish	197	80				0		
		Mountain whitefish	228	138				0		
		Arctic grayling	378	682				0	Yellow	1441
		Arctic grayling	402	806				0	Yellow	1442
		Arctic grayling	255	200				0		
		Arctic grayling	209	108				0		
		Bull trout	447	846		Fin Ray	5	0	Yellow	1463
		Largescale sucker	373	802				0	Yellow	1459

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0306 21/08/2001 108.0									
		Largescale sucker	474	1384				0	Yellow	1436
		Largescale sucker	420	892				0	Yellow	1434
		Largescale sucker	455	1230				0		
		Largescale sucker	467	1510				0	Yellow	1460
		Largescale sucker	475	1640				0	Yellow	1430
		Largescale sucker	537	2058				0	Yellow	1461
		Largescale sucker	494	1728				0		
		Largescale sucker	336	490				0	Yellow	1457
		Largescale sucker	455	1284	9			0	Yellow	1458
		Largescale sucker	453	1224				0	Yellow	1448
		Longnose sucker	367	656				0	Yellow	1435
		Longnose sucker	406	930				0	Yellow	1433
		Longnose sucker	434	669				0		
		Longnose sucker	372	676				0	Yellow	1450
		Longnose sucker	447					0	Yellow	1447
		Longnose sucker	417	936				0	Yellow	1431
		Longnose sucker	479	978				0	Yellow	1432
		Longnose sucker	365	570				0	Yellow	1438
		Longnose sucker	326	446				0	Yellow	1449
		Longnose sucker	418	1006				0	Yellow	1452
		Longnose sucker	381	696				0		
		Longnose sucker	447	1228				0		
		Mountain whitefish	229	124				0		
		Mountain whitefish	258	162				0	Yellow	1439
		Mountain whitefish	337					0	Yellow	1446
		Mountain whitefish	257	198				0	Yellow	1462
		Mountain whitefish	222	130				0		
		Mountain whitefish	271	236				0		
		Mountain whitefish	276	224				0	Yellow	1440
		Mountain whitefish	314	354				0	Yellow	1444
		Mountain whitefish	308	304				0	Yellow	1443
		Mountain whitefish	297	326				0	Yellow	1445
		Mountain whitefish	164	48				0		
		Mountain whitefish	264	48				0		
		Mountain whitefish	267	224				0	Yellow	1456
		Mountain whitefish	307	366				0	Yellow	1453
		Mountain whitefish	152	44				0		
		Northern pikeminnow	439	1074				0	Yellow	1429
		Rainbow trout	481	1062				0	Yellow	1451
		Rainbow trout	313	340				0	Yellow	1437
		Rainbow trout	415	892				0	Yellow	1455
		Rainbow trout	325	376				0	Yellow	1454
	ES0307 21/08/2001 108.0									
		Largescale sucker	541	2158		Fin Ray	17	0	Yellow	397
		Longnose sucker	407	886		Fin Ray	12	0	Yellow	407
		Longnose sucker	427	992		Fin Ray	11	0	Yellow	395
		Longnose sucker	239	144		Fin Ray	4	0		
		Longnose sucker	396	730		Fin Ray	8	0	Yellow	398
		Mountain whitefish	360	586				0	Yellow	421

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0307 21/08/2001 108.0									
		Mountain whitefish	310	358				0	Yellow	405
		Mountain whitefish	418	856				0	Yellow	406
		Mountain whitefish	312	396				0		
		Mountain whitefish	311	322				0	Yellow	414
		Mountain whitefish	324	406				0	Yellow	429
		Mountain whitefish	354	478				0	Yellow	410
		Mountain whitefish	300	344				0	Yellow	431
		Mountain whitefish	280	244				0	Yellow	411
		Mountain whitefish	334	440				0	Yellow	404
		Mountain whitefish	317	332				0	Yellow	413
		Mountain whitefish	337	432				0	Yellow	408
		Mountain whitefish	376	614				0	Yellow	409
		Mountain whitefish	180	62				0		
		Mountain whitefish	226	120				0		
		Mountain whitefish	312	326				0	Yellow	427
		Mountain whitefish	248	152				0		
		Mountain whitefish	293	272				0	Yellow	430
		Mountain whitefish	258	172				0	Yellow	441
		Mountain whitefish	372	542				0	Yellow	434
		Mountain whitefish	264	202				0	Yellow	444
		Mountain whitefish	137	24				0		
		Mountain whitefish	310	298				0	Yellow	416
		Mountain whitefish	378	626				0	Yellow	399
		Mountain whitefish	279	224				0	Yellow	445
		Mountain whitefish	274	210				0	Yellow	432
		Mountain whitefish	149	32				0		
		Mountain whitefish	244	156				0		
		Mountain whitefish	136	22				0		
		Mountain whitefish	271	202				0	Yellow	437
		Mountain whitefish	274	210				0	Yellow	443
		Mountain whitefish	249	154				0		
		Mountain whitefish	202	82				0		
		Mountain whitefish	201	76				0		
		Mountain whitefish	211	82				0		
		Mountain whitefish	134	20				0		
		Mountain whitefish	150	24				0		
		Mountain whitefish	218	92				0		
		Mountain whitefish	276	228				0	Yellow	415
		Mountain whitefish	252	174				0	Yellow	442
		Mountain whitefish	136	24				0		
		Mountain whitefish	331	400				0	Yellow	435
		Mountain whitefish	310	288				0	Yellow	436
		Mountain whitefish	301					0		
		Mountain whitefish	314	346				0	Yellow	426
		Mountain whitefish	314					0	Yellow	401
		Mountain whitefish	325	324				0	Yellow	400
		Mountain whitefish	326	404				0	Yellow	422
		Mountain whitefish	342	460				0	Yellow	425
		Mountain whitefish	202	82				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0307 21/08/2001 108.0									
		Mountain whitefish	354	460				0	Yellow	424
		Mountain whitefish	337	462				0	Yellow	417
		Mountain whitefish	315	332				0	Yellow	418
		Mountain whitefish	314	362				0	Yellow	419
		Mountain whitefish	371	608				0	Yellow	428
		Mountain whitefish	333	376				0	Yellow	420
		Mountain whitefish	306	356				0	Yellow	412
		Mountain whitefish	344	512				0	Yellow	402
		Mountain whitefish	427	830				0	Yellow	403
		Mountain whitefish	244	160				0		
		Mountain whitefish	335	434				0	Yellow	423
		Mountain whitefish						0		
		Mountain whitefish	387	552				0	Yellow	440
		Mountain whitefish	279	228				0	Yellow	439
		Mountain whitefish	192					0		
		Mountain whitefish	269	184				0	Yellow	438
		Mountain whitefish	202	80				0		
		Mountain whitefish	188	64				0		
		Mountain whitefish	197	74				0		
		Rainbow trout	425	878				0	Yellow	433
		Largescale sucker	492	1478				0	Yellow	1476
		Largescale sucker	288	312				0	Yellow	1480
		Mountain whitefish	323	384				0	Yellow	1468
		Mountain whitefish	346	424				0	Yellow	1472
		Mountain whitefish	328	436				0	Yellow	1473
		Mountain whitefish	152	32				0		
		Mountain whitefish	220	102				0		
		Mountain whitefish	312	338				0	Yellow	1465
		Mountain whitefish	215	122				0		
		Mountain whitefish	250	194				0	Yellow	1477
		Mountain whitefish	297	314				0	Yellow	1478
		Mountain whitefish	292	290				0	Yellow	1470
		Mountain whitefish	343	492				0	Yellow	1469
		Mountain whitefish	304	352				0	Yellow	1474
		Mountain whitefish	346	462				0	Yellow	1481
		Mountain whitefish	316	377				0	Yellow	1482
		Mountain whitefish	260	210				0	Yellow	1483
		Mountain whitefish	338	532				0	Yellow	1484
		Mountain whitefish	284	258				0	Yellow	1485
		Mountain whitefish	364	542				0	Yellow	1486
		Mountain whitefish	145	32				0		
		Mountain whitefish	382	634				0	Yellow	1479
		Mountain whitefish	305	322				0	Yellow	1467
		Mountain whitefish	345	408				0	Yellow	1464
		Mountain whitefish	257	216				0	Yellow	1475
		Mountain whitefish	332	386				0	Yellow	1471
		Mountain whitefish	151	32				0		
		Northern pike	316	412				0	Yellow	1466
	ES0308 21/08/2001 106.6									

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0308 21/08/2001 106.6									
		Longnose sucker	101					0		
		Redside shiner	94					0		
		Redside shiner	96					0		
		Redside shiner	99					0		
		Longnose sucker	173	62				0		
		Longnose sucker	399	772				0	Yellow	1488
		Mountain whitefish	334	494				0	Yellow	1491
		Mountain whitefish	347	544				0		
		Mountain whitefish	353	490				0	Yellow	1487
		Mountain whitefish	215	110				0		
		Mountain whitefish	272	208				0	Yellow	1489
		Mountain whitefish	304	308				0	Yellow	1492
		Mountain whitefish	313	408				0	Yellow	1490
	ES0309 21/08/2001 102.0									
		Burbot	646	1392				0	Yellow	462
		Largescale sucker	456	1260		Fin Ray	12	0	Yellow	448
		Largescale sucker	500	1460		Fin Ray	16	0		
		Largescale sucker	438	1052		Fin Ray	12	0	Yellow	451
		Largescale sucker	194	88		Fin Ray	3	0		
		Largescale sucker	464	1236		Fin Ray	13	0	Yellow	452
		Largescale sucker	298	318		Fin Ray	5	0	Yellow	464
		Largescale sucker	443	1002		Fin Ray	12	0	Yellow	459
		Largescale sucker	523	1678		Fin Ray	15	0	Yellow	457
		Largescale sucker	432	940		Fin Ray	11	0	Yellow	455
		Longnose sucker	365	654		Fin Ray	8	0	Yellow	460
		Longnose sucker	353	494		Fin Ray	9	0	Yellow	456
		Longnose sucker	383	656		Fin Ray	6	0	Yellow	463
		Longnose sucker	391	764		Fin Ray	8	0	Yellow	449
		Longnose sucker	372	752		Fin Ray	9	0	Yellow	454
		Longnose sucker	417	894		Fin Ray	9	0	Yellow	453
		Longnose sucker	374	524		Fin Ray	7	0	Yellow	465
		Longnose sucker	335			Fin Ray	7	0	Yellow	446
		Longnose sucker	385	764		Fin Ray	10	0	Yellow	461
		Longnose sucker	397	752		Fin Ray	8	0	Yellow	447
		Longnose sucker	418	964		Fin Ray	12	0	Yellow	458
		Longnose sucker	428	930		Fin Ray	13	0	Yellow	450
		Longnose sucker	398			Fin Ray	12	0		
		Mountain whitefish	178	56				0		
		Mountain whitefish	117	14				0		
		Mountain whitefish	252	180				0	Yellow	466
		Mountain whitefish	315	334				0	Yellow	467
		Mountain whitefish	326	396				0	Yellow	1511
		Mountain whitefish	337	432	8			0	Yellow	1512
		Mountain whitefish	281	224				0	Yellow	1513
		Mountain whitefish	304	356				0	Yellow	1515
		Mountain whitefish	264	184				0	Yellow	1516
		Mountain whitefish	324	394				0	Yellow	1517
		Mountain whitefish	310	366	8			0	Yellow	1518
		Mountain whitefish	331					0	Yellow	1519

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0309 21/08/2001 102.0									
		Mountain whitefish	318		8			0	Yellow	1520
		Mountain whitefish	353		8			0	Yellow	1521
		Mountain whitefish	344	468				0	Yellow	1493
		Mountain whitefish	301	274				0	Yellow	1500
		Mountain whitefish	314	390				0		
		Mountain whitefish	368	544				0	Yellow	1506
		Mountain whitefish	358					0	Yellow	1522
		Mountain whitefish	303		8			0	Yellow	1523
		Mountain whitefish	306					0	Yellow	1524
		Mountain whitefish	319	352				0	Yellow	1505
		Mountain whitefish	328					0		
		Mountain whitefish	342		8			0		
		Mountain whitefish	392	718				0	Yellow	1494
		Mountain whitefish	412	716	8			0	Yellow	1495
		Mountain whitefish	296		8			0		
		Mountain whitefish	296					0		
		Mountain whitefish	363		8			0		
		Mountain whitefish	324	404				0	Yellow	1496
		Mountain whitefish	395	560				0		
		Mountain whitefish	372	666				0	Yellow	1497
		Mountain whitefish	354	432				0	Yellow	1498
		Mountain whitefish	373	612				0	Yellow	1499
		Mountain whitefish	242					0		
		Mountain whitefish	296		8			0		
		Mountain whitefish	387	628				0	Yellow	1509
		Mountain whitefish	300	312				0	Yellow	1514
		Mountain whitefish	270					0	Yellow	1525
		Mountain whitefish	286	212				0	Yellow	1502
		Mountain whitefish	306	322	8			0	Yellow	1503
		Mountain whitefish	331	474	8			0	Yellow	1504
		Mountain whitefish	284	286				0	Yellow	1510
		Mountain whitefish	258	164				0	Yellow	1501
		Mountain whitefish	305	306	8			0	Yellow	1507
		Mountain whitefish	380					0		
		Mountain whitefish	316	378				0	Yellow	1508
	ES0310 21/08/2001 99.0									
		Bull trout	299	252		Fin Ray		0	Yellow	489
		Longnose sucker	195			Scale	3	0		
		Longnose sucker	188					0		
		Longnose sucker	183					0		
		Longnose sucker	393					0	Yellow	468
		Longnose sucker	355					0	Yellow	481
		Longnose sucker	188			Scale	3	0		
		Longnose sucker	413					0	Yellow	469
		Longnose sucker	425					0	Yellow	471
		Longnose sucker	384					0	Yellow	482
		Longnose sucker	278					0	Yellow	476
		Longnose sucker	210					0		
		Longnose sucker	405					0	Yellow	472

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0310 21/08/2001 99.0									
		Longnose sucker	157			Scale	2	0		
		Mountain whitefish	188					0		
		Mountain whitefish	358					0	Yellow	480
		Mountain whitefish	120					0		
		Mountain whitefish	205					0		
		Mountain whitefish	336					0	Yellow	483
		Mountain whitefish	131					0		
		Mountain whitefish	345					0	Yellow	485
		Mountain whitefish	275					0	Yellow	479
		Mountain whitefish	363					0	Yellow	474
		Mountain whitefish	285					0	Yellow	488
		Mountain whitefish	374					0	Yellow	487
		Mountain whitefish	227					0		
		Mountain whitefish	189					0		
		Mountain whitefish	379					0	Yellow	478
		Mountain whitefish	322					0	Yellow	486
		Mountain whitefish	375					0	Yellow	477
		Mountain whitefish	387					0	Yellow	475
		Mountain whitefish	377					0	Yellow	484
		Mountain whitefish	139					0		
		Mountain whitefish	323					0	Yellow	473
		Mountain whitefish	402					0	Yellow	470
		Mountain whitefish	245					0		
		Mountain whitefish	348					0	Yellow	1535
		Mountain whitefish	340					0	Yellow	1541
		Mountain whitefish	272					0	Yellow	1539
		Mountain whitefish	319					0		
		Mountain whitefish	319					0	Yellow	1544
		Mountain whitefish	336		8			0	Yellow	1542
		Mountain whitefish	340					0	Yellow	1526
		Mountain whitefish	322					0	Yellow	1527
		Mountain whitefish	446	994	8			0	Yellow	1528
		Mountain whitefish	304		8			0	Yellow	1537
		Mountain whitefish	334					0	Yellow	1545
		Mountain whitefish	312					0		
		Mountain whitefish	310		8			0	Yellow	1540
		Mountain whitefish	325					0		
		Mountain whitefish	295					0	Yellow	1547
		Mountain whitefish	351					0	Yellow	1538
		Mountain whitefish	300					0	Yellow	1550
		Mountain whitefish	248					0		
		Mountain whitefish	335					0	Yellow	1549
		Mountain whitefish	325		8			0	Yellow	1548
		Mountain whitefish	369					0	Yellow	1529
		Mountain whitefish	342					0	Yellow	1546
		Mountain whitefish	347					0		
		Mountain whitefish	374		8			0	Yellow	1543
		Mountain whitefish	336					0	Yellow	1533
		Mountain whitefish	212					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0310 21/08/2001 99.0									
		Mountain whitefish	270					0		
		Mountain whitefish	421	844				0	Yellow	1536
		Mountain whitefish	372		8			0		
		Mountain whitefish	313					0		
		Mountain whitefish	299					0		
		Mountain whitefish	322		8			0	Yellow	1534
		Mountain whitefish	311					0	Yellow	1532
		Mountain whitefish	332					0	Yellow	1531
		Mountain whitefish	369					0	Yellow	1530
	ES0311 21/08/2001 87.0									
		Bull trout	304	280		Fin Ray		0	Yellow	504
		Bull trout	498	1800		Fin Ray		0	Yellow	490
		Longnose sucker	385					0	Yellow	501
		Mountain whitefish	409					0	Yellow	496
		Mountain whitefish	271					0	Yellow	516
		Mountain whitefish	329					0	Yellow	505
		Mountain whitefish	282					0	Yellow	515
		Mountain whitefish	364					0	Yellow	494
		Mountain whitefish	294					0	Yellow	508
		Mountain whitefish	282					0	Yellow	511
		Mountain whitefish	256					0	Yellow	525
		Mountain whitefish	359					0	Yellow	510
		Mountain whitefish	402					0	Yellow	503
		Mountain whitefish	422	926				0	Yellow	491
		Mountain whitefish	424					0	Yellow	509
		Mountain whitefish	345					0	Yellow	495
		Mountain whitefish	249					0		
		Mountain whitefish	180					0		
		Mountain whitefish	374					0	Yellow	502
		Mountain whitefish	295					0	Yellow	512
		Mountain whitefish	331					0	Yellow	497
		Mountain whitefish	286					0	Yellow	513
		Mountain whitefish	387					0	Yellow	514
		Mountain whitefish						0		
		Mountain whitefish	363					0	Yellow	493
		Mountain whitefish	186					0		
		Mountain whitefish	266					0	Yellow	524
		Mountain whitefish	84					0		
		Mountain whitefish	96					0		
		Mountain whitefish	271					0	Yellow	522
		Mountain whitefish	249					0		
		Mountain whitefish	291					0	Yellow	521
		Mountain whitefish	338					0	Yellow	519
		Mountain whitefish	291					0	Yellow	518
		Mountain whitefish	396					0	Yellow	517
		Mountain whitefish	333					0	Yellow	506
		Mountain whitefish	323					0	Yellow	500
		Mountain whitefish	202					0		
		Mountain whitefish	272					0	Yellow	498

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0311 21/08/2001 87.0									
		Mountain whitefish	336					0	Yellow	492
		Mountain whitefish	399					0	Yellow	499
		Mountain whitefish	144					0		
		Mountain whitefish	396					0	Yellow	507
		Bull trout	385	520				0	Yellow	1654
		Bull trout	518	1130		Fin Ray	5	0	Yellow	1655
		Largescale sucker	180	70				0		
		Longnose sucker	447	1058				0	Yellow	1641
		Longnose sucker	370	652				0	Yellow	1644
		Mountain whitefish	460	1106				0	Yellow	1642
		Mountain whitefish	422					0	Yellow	1643
		Mountain whitefish	271	204				0	Yellow	1651
		Mountain whitefish	312	302				0	Yellow	1653
		Mountain whitefish	190	66				0		
		Mountain whitefish	207	94				0		
		Mountain whitefish	380	550				0	Yellow	1652
		Mountain whitefish	294	256	8			0	Yellow	1647
		Mountain whitefish	160	36				0		
		Mountain whitefish	244	152				0		
		Mountain whitefish	440	1110				0	Yellow	1645
		Mountain whitefish	163	42				0		
		Mountain whitefish	354	514				0	Yellow	1649
		Mountain whitefish	256	172				0	Yellow	1650
		Mountain whitefish	294	228	8			0	Yellow	1648
		Mountain whitefish	335	442				0	Yellow	1646
	ES0312 21/08/2001 84.0									
		Arctic grayling	355	556	10			0	Yellow	560
		Arctic grayling	393		10			0	Yellow	577
		Arctic grayling	357	520	10			0	Yellow	561
		Arctic grayling	272	260				0	Yellow	530
		Arctic grayling	355	552	10			0	Yellow	533
		Bull trout	276	186				0	Yellow	570
		Bull trout	153	34		Scale	2	0		
		Bull trout	349	412		Fin Ray		0	Yellow	585
		Bull trout	310	322		Fin Ray		0	Yellow	586
		Largescale sucker	124	22		Scale	2	0		
		Longnose sucker	413					0	Yellow	549
		Longnose sucker	321					0	Yellow	532
		Longnose sucker	344					0	Yellow	547
		Longnose sucker	397					0	Yellow	562
		Longnose sucker	401					0	Yellow	581
		Longnose sucker	230					0		
		Longnose sucker	245					0		
		Longnose sucker	201					0		
		Longnose sucker	143					0		
		Longnose sucker	260					0	Yellow	559
		Longnose sucker	339					0	Yellow	558
		Mountain whitefish	274					0	Yellow	587
		Mountain whitefish	337					0	Yellow	543

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0312 21/08/2001 84.0									
		Mountain whitefish	250					0	Yellow	544
		Mountain whitefish	354					0	Yellow	545
		Mountain whitefish	317					0	Yellow	548
		Mountain whitefish	380					0	Yellow	550
		Mountain whitefish	300					0	Yellow	539
		Mountain whitefish	357					0	Yellow	568
		Mountain whitefish	269					0	Yellow	557
		Mountain whitefish	329					0	Yellow	540
		Mountain whitefish	357					0	Yellow	552
		Mountain whitefish	345					0	Yellow	529
		Mountain whitefish	353					0	Yellow	531
		Mountain whitefish	404					0	Yellow	556
		Mountain whitefish	242					0		
		Mountain whitefish	351					0	Yellow	555
		Mountain whitefish	291					0	Yellow	553
		Mountain whitefish	167					0		
		Mountain whitefish	393					0	Yellow	554
		Mountain whitefish	271					0	Yellow	542
		Mountain whitefish	448	1290				0	Yellow	528
		Mountain whitefish	247					0		
		Mountain whitefish	192					0		
		Mountain whitefish	309					0	Yellow	535
		Mountain whitefish	359					0	Yellow	536
		Mountain whitefish	325					0	Yellow	537
		Mountain whitefish	417					0	Yellow	538
		Mountain whitefish	356					0	Yellow	546
		Mountain whitefish	357					0	Yellow	551
		Mountain whitefish	311					0	Yellow	541
		Mountain whitefish	187					0		
		Mountain whitefish	183	82				0		
		Mountain whitefish	203					0		
		Mountain whitefish	257					0	Yellow	565
		Mountain whitefish	431					0	Yellow	563
		Mountain whitefish	257					0	Yellow	567
		Mountain whitefish	246					0		
		Mountain whitefish	197					0		
		Mountain whitefish	195					0		
		Mountain whitefish	250					0	Yellow	576
		Mountain whitefish	325					0	Yellow	564
		Mountain whitefish	252					0	Yellow	575
		Mountain whitefish	253					0	Yellow	569
		Mountain whitefish	132					0		
		Mountain whitefish	193					0		
		Mountain whitefish	255					0	Yellow	571
		Mountain whitefish	184					0		
		Mountain whitefish	261					0	Yellow	572
		Mountain whitefish	307					0	Yellow	573
		Mountain whitefish	186					0		
		Mountain whitefish	286					0	Yellow	574

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0312 21/08/2001 84.0									
		Mountain whitefish	262					0	Yellow	579
		Mountain whitefish	286					0	Yellow	580
		Mountain whitefish	354					0	Yellow	527
		Mountain whitefish	253					0	Yellow	583
		Mountain whitefish	276					0	Yellow	566
		Mountain whitefish	268					0	Yellow	578
		Mountain whitefish	255					0	Yellow	584
		Mountain whitefish	205					0		
		Mountain whitefish	342					0	Yellow	582
		Mountain whitefish	267					0	Yellow	566
		Mountain whitefish	204					0		
		Mountain whitefish	208					0		
		Mountain whitefish	211					0		
		Mountain whitefish	195					0		
		Mountain whitefish	258					0	Yellow	589
		Mountain whitefish	256					0	Yellow	588
		Mountain whitefish	241					0		
		Mountain whitefish	204					0		
		Northern pike	605	1574		Fin Ray	4	0	Yellow	534
		Rainbow trout	213	112				0		
		Arctic grayling	315					0	Yellow	1656
		Arctic grayling	364	610				0	Yellow	1658
		Arctic grayling	361	212				0	Yellow	1684
		Bull trout	381	600				0	Yellow	1688
		Bull trout	417	662				0	Yellow	1687
		Bull trout	375	488		Fin Ray	5	0	Yellow	1683
		Bull trout	276	214		Fin Ray	2	0	Yellow	1673
		Bull trout	192	68		Fin Ray	2	0		
		Largescale sucker	495					0	Yellow	1668
		Longnose sucker	457					0	Yellow	1670
		Longnose sucker	393	784				0	Yellow	1680
		Longnose sucker	417					0	Yellow	1660
		Longnose sucker	393					0	Yellow	1661
		Longnose sucker	369					0	Yellow	1669
		Longnose sucker	410					0	Yellow	1678
		Longnose sucker	378					0	Yellow	1682
		Longnose sucker	280	244				0		
		Longnose sucker	339	490				0	Yellow	1677
		Longnose sucker	371					0	Yellow	1667
		Longnose sucker	341	550				0		
		Mountain whitefish	261					0	Yellow	1689
		Mountain whitefish	198	76				0		
		Mountain whitefish	266					2	Yellow	567
		Mountain whitefish	459	1094				0	Yellow	1657
		Mountain whitefish	381	646				0	Yellow	1659
		Mountain whitefish	402					0	Yellow	1662
		Mountain whitefish	380	638				0	Yellow	1663
		Mountain whitefish	400	698				0	Yellow	1664
		Mountain whitefish	348					0	Yellow	1665

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	ES0312 21/08/2001 84.0									
		Mountain whitefish	417	962				0	Yellow	1666
		Mountain whitefish	393	708				0	Yellow	1679
		Mountain whitefish	283		17			0	Yellow	1694
		Mountain whitefish	277		8			0	Yellow	1686
		Mountain whitefish	411	828				0	Yellow	1693
		Mountain whitefish	205					0		
		Mountain whitefish	200					0		
		Mountain whitefish	267					0		
		Mountain whitefish	153					0		
		Mountain whitefish	327		8			0	Yellow	1676
		Mountain whitefish	298					0	Yellow	1690
		Mountain whitefish						0		
		Mountain whitefish	274					0	Yellow	1691
		Mountain whitefish	247					0		
		Mountain whitefish	152					0		
		Mountain whitefish	212					0		
		Mountain whitefish	293					2	Yellow	553
		Mountain whitefish	349					0	Yellow	1671
		Mountain whitefish	429	916				0	Yellow	1674
		Mountain whitefish	150					0		
		Mountain whitefish	267					0	Yellow	1692
		Mountain whitefish	332					0	Yellow	1675
		Mountain whitefish	334		8			0		
		Mountain whitefish	287					0	Yellow	1672
		Mountain whitefish	142	32				0		
		Mountain whitefish	420	806				0	Yellow	1681
		Mountain whitefish	387					0	Yellow	1685
		Mountain whitefish	303					0		
		Mountain whitefish	163					0		
	ES0313 21/08/2001 87.3									
		Largescale sucker	468					0		
		Longnose sucker	186					0		
		Longnose sucker	195					0		
		Mountain whitefish	252					0	Yellow	523
		Mountain whitefish	255					0	Yellow	526
		Mountain whitefish	311					0	Yellow	520
		Mountain whitefish	249					0		
		Mountain whitefish	124					0		
		Mountain whitefish	242					0		
		Mountain whitefish	220					0		
		Longnose sucker	406	866				0	Yellow	1639
		Longnose sucker	419	920				0	Yellow	1636
		Longnose sucker	393	826				0	Yellow	1638
		Mountain whitefish	406	668				0	Yellow	1640
		Mountain whitefish	416	738				0	Yellow	1637
	GN0301 16/10/2001 107.0									
		Arctic grayling	335					0		
		Longnose sucker	206					0		
		Longnose sucker	380					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 3 Halfway River										
	GN0301 16/10/2001 107.0									
		Mountain whitefish	97					0		
	GN0302 17/10/2001 99.0									
		Bull trout	515					0		
		Largescale sucker	216					0		
		Mountain whitefish	349					0		
		Mountain whitefish	387					0		
Zone 4 Peace River										
	BS0401 14/10/2001 143.1									
		Kokanee	75					0		
		Kokanee	71					0		
		Kokanee	71					0		
	BS0402 19/08/2001 136.5									
		Longnose sucker	248					0		
		Kokanee	76					0		
		Kokanee	68					0		
		Kokanee	77					0		
		Kokanee	69					0		
		Kokanee	62					0		
		Kokanee	72					0		
		Kokanee	67					0		
		Kokanee	72					0		
		Kokanee	63					0		
		Kokanee	66					0		
		Kokanee	65					0		
		Kokanee	64					0		
	BS0404 19/08/2001 128.7									
		Largescale sucker	80					0		
		Longnose sucker	128					0		
		Longnose sucker	127					0		
		Longnose sucker	99					0		
		Northern pikeminnow	201					0		
		Northern pikeminnow	95					0		
		Northern pikeminnow	100					0		
		Northern pikeminnow	107					0		
		Northern pikeminnow	102					0		
		Northern pikeminnow	100					0		
		Northern pikeminnow	146					0		
		Northern pikeminnow	71					0		
		Redside shiner	84					0		
		Redside shiner	104					0		
		Redside shiner	84					0		
		Redside shiner	72					0		
		Redside shiner	101					0		
		Redside shiner	98					0		
		Redside shiner	92					0		
		Redside shiner	80					0		
		Redside shiner	97					0		
		Redside shiner	58					0		
		Redside shiner	64					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	BS0404 19/08/2001 128.7									
		Redside shiner	59					0		
		Redside shiner	56					0		
		Redside shiner	64					0		
		Redside shiner	61					0		
		Redside shiner	81					0		
		Redside shiner	81					0		
		Redside shiner	97					0		
		Redside shiner	82					0		
		Redside shiner	84					0		
		Redside shiner	108					0		
		Redside shiner	74					0		
		Redside shiner	65					0		
		Redside shiner	61					0		
		Redside shiner	117					0		
		Redside shiner	115					0		
		Redside shiner	86					0		
		Redside shiner	54					0		
		Redside shiner	87					0		
		Redside shiner	81					0		
		Redside shiner	80					0		
		Redside shiner	82					0		
		Redside shiner	66					0		
		Redside shiner	103					0		
		Redside shiner	69					0		
		Redside shiner	76					0		
		Redside shiner	59					0		
		Redside shiner	56					0		
		Redside shiner	88					0		
		Redside shiner	95					0		
		Redside shiner	81					0		
		Redside shiner	61					0		
		Redside shiner	81					0		
		Redside shiner	64					0		
		Redside shiner	65					0		
		Redside shiner	84					0		
		Redside shiner	86					0		
		Redside shiner	56					0		
		Redside shiner	79					0		
		Redside shiner	84					0		
		Redside shiner	78					0		
		Redside shiner	95					0		
		Redside shiner	71					0		
		Redside shiner	96					0		
		Redside shiner	63					0		
		Redside shiner	63					0		
		Redside shiner	78					0		
		Redside shiner	60					0		
		Redside shiner	100					0		
		Redside shiner	72					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	BS0404 19/08/2001 128.7									
		Redside shiner	86					0		
		Redside shiner	58					0		
	BS0405 14/10/2001 126.1									
		Mountain whitefish	81					0		
	BS0407 19/08/2001 131.2									
		Longnose sucker	67					0		
		Longnose sucker	102					0		
		Longnose sucker	76					0		
		Mountain whitefish	59					0		
		Mountain whitefish	43					0		
		Mountain whitefish	43					0		
		Mountain whitefish	63					0		
		Sculpin spp.	14					0		
		Spoonhead sculpin	36					0		
		Spoonhead sculpin	29					0		
		Spoonhead sculpin	26					0		
		Sucker spp.	29					0		
		Sucker spp.	35					0		
		Sucker spp.	24					0		
		Sucker spp.	22					0		
		Sucker spp.	48					0		
		Sucker spp.	34					0		
		Sucker spp.	31					0		
		Sucker spp.	27					0		
		Sucker spp.	25					0		
		Sucker spp.	31					0		
		Sucker spp.	34					0		
		Sucker spp.	38					0		
		Sucker spp.	28					0		
		Kokanee	73					0		
		Kokanee	70					0		
		Kokanee	75					0		
		Kokanee	75					0		
		Kokanee	61			Scale	0	0		
		Kokanee	82					0		
		Kokanee	74					0		
		Kokanee	67					0		
		Kokanee	91			Scale	0	0		
		Kokanee	71					0		
		Kokanee	60					0		
		Kokanee	61					0		
		Kokanee	72					0		
		Kokanee	63					0		
		Kokanee	82					0		
		Kokanee	64					0		
		Kokanee	83					0		
		Spoonhead sculpin	24					0		
		Spoonhead sculpin	31					0		
		Sucker spp.	40					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	BS0407 19/08/2001 131.2									
		Sucker spp.	22					0		
		Sucker spp.	35					0		
		Sucker spp.	36					0		
		Sucker spp.	22					0		
		Sucker spp.	35					0		
		Sucker spp.	41					0		
	EF0401 19/08/2001 143.1									
		Longnose dace	58					0		
		Longnose dace	100					0		
		Longnose dace	59					0		
		Longnose dace	99					0		
		Longnose dace	78					0		
		Longnose sucker	137					0		
		Longnose sucker	165					0		
		Longnose sucker	132					0		
		Longnose sucker	104					0		
		Mountain whitefish	74					0		
		Prickly sculpin	85					0		
		Prickly sculpin	61					0		
		Prickly sculpin	57					0		
		Prickly sculpin	52					0		
		Prickly sculpin	75					0		
		Prickly sculpin	61					0		
		Prickly sculpin	59					0		
		Prickly sculpin	69					0		
		Prickly sculpin	86					0		
		Prickly sculpin	50					0		
		Rainbow trout	131					0		
		Slimy sculpin	62					0		
		Slimy sculpin	84					0		
		Slimy sculpin	59					0		
		Kokanee	155					0		
		Kokanee	67					0		
		Kokanee	74					0		
		Kokanee	118					0		
		Longnose sucker	111					0		
		Prickly sculpin	103					0		
		Rainbow trout	180					0		
		Rainbow trout	194					0		
		Rainbow trout	65					0		
		Rainbow trout	42					0		
		Slimy sculpin	74					0		
	EF0402 19/08/2001 136.6									
		Longnose sucker	177					0		
		Longnose sucker	225					0		
		Longnose sucker	226					0		
		Northern pikeminnow	180					0		
		Northern pikeminnow	24					4		
		Redside shiner	88					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	EF0402 19/08/2001 136.6									
		Redside shiner	88					0		
		Redside shiner	86					0		
		Redside shiner	79					0		
		Redside shiner	72					0		
		Redside shiner	66					0		
		Redside shiner	88					0		
		Redside shiner	76					0		
		Redside shiner	66					0		
		Slimy sculpin	38					4		
		Bull trout	223					0		
		Kokanee	86					0		
		Kokanee	161					0		
		Kokanee	167					0		
		Kokanee	84					0		
		Kokanee	67					0		
		Kokanee	76					0		
		Longnose sucker	104					0		
		Longnose sucker	93					0		
		Longnose sucker	115					0		
		Mountain whitefish	84					0		
		Mountain whitefish	102					0		
		Redside shiner	94					0		
		Slimy sculpin	44					0		
		Slimy sculpin	76					0		
	EF0403 19/08/2001 128.9									
		Lake chub	72					0		
		Largescale sucker	206					0		
		Largescale sucker	308					0		
		Largescale sucker	326					0		
		Largescale sucker	356					0		
		Largescale sucker	242					0		
		Longnose dace	85					0		
		Longnose dace	62					0		
		Longnose dace	59					0		
		Longnose sucker	196					0		
		Longnose sucker	144					0		
		Longnose sucker	237					0		
		Longnose sucker	257					0		
		Longnose sucker	212					0		
		Longnose sucker	157					0		
		Longnose sucker	136					0		
		Longnose sucker	101					0		
		Longnose sucker	149					0		
		Longnose sucker	87					0		
		Longnose sucker	220					0		
		Longnose sucker	240					0		
		Longnose sucker	243					0		
		Longnose sucker	149					0		
		Longnose sucker	165					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	EF0403 19/08/2001 128.9									
		Longnose sucker	163					0		
		Longnose sucker	214					0		
		Longnose sucker	166					0		
		Longnose sucker	206					0		
		Longnose sucker	192					0		
		Longnose sucker	257					0		
		Longnose sucker	235					0		
		Longnose sucker	182					0		
		Northern pike	225					0		
		Northern pikeminnow	61					0		
		Northern pikeminnow	270					0		
		Northern pikeminnow	292					0		
		Peamouth	185					0		
		Redside shiner	53					0		
		Redside shiner	63					0		
		Redside shiner	56					0		
		Redside shiner	57					0		
		Redside shiner	63					0		
		Redside shiner	67					0		
		Redside shiner	88					0		
		Redside shiner	58					0		
		Redside shiner	74					0		
		Redside shiner	55					0		
		Redside shiner	123					0		
		Redside shiner	66					0		
		Redside shiner	94					0		
		Redside shiner	79					0		
		Redside shiner	96					0		
		Redside shiner	88					0		
		Redside shiner	88					0		
		Redside shiner	85					0		
		Redside shiner	96					0		
		Redside shiner	89					0		
		Redside shiner	96					0		
		Redside shiner	80					0		
		Slimy sculpin	55					0		
		Kokanee	64					0		
		Longnose sucker	94					0		
		Longnose sucker	43					4		
		Longnose sucker	103					0		
		Mountain whitefish	86					0		
		Mountain whitefish	106					0		
		Redside shiner	66					0		
		Redside shiner	31					0		
		Redside shiner	80					0		
		Redside shiner	66					0		
		Redside shiner	66					0		
		Redside shiner	62					0		
	ES0401 17/08/2001 145.2									

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0401 17/08/2001 145.2									
		Arctic grayling	256	236				0	Yellow	12
		Bull trout	541	1580				0	Yellow	42
		Bull trout	271	216				0	Yellow	43
		Mountain whitefish	334	484				0		
		Mountain whitefish	185					0		
		Mountain whitefish	251	194				0	Yellow	2
		Mountain whitefish	272					0		
		Mountain whitefish	264	182				0		
		Mountain whitefish	282	244				0	Yellow	1
		Mountain whitefish	333	454				0	Yellow	14
		Mountain whitefish	295	340				0		
		Mountain whitefish	225	134				0		
		Mountain whitefish	370	646				0	Yellow	6
		Mountain whitefish	311	344				0	Yellow	7
		Mountain whitefish	291	332				0	Yellow	8
		Mountain whitefish	348	526				0		
		Mountain whitefish	257	276				0	Yellow	5
		Mountain whitefish	261					0		
		Mountain whitefish	346	508				0	Yellow	9
		Mountain whitefish	347	494				0	Yellow	11
		Mountain whitefish	323					0		
		Mountain whitefish	300					0		
		Mountain whitefish	324					0		
		Mountain whitefish	227					0		
		Mountain whitefish	323	350				0		
		Mountain whitefish	401	886				0		
		Mountain whitefish	305					0		
		Mountain whitefish	287					0		
		Mountain whitefish	330					0		
		Mountain whitefish	315	346				0	Yellow	10
		Mountain whitefish	254	204				0	Yellow	3
		Mountain whitefish	315					0		
		Mountain whitefish	309	334				0	Yellow	13
		Mountain whitefish	287	266				0	Yellow	20
		Mountain whitefish	176					0		
		Mountain whitefish	272					0	Yellow	50
		Mountain whitefish	197	92				0		
		Mountain whitefish	326	394				0		
		Mountain whitefish	344	430				0		
		Mountain whitefish	348	542				0	Yellow	16
		Mountain whitefish	364	552				0	Yellow	28
		Mountain whitefish	333	438				0	Yellow	21
		Mountain whitefish	219	98				0		
		Mountain whitefish	296	342				0		
		Mountain whitefish	402	344				0		
		Mountain whitefish	307	352				0		
		Mountain whitefish	321	394				0		
		Mountain whitefish	339	456				0		
		Mountain whitefish	321	386				0	Yellow	24

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0401 17/08/2001 145.2									
		Mountain whitefish	228					0		
		Mountain whitefish	316	334				0	Yellow	17
		Mountain whitefish	197					0		
		Mountain whitefish	314					0		
		Mountain whitefish	206	100				0		
		Mountain whitefish	324	376				0	Yellow	25
		Mountain whitefish	321	358				0	Yellow	26
		Mountain whitefish	329	394				0		
		Mountain whitefish	291	306				0		
		Mountain whitefish	318	402				0	Yellow	22
		Mountain whitefish	261	196				0	Yellow	27
		Mountain whitefish	325					0	Yellow	49
		Mountain whitefish	274	224				0	Yellow	19
		Mountain whitefish	280	258				0	Yellow	31
		Mountain whitefish	204	98				0		
		Mountain whitefish	316	380				0	Yellow	29
		Mountain whitefish	353	414				0		
		Mountain whitefish	299	350				0	Yellow	30
		Mountain whitefish	201	90				0		
		Mountain whitefish	313	382				0		
		Mountain whitefish	271	250				0	Yellow	36
		Mountain whitefish	216	96				0		
		Mountain whitefish	311	386				0	Yellow	32
		Mountain whitefish	293	344				0		
		Mountain whitefish	321	494				0		
		Mountain whitefish	234	162				0		
		Mountain whitefish	316	398				0		
		Mountain whitefish	211	112				0		
		Mountain whitefish	227	136				0		
		Mountain whitefish	305					0	Yellow	48
		Mountain whitefish	334	446				0	Yellow	37
		Mountain whitefish	262	196				0	Yellow	38
		Mountain whitefish	313	338				0	Yellow	39
		Mountain whitefish	233	146				0		
		Mountain whitefish	315	384				0	Yellow	40
		Mountain whitefish	256	182				0		
		Mountain whitefish	314	394				0	Yellow	33
		Mountain whitefish	282	252				0	Yellow	34
		Mountain whitefish	251	196				0	Yellow	41
		Mountain whitefish	259	248				0	Yellow	23
		Mountain whitefish	342					0	Yellow	44
		Mountain whitefish	340					0	Yellow	45
		Mountain whitefish	210					0		
		Mountain whitefish	252					0	Yellow	46
		Mountain whitefish	306					0	Yellow	47
		Mountain whitefish	220					0		
		Mountain whitefish	231	156				0		
		Mountain whitefish	195					0		
		Mountain whitefish	262					0	Yellow	35

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0401 17/08/2001 145.2									
		Mountain whitefish	205					0		
		Mountain whitefish	323					0		
		Mountain whitefish	218					0		
		Mountain whitefish	220					0		
		Mountain whitefish	295					0	Yellow	51
		Mountain whitefish	283	258				0	Yellow	15
		Mountain whitefish	316	380				0	Yellow	18
		Mountain whitefish	240					0		
		Mountain whitefish	221					0		
		Mountain whitefish	281					0		
		Mountain whitefish	339	474				0		
		Mountain whitefish	279					0		
		Mountain whitefish	201					0		
		Mountain whitefish	303					0		
		Mountain whitefish	305					0		
		Mountain whitefish	323	396				0		
		Mountain whitefish	293					0		
		Mountain whitefish	300	290				0		
		Mountain whitefish	316	428				0		
		Mountain whitefish	357					0		
		Mountain whitefish	335					0		
		Mountain whitefish	241					0		
		Mountain whitefish	343					0		
		Mountain whitefish	295					0		
		Mountain whitefish	246					0		
		Mountain whitefish	357					0		
		Mountain whitefish	285	336				0		
		Mountain whitefish	246	182				0		
		Mountain whitefish	206	108				0		
		Mountain whitefish	255					0		
		Mountain whitefish	220					0		
		Mountain whitefish	316	422				0		
		Mountain whitefish	254	204				0		
		Mountain whitefish	291	364				0	Yellow	4
		Mountain whitefish	270	244				0		
		Mountain whitefish	380	590				0		
		Mountain whitefish	250					0		
		Mountain whitefish	282	264				0		
		Mountain whitefish	355					0		
		Mountain whitefish	318	388				0		
		Mountain whitefish	309	312				0		
		Mountain whitefish	307	358				0		
		Mountain whitefish	264	228				0		
		Mountain whitefish	327	462				0		
		Mountain whitefish	215	122				0		
		Mountain whitefish	218	98				0		
		Mountain whitefish	261	206				0	Yellow	987
		Mountain whitefish	304					0	Yellow	976
		Mountain whitefish	221	110				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0401 17/08/2001 145.2									
		Mountain whitefish	330	524				0	Yellow	946
		Mountain whitefish	228	134				0		
		Mountain whitefish	223	106				0		
		Mountain whitefish	230	130				0		
		Mountain whitefish	232	170				0		
		Mountain whitefish	215	108				0		
		Mountain whitefish	186	70				0		
		Mountain whitefish	289	298				0	Yellow	938
		Mountain whitefish	347	476				0	Yellow	950
		Mountain whitefish	350	632				0	Yellow	937
		Mountain whitefish	236	156				0		
		Mountain whitefish	267	228				0	Yellow	986
		Mountain whitefish	204	112				0		
		Mountain whitefish	221	134				0		
		Mountain whitefish	221	122				0		
		Mountain whitefish	214	130				0		
		Mountain whitefish	218	104				0		
		Mountain whitefish	218	146				0		
		Mountain whitefish	320	426				0	Yellow	942
		Mountain whitefish	204	96				0		
		Mountain whitefish	230	124				0		
		Mountain whitefish	205	108				0		
		Mountain whitefish	317	440				0	Yellow	943
		Mountain whitefish	227	144				0		
		Mountain whitefish	334	474				0	Yellow	931
		Mountain whitefish	336	444				0	Yellow	945
		Mountain whitefish	327	412				0	Yellow	939
		Mountain whitefish	270	252				0	Yellow	947
		Mountain whitefish	233	164				0		
		Mountain whitefish	224	122				0		
		Mountain whitefish	309	434				0	Yellow	948
		Mountain whitefish	216	172				0		
		Mountain whitefish	311	416				0	Yellow	944
		Mountain whitefish	305	396				0	Yellow	977
		Mountain whitefish	228	116				0		
		Mountain whitefish	335	490				0	Yellow	932
		Mountain whitefish	215	116				0		
		Mountain whitefish	266	230				0	Yellow	933
		Mountain whitefish	368	672				0	Yellow	934
		Mountain whitefish	330	438				0	Yellow	935
		Mountain whitefish	226	164				0		
		Mountain whitefish	228	134				0		
		Mountain whitefish	301	418				0	Yellow	940
		Mountain whitefish	315	440				0	Yellow	936
		Mountain whitefish	327	484				0	Yellow	949
		Mountain whitefish	316	378				0	Yellow	985
		Mountain whitefish	211	106				0		
		Mountain whitefish	220	166				0		
		Mountain whitefish	226	112				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0401 17/08/2001 145.2									
		Mountain whitefish	298	320				0	Yellow	984
		Mountain whitefish	276	220				0	Yellow	981
		Mountain whitefish	321	370				0	Yellow	982
		Mountain whitefish	213	98				0		
		Mountain whitefish	160	38				0		
		Mountain whitefish	345					0	Yellow	980
		Mountain whitefish	301	384				0	Yellow	941
		Mountain whitefish	226	122				0		
		Mountain whitefish	221	114				0		
		Mountain whitefish	279	226				0	Yellow	978
		Mountain whitefish	353	446				0	Yellow	983
	ES0402 17/08/2001 143.1									
		Largescale sucker	485	1700				0	Yellow	60
		Mountain whitefish	315					0	Yellow	59
		Bull trout	435	784		Fin Ray	5	0	Yellow	966
		Bull trout	465	1102		Fin Ray	5	0	Yellow	965
		Kokanee	154	38		Scale	1	0		
		Lake whitefish	321	294		Scale	4	0	Yellow	955
		Lake whitefish	282	322				0	Yellow	956
		Mountain whitefish	336	436				0	Yellow	958
		Mountain whitefish	276	258				0	Yellow	993
		Mountain whitefish	317	384				0	Yellow	952
		Mountain whitefish	336	336				0	Yellow	964
		Mountain whitefish	285	260				0	Yellow	951
		Mountain whitefish	330	382				0	Yellow	963
		Mountain whitefish	340	416				0	Yellow	962
		Mountain whitefish	328	464				0	Yellow	959
		Mountain whitefish	329	534				0	Yellow	957
		Mountain whitefish	302	324				0	Yellow	998
		Mountain whitefish	313	378				0	Yellow	954
		Mountain whitefish	285	246				0	Yellow	953
		Mountain whitefish	298	282				0	Yellow	960
		Mountain whitefish	224	118				0		
		Mountain whitefish	388	612				0	Yellow	996
		Mountain whitefish	338	448				0	Yellow	967
		Mountain whitefish	327	488				0		
		Mountain whitefish	321	432				0	Yellow	988
		Mountain whitefish	325	416				0	Yellow	989
		Mountain whitefish	374	624				0	Yellow	990
		Mountain whitefish	336	300				0	Yellow	991
		Mountain whitefish	323	402				0	Yellow	994
		Mountain whitefish	325	406				0	Yellow	995
		Mountain whitefish	320	364				0	Yellow	961
		Mountain whitefish	318	428				0	Yellow	997
		Mountain whitefish	297	280				0	Yellow	999
		Mountain whitefish	291	264				0	Yellow	992
		Mountain whitefish	276	268				0	Yellow	1000
	ES0403 17/08/2001 142.0									
		Arctic grayling	280	272				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0403 17/08/2001 142.0									
		Largescale sucker	347	832				0	Yellow	64
		Longnose sucker						0		
		Mountain whitefish	265	194				0	Yellow	69
		Mountain whitefish	302	326				0	Yellow	65
		Mountain whitefish	340	436				0	Yellow	71
		Mountain whitefish	312					0	Yellow	72
		Mountain whitefish	335					0	Yellow	73
		Mountain whitefish	262					0	Yellow	74
		Mountain whitefish	205	94				0		
		Mountain whitefish	298					0		
		Mountain whitefish	300					0		
		Mountain whitefish	312					0		
		Mountain whitefish	208					0		
		Mountain whitefish	189					0		
		Mountain whitefish	278					0		
		Mountain whitefish	257					0		
		Mountain whitefish	290	328				0	Yellow	70
		Mountain whitefish	307					0	Yellow	63
		Mountain whitefish	233					0		
		Mountain whitefish	300	320				0	Yellow	67
		Mountain whitefish	255	182				0	Yellow	66
		Mountain whitefish	410	676				0	Yellow	62
		Mountain whitefish	325					0		
		Mountain whitefish	330					0		
		Mountain whitefish	327	436				0	Yellow	61
		Mountain whitefish	324	412				0		
		Mountain whitefish	310					0	Yellow	58
		Mountain whitefish	323					0	Yellow	57
		Mountain whitefish	360	462				0	Yellow	55
		Mountain whitefish	342	406				0	Yellow	53
		Mountain whitefish	323					0	Yellow	52
		Mountain whitefish	335	406				0	Yellow	68
		Mountain whitefish	322	344				0	Yellow	54
		Rainbow trout	255	206				0	Yellow	75
		Rainbow trout	430					0		
		Mountain whitefish	305	302				0		
		Mountain whitefish	308	338				0	Yellow	1051
		Mountain whitefish	286	254				0	Yellow	968
		Mountain whitefish	283	272				0	Yellow	969
		Mountain whitefish	312	358				0	Yellow	970
		Mountain whitefish	323	418				0	Yellow	971
		Mountain whitefish	325	370				0	Yellow	972
		Mountain whitefish	313					0	Yellow	973
		Mountain whitefish	242	150				0		
		Mountain whitefish	313	364				0	Yellow	1023
		Mountain whitefish	262	228				0	Yellow	1021
		Mountain whitefish	308	346				0	Yellow	1014
		Mountain whitefish	313	380				0	Yellow	1002
		Mountain whitefish	346	506				0	Yellow	1006

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0403 17/08/2001 142.0									
		Mountain whitefish	308	352				0	Yellow	1004
		Mountain whitefish	316	346				0	Yellow	1013
		Mountain whitefish	321	342				0	Yellow	975
		Mountain whitefish	210	104				0		
		Mountain whitefish	305					0		
		Mountain whitefish	302	324				0	Yellow	1012
		Mountain whitefish	326	300				0	Yellow	1011
		Mountain whitefish	283	296				0	Yellow	974
		Mountain whitefish	291	312				0	Yellow	1053
		Mountain whitefish	321	394				0	Yellow	1052
		Mountain whitefish	211	98				0		
		Mountain whitefish	313	324				0	Yellow	1061
		Mountain whitefish	320	394				0	Yellow	1060
		Mountain whitefish	300	300				0	Yellow	1059
		Mountain whitefish	316	366				0		
		Mountain whitefish	312	316				0	Yellow	1058
		Mountain whitefish	260	210				0	Yellow	1022
		Mountain whitefish	231	136				0		
		Mountain whitefish	315	332				0	Yellow	1057
		Mountain whitefish	271	238				0	Yellow	1025
		Mountain whitefish	240	146				0		
		Mountain whitefish	336	462				0	Yellow	1024
		Mountain whitefish	214	126				0		
		Mountain whitefish	274					0	Yellow	1016
		Mountain whitefish	256	190				0	Yellow	1017
		Mountain whitefish	244	176				0		
		Mountain whitefish	315	382				0	Yellow	1018
		Mountain whitefish	343	460				0	Yellow	1054
		Mountain whitefish	311	318				0	Yellow	1020
		Mountain whitefish	335	476				0	Yellow	1015
		Mountain whitefish	236	144				0		
		Mountain whitefish	301	334				0	Yellow	1005
		Mountain whitefish	323					0	Yellow	1056
		Mountain whitefish	321	462				0	Yellow	1003
		Mountain whitefish	326	366				0	Yellow	1010
		Mountain whitefish	312	356				0	Yellow	1001
		Mountain whitefish	374	724				0		
		Mountain whitefish	324	448				0	Yellow	1008
		Mountain whitefish	321	370				0	Yellow	1007
		Mountain whitefish	306	324				0	Yellow	1009
		Rainbow trout	303	352				0	Yellow	1019
		Rainbow trout	423	746				0	Yellow	1055
	ES0404 17/08/2001 140.0									
		Arctic grayling	191	100				0		
		Arctic grayling	169	62				0		
		Arctic grayling	281	286				0	Yellow	94
		Bull trout	297	306				0	Yellow	88
		Bull trout	204	98				0		
		Mountain whitefish	270	222				0	Yellow	100

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0404 17/08/2001 140.0									
		Mountain whitefish	293	294				0	Yellow	103
		Mountain whitefish	266	212				0	Yellow	99
		Mountain whitefish	328	422				0		
		Mountain whitefish	323	362				0	Yellow	102
		Mountain whitefish	305	312				0		
		Mountain whitefish	308	308				0	Yellow	104
		Mountain whitefish	343	446				0	Yellow	101
		Mountain whitefish	319	348				0		
		Mountain whitefish	295	246				0		
		Mountain whitefish	445	1154				0	Yellow	83
		Mountain whitefish	301	338				0	Yellow	84
		Mountain whitefish	327	398				0	Yellow	85
		Mountain whitefish	307	366				0	Yellow	86
		Mountain whitefish	252	176				0		
		Mountain whitefish	301	384				0	Yellow	87
		Mountain whitefish	434	1146				0		
		Mountain whitefish	326	382				0	Yellow	56
		Mountain whitefish	263	182				0	Yellow	90
		Mountain whitefish	364	606				0	Yellow	89
		Mountain whitefish	208	94				0		
		Mountain whitefish	306	334				0	Yellow	93
		Mountain whitefish	306	348				0		
		Mountain whitefish	326					0	Yellow	91
		Mountain whitefish	307	384				0	Yellow	76
		Mountain whitefish	203	82				0		
		Mountain whitefish	342	406				0	Yellow	77
		Mountain whitefish	246	148				0		
		Mountain whitefish	224	121				0		
		Mountain whitefish	283	250				0	Yellow	92
		Mountain whitefish	199	80				0		
		Mountain whitefish	313	328				0	Yellow	78
		Mountain whitefish	316	370				0	Yellow	79
		Mountain whitefish	199	94				0		
		Mountain whitefish	302	332				0	Yellow	80
		Mountain whitefish	290	296				0	Yellow	81
		Mountain whitefish	323	452				0	Yellow	97
		Mountain whitefish	319	340				0	Yellow	82
		Mountain whitefish	281	226				0	Yellow	106
		Mountain whitefish	344	436				0	Yellow	95
		Mountain whitefish	209	108				0		
		Mountain whitefish	216	98				0		
		Mountain whitefish	273	190				0	Yellow	96
		Mountain whitefish	304	358				0		
		Mountain whitefish	213	108				0		
		Mountain whitefish	313	318				0	Yellow	98
		Mountain whitefish	213	112				0		
		Mountain whitefish	217	120				0		
		Mountain whitefish	253	166				0	Yellow	107
		Mountain whitefish	215	100				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0404 17/08/2001 140.0									
		Mountain whitefish	214	108				0		
		Mountain whitefish	282	262				0	Yellow	105
		Longnose sucker	417	932				0	Yellow	1063
		Mountain whitefish	334	414				0	Yellow	1069
		Mountain whitefish	344	614				0	Yellow	1077
		Mountain whitefish	290	346				0	Yellow	1093
		Mountain whitefish	321	444				0	Yellow	1071
		Mountain whitefish	260	234				0	Yellow	1094
		Mountain whitefish	276	288				0	Yellow	1096
		Mountain whitefish	245	190				0		
		Mountain whitefish	269	240				0	Yellow	1091
		Mountain whitefish	335	452				0	Yellow	1081
		Mountain whitefish	302	306				0	Yellow	1075
		Mountain whitefish	335	460				0	Yellow	1064
		Mountain whitefish	304	390				0	Yellow	1076
		Mountain whitefish	327	400				0	Yellow	1085
		Mountain whitefish	335	394				0	Yellow	1078
		Mountain whitefish	328	416				0	Yellow	1087
		Mountain whitefish	342	482				0	Yellow	1079
		Mountain whitefish	328	468				0	Yellow	1074
		Mountain whitefish	315	388				0	Yellow	1082
		Mountain whitefish	237					0		
		Mountain whitefish	326	536				0	Yellow	1083
		Mountain whitefish	329	414				0	Yellow	1084
		Mountain whitefish	332	382				0	Yellow	1080
		Mountain whitefish	300	390				0		
		Mountain whitefish	321	412				0	Yellow	1092
		Mountain whitefish	317	370				0	Yellow	1073
		Mountain whitefish	330	510				0	Yellow	1072
		Mountain whitefish	354	574				0	Yellow	1070
		Mountain whitefish	269					0	Yellow	1068
		Mountain whitefish	336	512				0	Yellow	1067
		Mountain whitefish	305	342				0	Yellow	1066
		Mountain whitefish	327	456				0	Yellow	1062
		Mountain whitefish	425	944				0	Yellow	1065
		Mountain whitefish	299	338				0		
		Mountain whitefish	302					0	Yellow	1095
		Mountain whitefish	201					0		
		Mountain whitefish	238					0		
		Mountain whitefish	312	390				0	Yellow	1089
		Mountain whitefish	224	150				0		
		Mountain whitefish	308	338				0	Yellow	1088
		Mountain whitefish	210	106				0		
		Mountain whitefish	223	114				0		
		Mountain whitefish	233	148				0		
		Mountain whitefish	325	404				0	Yellow	1086
		Mountain whitefish	292	326				0	Yellow	1090
	ES0405 17/08/2001 139.0									
		Arctic grayling	273	252				0	Yellow	129

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0405 17/08/2001 139.0									
		Bull trout	257	190				0	Yellow	131
		Largescale sucker	439	1256		Fin Ray	10	0	Yellow	113
		Mountain whitefish	195	78				0		
		Mountain whitefish	243	194				0		
		Mountain whitefish	209	92				0		
		Mountain whitefish	339	410				0	Yellow	130
		Mountain whitefish	290	300				0	Yellow	130
		Mountain whitefish	161	42				0		
		Mountain whitefish	138	28				0		
		Mountain whitefish	194	72				0		
		Mountain whitefish	204	84				0		
		Mountain whitefish	203	100				0		
		Mountain whitefish	213	118				0		
		Mountain whitefish	213	106				0		
		Mountain whitefish	331	468				0		
		Mountain whitefish	264	206				0	Yellow	134
		Mountain whitefish	340	422				0	Yellow	111
		Mountain whitefish	319	364				0	Yellow	127
		Mountain whitefish	202	98				0		
		Mountain whitefish	323					0	Yellow	133
		Mountain whitefish	216	98				0		
		Mountain whitefish	336	386				0	Yellow	132
		Mountain whitefish	241	170				0		
		Mountain whitefish	330	414				0	Yellow	126
		Mountain whitefish	304	344				0	Yellow	128
		Mountain whitefish	208	102				0		
		Mountain whitefish	195	76				0		
		Mountain whitefish	216	112				0		
		Mountain whitefish	327	458				0	Yellow	123
		Mountain whitefish	305	356				0		
		Mountain whitefish	211	126				0		
		Mountain whitefish	402	776				0	Yellow	118
		Mountain whitefish	344	458				0	Yellow	119
		Mountain whitefish	323					0	Yellow	120
		Mountain whitefish	198	56				0		
		Mountain whitefish	216	130				0		
		Mountain whitefish	417	762				0	Yellow	108
		Mountain whitefish	348	528				0		
		Mountain whitefish	368	596				0	Yellow	124
		Mountain whitefish	243	188				0		
		Mountain whitefish	360	500				0	Yellow	121
		Mountain whitefish	136	22				0		
		Mountain whitefish	385	636				0		
		Mountain whitefish	281	252				0	Yellow	122
		Mountain whitefish	370	526				0	Yellow	109
		Mountain whitefish	299	346				0	Yellow	117
		Mountain whitefish	196					0		
		Mountain whitefish	306	354				0	Yellow	110
		Mountain whitefish	259	258				0	Yellow	125

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0405 17/08/2001 139.0									
		Mountain whitefish	279	238				0	Yellow	112
		Mountain whitefish	353	406				0	Yellow	114
		Mountain whitefish	334	462				0	Yellow	115
		Mountain whitefish	315	398				0	Yellow	116
		Mountain whitefish	382	686				0		
		Prickly sculpin	88	10				0		
		Bull trout	314	296		Fin Ray	3	0	Yellow	1123
		Longnose sucker	420	908				0	Yellow	1117
		Longnose sucker	398	816				0	Yellow	1119
		Longnose sucker	414	976				0	Yellow	1118
		Mountain whitefish	341	504				0	Yellow	1147
		Mountain whitefish	327	436				0	Yellow	1132
		Mountain whitefish	277	230				0	Yellow	1148
		Mountain whitefish	313	272				0	Yellow	1150
		Mountain whitefish	339	468				0	Yellow	1027
		Mountain whitefish	306	370				0	Yellow	1144
		Mountain whitefish	329	426				0	Yellow	1029
		Mountain whitefish	192	88				0		
		Mountain whitefish	325	404				0	Yellow	1030
		Mountain whitefish	300	284				0	Yellow	1031
		Mountain whitefish	307	402				0		
		Mountain whitefish	294	314				0		
		Mountain whitefish	311	370				0	Yellow	1026
		Mountain whitefish	201	80				0		
		Mountain whitefish	293	280				0	Yellow	1099
		Mountain whitefish	310	308				0	Yellow	1131
		Mountain whitefish	291	270				0	Yellow	1103
		Mountain whitefish	322	394				0	Yellow	1133
		Mountain whitefish	293	274				0	Yellow	1134
		Mountain whitefish	341	464				0	Yellow	1135
		Mountain whitefish	279	258				0	Yellow	1146
		Mountain whitefish	316	394				0	Yellow	1137
		Mountain whitefish	317	446				0	Yellow	1128
		Mountain whitefish	314	344				0	Yellow	1138
		Mountain whitefish	312	330				0	Yellow	1139
		Mountain whitefish	294	304				0	Yellow	1140
		Mountain whitefish	281	236				0	Yellow	1141
		Mountain whitefish	286	258				0	Yellow	1142
		Mountain whitefish	314	364				0	Yellow	1143
		Mountain whitefish	340	436				0	Yellow	1136
		Mountain whitefish	293	284				0	Yellow	1130
		Mountain whitefish	316	382				0	Yellow	1098
		Mountain whitefish	301	334				0	Yellow	1028
		Mountain whitefish	337	462				0	Yellow	1122
		Mountain whitefish	167	54				0		
		Mountain whitefish	311	344				0	Yellow	1114
		Mountain whitefish	286	270				0	Yellow	1115
		Mountain whitefish	333	476				0	Yellow	1116
		Mountain whitefish	330	408				0	Yellow	1121

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0405 17/08/2001 139.0									
		Mountain whitefish	327	396				0	Yellow	1111
		Mountain whitefish	328	372				0	Yellow	1124
		Mountain whitefish	321	386				0	Yellow	1125
		Mountain whitefish	271	234				0	Yellow	1126
		Mountain whitefish	291	292				0	Yellow	1120
		Mountain whitefish	280	270				0	Yellow	1105
		Mountain whitefish	283	276				0		
		Mountain whitefish	332	418				0	Yellow	1112
		Mountain whitefish	294	302				0	Yellow	1145
		Mountain whitefish	312	354				0	Yellow	1129
		Mountain whitefish	311	352				0	Yellow	1110
		Mountain whitefish	326	408				0	Yellow	1109
		Mountain whitefish	343	454				0	Yellow	1108
		Mountain whitefish	312	394				0		
		Mountain whitefish	322	370				0	Yellow	1106
		Mountain whitefish	275	292				0	Yellow	1097
		Mountain whitefish	327	326				0	Yellow	1104
		Mountain whitefish	330	422				0	Yellow	1113
		Mountain whitefish	264	170				0	Yellow	1102
		Mountain whitefish	296	302				0	Yellow	1101
		Mountain whitefish	282	278				0	Yellow	1100
		Mountain whitefish	300	296				0	Yellow	1127
		Mountain whitefish	297	282				0	Yellow	1107
		Mountain whitefish	331	366				0	Yellow	1149
	ES0406 17/08/2001 136.5									
		Largescale sucker	433	1170		Fin Ray	8	0	Yellow	136
		Largescale sucker	422	852		Fin Ray	10	0		
		Largescale sucker	354	628		Fin Ray	7	0	Yellow	142
		Largescale sucker	475	1436		Fin Ray	11	0	Yellow	139
		Largescale sucker	419	1238		Fin Ray	11	0	Yellow	137
		Largescale sucker	494	1144		Fin Ray	14	0	Yellow	138
		Longnose sucker	419	824		Fin Ray	11	0	Yellow	141
		Longnose sucker	405	934		Fin Ray	12	0	Yellow	135
		Mountain whitefish	345	432				0		
		Northern pikeminnow	350	522		Fin Ray		0	Yellow	140
		Lake whitefish	379	706		Scale	5	0	Yellow	1032
		Largescale sucker	430					0	Yellow	1037
		Mountain whitefish	285					0	Yellow	1038
		Mountain whitefish	315	340				0	Yellow	1033
		Mountain whitefish	340	470				0	Yellow	1034
		Mountain whitefish	278					0	Yellow	1035
		Mountain whitefish	299					0	Yellow	1036
	ES0407 17/08/2001 135.0									
		Arctic grayling	291	326				0	Yellow	149
		Arctic grayling	261	242				0	Yellow	151
		Mountain whitefish	309	368				0	Yellow	174
		Mountain whitefish	332	408				0	Yellow	148
		Mountain whitefish	196	84				0		
		Mountain whitefish	215	106				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0407 17/08/2001 135.0									
		Mountain whitefish	186	66				0		
		Mountain whitefish	210	88				0		
		Mountain whitefish	206	102				0		
		Mountain whitefish	205	100				0		
		Mountain whitefish	232	142				0		
		Mountain whitefish	296	238				0	Yellow	173
		Mountain whitefish	326	422				0		
		Mountain whitefish	354	434				0	Yellow	146
		Mountain whitefish	224	108				0		
		Mountain whitefish	382	618				0	Yellow	163
		Mountain whitefish	262	184				0	Yellow	172
		Mountain whitefish	321	402				0		
		Mountain whitefish	300	354				0	Yellow	162
		Mountain whitefish	334	430				0	Yellow	152
		Mountain whitefish	338	444				0	Yellow	147
		Mountain whitefish	325	396				0	Yellow	165
		Mountain whitefish	326	392				0	Yellow	161
		Mountain whitefish	316	326				0	Yellow	166
		Mountain whitefish	319	380				0	Yellow	160
		Mountain whitefish	202	94				0		
		Mountain whitefish	262	194				0	Yellow	171
		Mountain whitefish	301	278				0	Yellow	169
		Mountain whitefish	283	264				0	Yellow	168
		Mountain whitefish	334	438				0	Yellow	167
		Mountain whitefish	248	176				0		
		Mountain whitefish	269	240				0		
		Mountain whitefish	296	302				0	Yellow	155
		Mountain whitefish	300	334				0	Yellow	145
		Mountain whitefish	333	428				0	Yellow	144
		Mountain whitefish	319					0	Yellow	143
		Mountain whitefish	322	358				0		
		Mountain whitefish	299	342				0	Yellow	164
		Mountain whitefish	221	110				0		
		Mountain whitefish	325	396				0	Yellow	154
		Mountain whitefish	331	372				0	Yellow	156
		Mountain whitefish	296	396				0	Yellow	157
		Mountain whitefish	310	384				0	Yellow	158
		Mountain whitefish	349	456				0	Yellow	159
		Mountain whitefish	323	356				0	Yellow	153
		Rainbow trout	150	34				0		
		Rainbow trout	222	128				0		
		Rainbow trout	306	328				0	Yellow	175
		Arctic grayling	220	144				0		
		Arctic grayling	301	400				0	Yellow	1155
		Bull trout	337	354		Fin Ray	3	0	Yellow	1177
		Largescale sucker	393	802				0		
		Longnose sucker	338	520				0	Yellow	1166
		Mountain whitefish	239	150				0		
		Mountain whitefish	221	122				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0407 17/08/2001 135.0									
		Mountain whitefish	334					0	Yellow	1046
		Mountain whitefish	360					0	Yellow	1047
		Mountain whitefish	324					0	Yellow	1048
		Mountain whitefish	334					0	Yellow	1182
		Mountain whitefish	303	300				0	Yellow	1179
		Mountain whitefish	295					0	Yellow	1178
		Mountain whitefish	332					0	Yellow	1167
		Mountain whitefish	280					0	Yellow	1176
		Mountain whitefish	320					0	Yellow	1170
		Mountain whitefish	334	466				0	Yellow	1169
		Mountain whitefish	219	130				0		
		Mountain whitefish	231	148				0		
		Mountain whitefish	306					0	Yellow	1181
		Mountain whitefish	291					0	Yellow	1050
		Mountain whitefish	329					0	Yellow	1044
		Mountain whitefish	347					0	Yellow	1042
		Mountain whitefish	309					0	Yellow	1045
		Mountain whitefish	322		17			0	Yellow	1041
		Mountain whitefish	316					0		
		Mountain whitefish	310					0	Yellow	1039
		Mountain whitefish	313					0	Yellow	1184
		Mountain whitefish	257	188				0	Yellow	1152
		Mountain whitefish	333	416				2	Yellow	167
		Mountain whitefish	233	138				0		
		Mountain whitefish	195	70				0		
		Mountain whitefish	230					0		
		Mountain whitefish	219					0		
		Mountain whitefish	226	110				0		
		Mountain whitefish	318					0	Yellow	1043
		Mountain whitefish	236	148				0		
		Mountain whitefish	293					0	Yellow	1160
		Mountain whitefish	272	254				0	Yellow	1165
		Mountain whitefish	339	460	17			0	Yellow	1154
		Mountain whitefish	298					0		
		Mountain whitefish	381	678				0	Yellow	1156
		Mountain whitefish	345					0	Yellow	1157
		Mountain whitefish	283	282				0	Yellow	1151
		Mountain whitefish	310					0	Yellow	1159
		Mountain whitefish	293					0		
		Mountain whitefish	314					0	Yellow	1161
		Mountain whitefish	277	218				0	Yellow	1162
		Mountain whitefish	219	124				0		
		Mountain whitefish	311					0		
		Mountain whitefish	340	454				0	Yellow	1153
		Mountain whitefish	293					0	Yellow	1183
		Mountain whitefish	264	242				0	Yellow	1158
		Mountain whitefish	183	70				0		
		Mountain whitefish	331	412				0	Yellow	1172
		Mountain whitefish	227	422				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0407 17/08/2001 135.0									
		Mountain whitefish	295					0	Yellow	1173
		Mountain whitefish	334					0	Yellow	1174
		Mountain whitefish	306					0	Yellow	1049
		Mountain whitefish	330					0	Yellow	1175
		Mountain whitefish	265	194				0	Yellow	1163
		Mountain whitefish	321					0	Yellow	1171
		Rainbow trout	368	592				0	Yellow	1168
		Rainbow trout	391	732				0	Yellow	1164
		Rainbow trout	394	732				0	Yellow	1040
		Rainbow trout	197	90				0		
		Rainbow trout	250	164				0	Yellow	1185
		Rainbow trout	388	716				0	Yellow	1180
	ES0408 17/08/2001 133.0									
		Arctic grayling	270	244				0	Yellow	194
		Arctic grayling	295	180				0	Yellow	184
		Mountain whitefish	437					0	Yellow	176
		Mountain whitefish	186	74				0		
		Mountain whitefish	250					0	Yellow	201
		Mountain whitefish	244					0		
		Mountain whitefish	365					0	Yellow	183
		Mountain whitefish	308					0		
		Mountain whitefish	329					0		
		Mountain whitefish	144	36				0		
		Mountain whitefish	313	358				0	Yellow	206
		Mountain whitefish	140	28				0		
		Mountain whitefish	197	96				0		
		Mountain whitefish	145	30				0		
		Mountain whitefish	319					0	Yellow	178
		Mountain whitefish	200	88				0		
		Mountain whitefish	190					0		
		Mountain whitefish	196	96				0		
		Mountain whitefish	175	60				0		
		Mountain whitefish	201					0		
		Mountain whitefish	219	114				0		
		Mountain whitefish	206	100				0		
		Mountain whitefish	200					0		
		Mountain whitefish	227					0		
		Mountain whitefish	216					0		
		Mountain whitefish	327					0	Yellow	203
		Mountain whitefish	321					0	Yellow	202
		Mountain whitefish	312					0		
		Mountain whitefish	177	60				0		
		Mountain whitefish	337					0	Yellow	192
		Mountain whitefish	310					0	Yellow	198
		Mountain whitefish	341					0	Yellow	197
		Mountain whitefish	202					0		
		Mountain whitefish	259					0	Yellow	200
		Mountain whitefish	318					0	Yellow	186
		Mountain whitefish	320					0	Yellow	187

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0408 17/08/2001 133.0									
		Mountain whitefish	311					0	Yellow	188
		Mountain whitefish	277					0	Yellow	189
		Mountain whitefish	325					0	Yellow	190
		Mountain whitefish	215					0		
		Mountain whitefish	317					0	Yellow	179
		Mountain whitefish	274					0	Yellow	195
		Mountain whitefish	385					0	Yellow	182
		Mountain whitefish	350					0	Yellow	177
		Mountain whitefish	333					0	Yellow	185
		Mountain whitefish	302					0		
		Mountain whitefish	182	30				0		
		Mountain whitefish	308					0	Yellow	170
		Mountain whitefish	329					0		
		Mountain whitefish	337					0		
		Mountain whitefish	321					0		
		Mountain whitefish	267					0		
		Mountain whitefish	334					0	Yellow	196
		Mountain whitefish	326					0	Yellow	193
		Mountain whitefish	420					0	Yellow	181
		Rainbow trout	227	148				0		
		Rainbow trout	364					0	Yellow	191
		Rainbow trout	385	584				0	Yellow	180
		Rainbow trout	319	394				0	Yellow	204
		Rainbow trout	384	618				0	Yellow	205
		Rainbow trout	280	252				0	Yellow	207
		Rainbow trout	312	342				0	Yellow	199
		Bull trout	431	794		Fin Ray	5	0	Yellow	1200
		Bull trout	361	498		Fin Ray	4	0	Yellow	1223
		Largescale sucker	510	1710				0	Yellow	1219
		Largescale sucker	504	1612				0	Yellow	1188
		Longnose sucker	430	1012				0	Yellow	1212
		Longnose sucker	406	864				0	Yellow	1209
		Longnose sucker	395	822				0	Yellow	1191
		Longnose sucker	352	502				0	Yellow	1204
		Mountain whitefish	295					0		
		Mountain whitefish	288					0	Yellow	1190
		Mountain whitefish	302					0		
		Mountain whitefish	289					0	Yellow	1196
		Mountain whitefish	314					0	Yellow	1186
		Mountain whitefish	351					0	Yellow	1187
		Mountain whitefish	305					0	Yellow	1189
		Mountain whitefish	324					0	Yellow	1222
		Mountain whitefish	333					0	Yellow	1192
		Mountain whitefish	301					0	Yellow	1193
		Mountain whitefish	324					0	Yellow	1194
		Mountain whitefish	324					0	Yellow	1195
		Mountain whitefish	295					0	Yellow	1199
		Mountain whitefish	316					0	Yellow	1217
		Mountain whitefish	294					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0408 17/08/2001 133.0									
		Mountain whitefish	320					0	Yellow	1201
		Mountain whitefish	298					0	Yellow	1198
		Mountain whitefish	321					0	Yellow	1207
		Mountain whitefish	326					0	Yellow	1214
		Mountain whitefish	353					0		
		Mountain whitefish	338					0	Yellow	1206
		Mountain whitefish	288					0	Yellow	1220
		Mountain whitefish	174	60				0		
		Mountain whitefish	278					0	Yellow	1221
		Mountain whitefish	303					0	Yellow	1208
		Mountain whitefish	323					0	Yellow	1210
		Mountain whitefish	300					0	Yellow	1218
		Mountain whitefish	311					0	Yellow	1205
		Mountain whitefish	315					0	Yellow	1213
		Mountain whitefish	326					0	Yellow	1203
		Mountain whitefish	210	108				0		
		Mountain whitefish	298					0	Yellow	1215
		Mountain whitefish	340					0	Yellow	1216
		Mountain whitefish	324					0	Yellow	1211
		Rainbow trout	334	410				0	Yellow	1224
		Rainbow trout	429	708				0	Yellow	1197
		Rainbow trout	329	356				0	Yellow	1202
	ES0409 18/08/2001 128.7									
		Bull trout	213	114				0		
		Bull trout	199	76				0		
		Mountain whitefish	245	158				0		
		Mountain whitefish	340					0		
		Mountain whitefish	304					0	Yellow	237
		Mountain whitefish	356	418				0	Yellow	232
		Mountain whitefish						0		
		Mountain whitefish	131	20				0		
		Mountain whitefish	286					0	Yellow	233
		Mountain whitefish	226	132				0		
		Mountain whitefish	158	38				0		
		Mountain whitefish	226	116				0		
		Mountain whitefish	280					0	Yellow	231
		Mountain whitefish	201	82				0		
		Mountain whitefish	299					0	Yellow	234
		Mountain whitefish	340					0	Yellow	238
		Mountain whitefish	337					0	Yellow	235
		Mountain whitefish	144	28				0		
		Mountain whitefish	193	72				0		
		Mountain whitefish	142	30				0		
		Mountain whitefish	192	70				0		
		Mountain whitefish	279	274				0		
		Mountain whitefish	210	94				0		
		Mountain whitefish	303					0		
		Mountain whitefish	322					0	Yellow	219
		Mountain whitefish	294	308				0	Yellow	211

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0409 18/08/2001 128.7									
		Mountain whitefish	284	272				0	Yellow	212
		Mountain whitefish	299	282				0	Yellow	214
		Mountain whitefish	313					0	Yellow	230
		Mountain whitefish	347	510				0	Yellow	215
		Mountain whitefish	371	524				0	Yellow	216
		Mountain whitefish	322	376				0	Yellow	217
		Mountain whitefish	277					0		
		Mountain whitefish	314					0	Yellow	218
		Mountain whitefish						0		
		Mountain whitefish	200	80				0		
		Mountain whitefish	299					0	Yellow	239
		Mountain whitefish	204	84				0		
		Mountain whitefish	152	30				0		
		Mountain whitefish	214	96				0		
		Mountain whitefish	268					0	Yellow	240
		Mountain whitefish	207	98				0		
		Mountain whitefish	142	32				0		
		Mountain whitefish	256					0		
		Mountain whitefish	196	82				0		
		Mountain whitefish	205	100				0		
		Mountain whitefish	310	318				0	Yellow	213
		Mountain whitefish	298					0	Yellow	236
		Mountain whitefish	306	322				0	Yellow	208
		Mountain whitefish	305	318				0	Yellow	210
		Mountain whitefish	310	300				0	Yellow	209
		Mountain whitefish	314	338				0		
		Mountain whitefish	329					0	Yellow	229
		Mountain whitefish	261					0	Yellow	227
		Mountain whitefish	313					0	Yellow	226
		Mountain whitefish	300					0	Yellow	225
		Mountain whitefish	302					0	Yellow	224
		Mountain whitefish	300					0	Yellow	228
		Mountain whitefish	256					0	Yellow	223
		Mountain whitefish	313					0		
		Mountain whitefish	257					0	Yellow	220
		Mountain whitefish	310					0	Yellow	221
		Mountain whitefish	320					0	Yellow	222
	ES0410 18/08/2001 128.0									
		Mountain whitefish	207	88				0		
		Mountain whitefish	298					0	Yellow	248
		Mountain whitefish	228	130				0		
		Mountain whitefish	320					0	Yellow	249
		Mountain whitefish	204	84				0		
		Mountain whitefish	203	94				0		
		Mountain whitefish	198	72				0		
		Mountain whitefish	329					0	Yellow	250
		Mountain whitefish	277					0	Yellow	247
		Mountain whitefish						0		
		Mountain whitefish	183	66				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0410 18/08/2001 128.0									
		Mountain whitefish	144	30				0		
		Mountain whitefish	224	114				0		
		Mountain whitefish	206	92				0		
		Mountain whitefish	208	84				0		
		Mountain whitefish	197	76				0		
		Mountain whitefish	193	68				0		
		Mountain whitefish	198	72				0		
		Mountain whitefish	188	60				0		
		Mountain whitefish	298					0	Yellow	246
		Mountain whitefish	195	76				0		
		Mountain whitefish	212	98				0		
		Mountain whitefish	215	98				0		
		Mountain whitefish	307					0	Yellow	242
		Mountain whitefish						0		
		Mountain whitefish	127	20				0		
		Mountain whitefish	150	34				0		
		Mountain whitefish	309					0	Yellow	245
		Mountain whitefish	252					0	Yellow	243
		Mountain whitefish	440					0		
		Mountain whitefish	210					0		
		Mountain whitefish	365					0	Yellow	241
		Mountain whitefish	288					1		
		Mountain whitefish	177	52				0		
		Mountain whitefish	384	554				0	Yellow	244
		Mountain whitefish	260	76				0		
		Mountain whitefish	148	28				0		
		Mountain whitefish	135	22				0		
		Mountain whitefish	149	32				0		
		Mountain whitefish	154	32				0		
		Mountain whitefish	195	72				0		
		Mountain whitefish	217	68				0		
		Mountain whitefish	222	108				0		
		Mountain whitefish	148	28				0		
		Bull trout	427	734		Fin Ray	4	0	Yellow	1299
		Bull trout	461	842		Fin Ray	6	0	Yellow	1300
		Largescale sucker	477	1450				0	Yellow	1274
		Largescale sucker	543	2028				0	Yellow	1235
		Largescale sucker	468	1328				0	Yellow	1275
		Longnose sucker	400	826				0	Yellow	1226
		Mountain whitefish	310					0	Yellow	1237
		Mountain whitefish	288					0		
		Mountain whitefish	250					0	Yellow	1231
		Mountain whitefish	285					0	Yellow	1239
		Mountain whitefish	342					0	Yellow	1233
		Mountain whitefish	332					0	Yellow	1269
		Mountain whitefish	313					0	Yellow	1230
		Mountain whitefish	291					0	Yellow	1229
		Mountain whitefish	326					0		
		Mountain whitefish	301					0	Yellow	1253

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.
Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0410 18/08/2001 128.0									
		Mountain whitefish	296					0	Yellow	1236
		Mountain whitefish	300					0	Yellow	1238
		Mountain whitefish	166	52				0		
		Mountain whitefish	333					0		
		Mountain whitefish	206					0		
		Mountain whitefish	210					0		
		Mountain whitefish	263					0	Yellow	1270
		Mountain whitefish	260					0	Yellow	1271
		Mountain whitefish	302					0		
		Mountain whitefish	295					0	Yellow	1246
		Mountain whitefish	293					0	Yellow	1227
		Mountain whitefish	218					0		
		Mountain whitefish	275					0	Yellow	1240
		Mountain whitefish	231					0		
		Mountain whitefish	293					0	Yellow	1241
		Mountain whitefish	345					0	Yellow	1242
		Mountain whitefish	329					0	Yellow	1225
		Mountain whitefish	285					0	Yellow	1243
		Mountain whitefish	152	38				0		
		Mountain whitefish	316					0	Yellow	1228
		Mountain whitefish	284					0	Yellow	1247
		Mountain whitefish	342					0	Yellow	1248
		Mountain whitefish	337					0	Yellow	1249
		Mountain whitefish	321					0	Yellow	1250
		Mountain whitefish	293					0	Yellow	1252
		Mountain whitefish	324					0	Yellow	1245
		Mountain whitefish	290					0	Yellow	1232
		Mountain whitefish	245					0		
		Mountain whitefish	306					0	Yellow	1263
		Mountain whitefish	292					0	Yellow	1256
		Mountain whitefish	307					0	Yellow	1257
		Mountain whitefish	310					0	Yellow	1258
		Mountain whitefish	331					0	Yellow	1259
		Mountain whitefish	230					0		
		Mountain whitefish	316					0	Yellow	1260
		Mountain whitefish	295					0	Yellow	1255
		Mountain whitefish	221					0		
		Mountain whitefish	232					0		
		Mountain whitefish	190					0		
		Mountain whitefish	307					0	Yellow	1261
		Mountain whitefish	336					0	Yellow	1265
		Mountain whitefish	289					0	Yellow	1266
		Mountain whitefish	292					0	Yellow	1244
		Mountain whitefish	321					0		
		Mountain whitefish	308					0	Yellow	1262
		Mountain whitefish	302					0	Yellow	1272
		Mountain whitefish	265					0	Yellow	1264
		Mountain whitefish	291					0		
		Mountain whitefish	302					0	Yellow	1267

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0410 18/08/2001 128.0									
		Mountain whitefish	293					0	Yellow	1268
		Mountain whitefish	157	38				0		
		Mountain whitefish	312					0	Yellow	1297
		Mountain whitefish	156	42				0		
		Mountain whitefish	162	46				0		
		Mountain whitefish	172					0		
		Mountain whitefish	332					0	Yellow	1298
		Mountain whitefish	165					0		
		Mountain whitefish	191					0		
		Mountain whitefish	305					0	Yellow	1296
		Mountain whitefish	333					0	Yellow	1251
		Mountain whitefish	272					0	Yellow	1273
		Mountain whitefish	245					0		
		Mountain whitefish	325					0	Yellow	1254
		Northern pikeminnow	322	420				0		
		Northern pikeminnow	347	576				0	Yellow	1234
	ES0411 18/08/2001 126.7									
		Largescale sucker	381	636		Fin Ray	10	0	Yellow	253
		Largescale sucker	366	592		Fin Ray	7	0	Yellow	252
		Largescale sucker	458	1274		Fin Ray	13	0	Yellow	256
		Largescale sucker	465	1400		Fin Ray	13	0		
		Largescale sucker	404	816		Fin Ray	11	0	Yellow	254
		Largescale sucker	416	870		Fin Ray	7	0	Yellow	258
		Longnose sucker	376	698		Fin Ray	9	0	Yellow	255
		Longnose sucker	407	784		Fin Ray	10	0	Yellow	257
		Redside shiner	137	22				0		
		Largescale sucker	422	902				0	Yellow	1288
		Mountain whitefish	300					0	Yellow	1284
		Mountain whitefish	325					0	Yellow	1291
		Mountain whitefish	347					0	Yellow	1287
		Mountain whitefish	326					0	Yellow	1292
		Mountain whitefish	253					0	Yellow	1289
		Mountain whitefish	300					0	Yellow	1293
		Mountain whitefish	276					0	Yellow	1295
		Mountain whitefish	281					0	Yellow	1286
		Mountain whitefish	299					0	Yellow	1283
		Mountain whitefish	308					0	Yellow	1290
		Mountain whitefish	320					0	Yellow	1285
		Mountain whitefish	356					0	Yellow	1294
	ES0412 18/08/2001 125.0									
		Arctic grayling	280	226				0		
		Bull trout	440					0	Yellow	259
		Bull trout	316	340				0	Yellow	270
		Mountain whitefish	370	580				0	Yellow	279
		Mountain whitefish	398	784				0	Yellow	260
		Mountain whitefish	344					0	Yellow	261
		Mountain whitefish	364	500				0	Yellow	271
		Mountain whitefish	322					0	Yellow	272
		Mountain whitefish	332					0	Yellow	273

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0412 18/08/2001 125.0									
		Mountain whitefish	196	86				0		
		Mountain whitefish	322					0		
		Mountain whitefish	330					0	Yellow	263
		Mountain whitefish	304					0	Yellow	262
		Mountain whitefish	389	624				0	Yellow	264
		Mountain whitefish	306					0	Yellow	278
		Mountain whitefish	294					0	Yellow	277
		Mountain whitefish	208	94				0		
		Mountain whitefish	301					0	Yellow	276
		Mountain whitefish	320					0	Yellow	274
		Mountain whitefish	338					0		
		Mountain whitefish	202	80				0		
		Mountain whitefish	216	98				0		
		Mountain whitefish	324					0	Yellow	275
		Mountain whitefish	261					0	Yellow	282
		Mountain whitefish	245	148				0		
		Mountain whitefish	186	68				0		
		Mountain whitefish	204	84				0		
		Mountain whitefish	413	662				0	Yellow	251
		Mountain whitefish	267					0	Yellow	269
		Mountain whitefish	315					0	Yellow	280
		Mountain whitefish	313					0	Yellow	268
		Mountain whitefish	338					0	Yellow	267
		Mountain whitefish	336					0	Yellow	266
		Mountain whitefish	349					0	Yellow	265
		Mountain whitefish	199	78				0		
		Rainbow trout	335					0	Yellow	281
		Rainbow trout	159	42				0		
		Arctic grayling	383	624				0	Yellow	1279
		Bull trout	284	246		Fin Ray	3	0	Yellow	1330
		Largescale sucker	415	1020				0	Yellow	1314
		Largescale sucker	439	906				0	Yellow	1280
		Largescale sucker	483	1316				0	Yellow	1307
		Longnose sucker	423	1052				0	Yellow	1311
		Mountain whitefish	314					0	Yellow	1327
		Mountain whitefish	339					0	Yellow	1305
		Mountain whitefish	262					0	Yellow	1281
		Mountain whitefish	315					0	Yellow	1325
		Mountain whitefish	298					0	Yellow	1277
		Mountain whitefish	304					0	Yellow	1276
		Mountain whitefish	333					0	Yellow	1301
		Mountain whitefish	304					0	Yellow	1317
		Mountain whitefish	310					0	Yellow	1308
		Mountain whitefish	315					0	Yellow	1313
		Mountain whitefish	440	1010				0	Yellow	1282
		Mountain whitefish	283					0	Yellow	1306
		Mountain whitefish	227					0		
		Mountain whitefish	271					0	Yellow	1304
		Mountain whitefish	333					0	Yellow	1309

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0412 18/08/2001 125.0									
		Mountain whitefish	221					0		
		Mountain whitefish	299					0	Yellow	1312
		Mountain whitefish	335					0	Yellow	1302
		Mountain whitefish	343					0	Yellow	1303
		Mountain whitefish	305					0	Yellow	1316
		Mountain whitefish	286					0	Yellow	1322
		Mountain whitefish	305					0	Yellow	1329
		Mountain whitefish	331					0	Yellow	1318
		Mountain whitefish	223					0		
		Mountain whitefish	308					0	Yellow	1319
		Mountain whitefish	298					0	Yellow	1278
		Mountain whitefish	324					0	Yellow	1321
		Mountain whitefish	340					0		
		Mountain whitefish	229					0		
		Mountain whitefish	318					0	Yellow	1315
		Mountain whitefish	392	612				0	Yellow	1323
		Mountain whitefish	328					0	Yellow	1324
		Mountain whitefish	222					0		
		Mountain whitefish	311					0	Yellow	1326
		Mountain whitefish	295					0	Yellow	1328
		Mountain whitefish	240					0		
		Mountain whitefish	274					0	Yellow	1320
		Rainbow trout	192					0		
		Rainbow trout	377	574				0	Yellow	1310
	ES0413 18/08/2001 123.0									
		Arctic grayling	378	770	10			0	Yellow	286
		Arctic grayling	239	162				0		
		Arctic grayling	278	244				0	Yellow	292
		Arctic grayling	180	76				0		
		Bull trout	283	242				0	Yellow	302
		Bull trout	369	474				0	Yellow	300
		Bull trout	258	178				0	Yellow	298
		Mountain whitefish	319					0	Yellow	283
		Mountain whitefish	295					0	Yellow	297
		Mountain whitefish	361	516				0	Yellow	289
		Mountain whitefish	304					0	Yellow	288
		Mountain whitefish	305					0		
		Mountain whitefish	199	76				0		
		Mountain whitefish	339					0		
		Mountain whitefish	323					0	Yellow	301
		Mountain whitefish	347					0		
		Mountain whitefish	331					0	Yellow	295
		Mountain whitefish	353					0	Yellow	284
		Mountain whitefish	285					0	Yellow	285
		Mountain whitefish	259					0	Yellow	299
		Mountain whitefish	320					0	Yellow	290
		Mountain whitefish	272					0	Yellow	296
		Mountain whitefish	208	80				0		
		Mountain whitefish	235	134				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0413 18/08/2001 123.0									
		Mountain whitefish	222	108				0		
		Mountain whitefish	318					0	Yellow	291
		Mountain whitefish	330					0	Yellow	294
		Mountain whitefish	140	48				0		
		Mountain whitefish	377	640				0	Yellow	293
		Mountain whitefish	201	80				0		
		Mountain whitefish	205	94				0		
		Mountain whitefish	328					0	Yellow	287
		Bull trout	307	288		Fin Ray	3	0	Yellow	1369
		Bull trout	381	588		Fin Ray	4	0	Yellow	1368
		Bull trout	302	256		Fin Ray		0	Yellow	1372
		Kokanee	142	36		Scale	1	0		
		Largescale sucker	482	1616				0		
		Largescale sucker	478	1394				0	Yellow	1334
		Largescale sucker	464	1512				0	Yellow	1333
		Largescale sucker	473	1392				0	Yellow	1339
		Largescale sucker	505	1802				0	Yellow	1341
		Longnose sucker	399	874	9			0	Yellow	1350
		Longnose sucker	369	648				0	Yellow	1342
		Longnose sucker	356	554				0	Yellow	1338
		Longnose sucker	380	750				0	Yellow	1336
		Longnose sucker	348	564				0	Yellow	1359
		Longnose sucker	446	1088				0	Yellow	1343
		Mountain whitefish	290					0	Yellow	1358
		Mountain whitefish	311					0	Yellow	1362
		Mountain whitefish	218					0		
		Mountain whitefish	264					0	Yellow	1366
		Mountain whitefish	208					0		
		Mountain whitefish	347					0		
		Mountain whitefish	292					0	Yellow	1355
		Mountain whitefish	303					0	Yellow	1365
		Mountain whitefish	316					0	Yellow	1364
		Mountain whitefish	310					0	Yellow	1356
		Mountain whitefish	307					0	Yellow	1357
		Mountain whitefish	253					0	Yellow	1363
		Mountain whitefish	303					0	Yellow	1361
		Mountain whitefish	264					0	Yellow	1367
		Mountain whitefish	266					0	Yellow	1354
		Mountain whitefish	238					0		
		Mountain whitefish	292					0	Yellow	1337
		Mountain whitefish	233					0		
		Mountain whitefish	307					0	Yellow	1371
		Mountain whitefish	327					0		
		Mountain whitefish	433	1114				0	Yellow	1332
		Mountain whitefish	314					0	Yellow	1331
		Mountain whitefish	217					0		
		Mountain whitefish	381	654				0	Yellow	1352
		Mountain whitefish	306					0		
		Mountain whitefish	217					0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0413 18/08/2001 123.0									
		Mountain whitefish	270					0	Yellow	1346
		Mountain whitefish	297					0	Yellow	1360
		Mountain whitefish	245					0		
		Mountain whitefish	298					0	Yellow	1340
		Mountain whitefish	294					0	Yellow	1347
		Mountain whitefish	260					0	Yellow	1348
		Mountain whitefish	277					0	Yellow	1351
		Mountain whitefish	288					0	Yellow	1370
		Mountain whitefish	212					0		
		Northern pikeminnow	423	884				0	Yellow	1335
		Rainbow trout	355	432				0	Yellow	1349
		Rainbow trout	427	778				0	Yellow	1344
		Rainbow trout	365	496				0	Yellow	1345
		Rainbow trout	387	688				0		
		Rainbow trout	347	436				0	Yellow	1353
	ES0414 18/08/2001 121.0									
		Arctic grayling	392	660	10			0	Yellow	311
		Arctic grayling	281	256				0	Yellow	307
		Longnose sucker	413	970		Fin Ray	7	0	Yellow	304
		Mountain whitefish	124	24				0		
		Mountain whitefish	255					0	Yellow	310
		Mountain whitefish	160	38				0		
		Mountain whitefish	293					0	Yellow	304
		Mountain whitefish	132	22				0		
		Mountain whitefish	189	66				0		
		Mountain whitefish	241	140				0		
		Mountain whitefish	141	28				0		
		Mountain whitefish	132	27				0		
		Mountain whitefish	190	64				0		
		Mountain whitefish	205	80				0		
		Mountain whitefish	261					0	Yellow	316
		Mountain whitefish	133	22				0		
		Mountain whitefish	139	24				0		
		Mountain whitefish	296					0	Yellow	312
		Mountain whitefish	214	108				0		
		Mountain whitefish	218	116				0		
		Mountain whitefish	151	34				0		
		Mountain whitefish	137	24				0		
		Mountain whitefish	250					0	Yellow	315
		Mountain whitefish	308					0	Yellow	306
		Mountain whitefish	266					0	Yellow	313
		Mountain whitefish	301					0	Yellow	305
		Mountain whitefish	374	586				0	Yellow	303
		Mountain whitefish	298					0	Yellow	309
		Mountain whitefish	306					0	Yellow	308
		Mountain whitefish	306					0		
		Mountain whitefish	134	26				0		
		Mountain whitefish	254					0	Yellow	314
		Rainbow trout	156	48				0		

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0414 18/08/2001 121.0									
		Rainbow trout	178	56				0		
		Bull trout	558	1512		Fin Ray	7	0	Yellow	1428
		Bull trout	455	840		Fin Ray	6	0	Yellow	1423
		Bull trout	462	912		Fin Ray	5	0	Yellow	1418
		Largescale sucker	486					0	Yellow	1407
		Longnose sucker	396	642				0	Yellow	1392
		Longnose sucker	396	744				0	Yellow	1424
		Mountain whitefish	262					0	Yellow	1395
		Mountain whitefish	306					0	Yellow	1394
		Mountain whitefish	317					0	Yellow	1393
		Mountain whitefish	223					0		
		Mountain whitefish	333					0	Yellow	1391
		Mountain whitefish	305					0	Yellow	1390
		Mountain whitefish	305					0	Yellow	1396
		Mountain whitefish	310					0	Yellow	1399
		Mountain whitefish	358					0	Yellow	1400
		Mountain whitefish	306					0	Yellow	1411
		Mountain whitefish	334					0	Yellow	1386
		Mountain whitefish	425	776				0	Yellow	1377
		Mountain whitefish	300					0	Yellow	1388
		Mountain whitefish	291					0		
		Mountain whitefish	322					0	Yellow	1419
		Mountain whitefish	301					0	Yellow	1380
		Mountain whitefish	324					0	Yellow	1381
		Mountain whitefish	337					0	Yellow	1382
		Mountain whitefish	306					0	Yellow	1383
		Mountain whitefish	318					0	Yellow	1389
		Mountain whitefish	351					0	Yellow	1385
		Mountain whitefish	300					0	Yellow	1402
		Mountain whitefish	323					0	Yellow	1376
		Mountain whitefish	321					0	Yellow	1422
		Mountain whitefish	308					0	Yellow	1412
		Mountain whitefish	339					0	Yellow	1413
		Mountain whitefish	323					0	Yellow	1414
		Mountain whitefish	325					0		
		Mountain whitefish	259					0	Yellow	1426
		Mountain whitefish	91					0		
		Mountain whitefish	302					0	Yellow	1425
		Mountain whitefish	316					0	Yellow	1384
		Mountain whitefish	308					0	Yellow	1406
		Mountain whitefish	330					0	Yellow	1398
		Mountain whitefish	316					0	Yellow	1387
		Mountain whitefish	312					0	Yellow	1401
		Mountain whitefish	308					0	Yellow	1403
		Mountain whitefish	331					0	Yellow	1404
		Mountain whitefish	304					0	Yellow	1378
		Mountain whitefish	304					0		
		Mountain whitefish	301					0		
		Mountain whitefish	331					0	Yellow	1408

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

Appendix C Table C1. Life history data for fish sampled during Phase I of the Peace River Fish Community Indexing Program, 2001

Area and Waterbody	Site Label Sample Date and Kilometre	Common Name	Fork Length (mm)	Weight (gm)	Sexual Maturity	Age Structure	Age	Capt. Code	Tag Colour	Tag Number
Zone 4 Peace River										
	ES0414 18/08/2001 121.0									
		Mountain whitefish	320					0	Yellow	1409
		Mountain whitefish	307					0		
		Mountain whitefish	324					0	Yellow	1375
		Mountain whitefish	335					0	Yellow	1405
		Mountain whitefish	369					0		
		Mountain whitefish	313					0	Yellow	1410
		Mountain whitefish	371					0	Yellow	1374
		Mountain whitefish	232					0		
		Mountain whitefish	211					0		
		Mountain whitefish	253					0	Yellow	1373
		Mountain whitefish	285					0	Yellow	1379
		Mountain whitefish	317					0	Yellow	1397
		Rainbow trout	352	490				0	Yellow	1427
		Rainbow trout	404	608				0	Yellow	1421
		Rainbow trout	322	322				0	Yellow	1416
		Rainbow trout	342	440				0	Yellow	1415
		Rainbow trout	402	648				0	Yellow	1420
		Rainbow trout	398	654				0	Yellow	1417

Sexual Maturity Codes: 7 gravid male; 17 gravid female; 8 ripe male; 18 ripe female; 9 spent male; 19 spent female.

Capture Codes: 0 released; 1 mortality; 2 recapture; 4 preserved; 5 recapture (no tag).

APPENDIX D
FISH CATCH RATES

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 1									
	ES0101	SFC							
			26/08/2001	10:15:00 AM	1300	627			
							Bull trout	1	*0.77*
							Largescale sucker	1	*0.77*
							Longnose sucker	5	*3.85*
							Mountain whitefish	9	*6.92*
			21/10/2001	11:30:00 AM	1500	526			
							Arctic grayling	1	*0.67*
							Longnose sucker	2	*1.33*
							Mountain whitefish	7	*4.67*
							Rainbow trout	1	*0.67*
	ES0102	SLC							
			26/08/2001	11:00:00 AM	2100	1602			
							Goldeye	1	*0.48*
							Largescale sucker	2	*0.95*
							Longnose sucker	2	*0.95*
							Mountain whitefish	5	*2.38*
			21/10/2001	12:00:00 PM	1800	959			
							Largescale sucker	1	*0.56*
							Longnose sucker	9	*5.00*
							Mountain whitefish	3	*1.67*
							Northern pike	1	*0.56*
							Walleye	1	*0.56*
	ES0103	SLN							
			26/08/2001	11:45:00 AM	1900	921			
							Largescale sucker	4	*2.11*
							Longnose sucker	1	*0.53*
			21/10/2001	12:30:00 PM	1500	855			
							Bull trout	1	*0.67*
							Largescale sucker	1	*0.67*
							Longnose sucker	11	*7.33*
							Mountain whitefish	7	*4.67*
							Trout-perch	1	*0.67*
							Walleye	11	*7.33*
	ES0104	SLN							
			26/08/2001	12:30:00 PM	400	880			
							Burbot	1	*2.50*
							Goldeye	4	*10.00*
							Largescale sucker	24	*60.00*
							Longnose sucker	1	*2.50*
							Northern pikeminnow	1	*2.50*
							Walleye	8	*20.00*
			21/10/2001	1:00:00 PM	400	1080			
							Walleye	1	*2.50*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 1									
	ES0105	CON							
			26/08/2001	1:30:00 PM	700	471			
							Burbot	1	*1.43*
							Largescale sucker	18	*25.71*
							Longnose sucker	1	*1.43*
							Walleye	1	*1.43*
			21/10/2001	2:30:00 PM	700	726			
							Arctic grayling	1	*1.43*
							Longnose sucker	3	*4.29*
							Mountain whitefish	1	*1.43*
							Walleye	2	*2.86*
	ES0106	SFC							
			26/08/2001	2:30:00 PM	200	1182			
							Burbot	1	*5.00*
							Goldeye	1	*5.00*
							Largescale sucker	3	*15.00*
							Longnose sucker	2	*10.00*
							Mountain whitefish	6	*30.00*
							Northern pikeminnow	1	*5.00*
							Walleye	1	*5.00*
			21/10/2001	3:00:00 PM	1300	585			
							Longnose sucker	4	*3.08*
							Mountain whitefish	3	*2.31*
							Northern pike	1	*0.77*
	ES0107	SFN							
			26/08/2001	3:30:00 PM	2000	1403			
							Bull trout	2	*1.00*
							Lake chub	1	*0.50*
							Largescale sucker	1	*0.50*
							Longnose sucker	6	*3.00*
							Mountain whitefish	4	*2.00*
							Rainbow trout	1	*0.50*
							Redside shiner	1	*0.50*
			21/10/2001	3:30:00 PM	600	303			
							Largescale sucker	3	*5.00*
							Longnose sucker	4	*6.67*
							Mountain whitefish	19	*31.67*
	ES0108	SLC							
			26/08/2001	4:15:00 PM	200	1122			
							Longnose sucker	2	*10.00*
							Mountain whitefish	5	*25.00*
			21/10/2001	4:15:00 PM	2000	1267			
							Bull trout	2	*1.00*
							Longnose sucker	4	*2.00*
							Mountain whitefish	3	*1.50*
							Walleye	1	*0.50*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 1									
	ES0109	SFN							
			26/08/2001	5:00:00 PM	2200	1398			
							Arctic grayling	2	*0.91*
							Largescale sucker	2	*0.91*
							Longnose sucker	8	*3.64*
							Mountain whitefish	6	*2.73*
							Walleye	1	*0.45*
			22/10/2001	11:30:00 AM	1200	1600			
							Arctic grayling	3	*2.50*
							Bull trout	3	*2.50*
							Largescale sucker	3	*2.50*
							Longnose sucker	4	*3.33*
							Mountain whitefish	22	*18.33*
	ES0110	SFN							
			26/08/2001	5:45:00 PM	2500	1159			
							Arctic grayling	1	*0.40*
							Burbot	2	*0.80*
							Longnose sucker	9	*3.60*
							Mountain whitefish	17	*6.80*
							Northern pikeminnow	1	*0.40*
			22/10/2001	12:00:00 PM	2000	723			
							Arctic grayling	1	*0.50*
							Bull trout	1	*0.50*
							Longnose dace	1	*0.50*
							Longnose sucker	6	*3.00*
							Mountain whitefish	22	*11.00*
	ES0111	SFC							
			27/08/2001	10:30:00 AM	2000	1291			
							Goldeye	1	*0.50*
							Longnose sucker	2	*1.00*
							Mountain whitefish	8	*4.00*
			22/10/2001	1:30:00 PM	1400	1001			
							Longnose sucker	1	*0.71*
							Rainbow trout	1	*0.71*
	ES0112	CON							
			27/08/2001	11:15:00 AM	500	350			
							Bull trout	1	*2.00*
							Largescale sucker	9	*18.00*
							Longnose sucker	1	*2.00*
							Mountain whitefish	2	*4.00*
							Northern pikeminnow	1	*2.00*
			22/10/2001	2:00:00 PM	500	461			
							Bull trout	2	*4.00*
							Longnose sucker	2	*4.00*
							Mountain whitefish	10	*20.00*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 1									
	ES0113	SFN							
			27/08/2001	11:45:00 AM	2000	1329			
							Burbot	1	*0.50*
							Longnose sucker	1	*0.50*
							Mountain whitefish	7	*3.50*
							Northern pike	1	*0.50*
							Walleye	3	*1.50*
			22/10/2001	2:30:00 PM	2000	1076			
							Arctic grayling	1	*0.50*
							Largescale sucker	1	*0.50*
							Longnose sucker	1	*0.50*
							Mountain whitefish	16	*8.00*
							Rainbow trout	2	*1.00*
							Trout-perch	1	*0.50*
	ES0114	SFC							
			27/08/2001	1:30:00 PM	2000	1638			
							Goldeye	2	*1.00*
							Largescale sucker	1	*0.50*
							Longnose sucker	3	*1.50*
							Mountain whitefish	10	*5.00*
							Redside shiner	2	*1.00*
			22/10/2001	3:30:00 PM	1800	1122			
							Bull trout	1	*0.56*
							Longnose sucker	1	*0.56*
							Mountain whitefish	8	*4.44*
							Northern pike	1	*0.56*
							Rainbow trout	1	*0.56*
Zone 2									
	ES0201	SLN							
			23/08/2001	11:30:00 AM	800	527			
							Longnose sucker	1	*1.25*
							Mountain whitefish	2	*2.50*
			18/10/2001	11:45:00 AM	800	725			
							Lake whitefish	2	*2.50*
							Largescale sucker	5	*6.25*
							Longnose sucker	8	*10.00*
							Mountain whitefish	5	*6.25*
							Northern pike	4	*5.00*
							Rainbow trout	1	*1.25*
							Walleye	5	*6.25*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 2									
	ES0202	SLN							
			23/08/2001	12:15:00 PM	2000	1318			
							Arctic grayling	2	*1.00*
							Bull trout	1	*0.50*
							Largescale sucker	3	*1.50*
							Longnose sucker	4	*2.00*
							Mountain whitefish	13	*6.50*
			18/10/2001	2:00:00 PM	1800	841			
							Arctic grayling	4	*2.22*
							Longnose sucker	8	*4.44*
							Mountain whitefish	9	*5.00*
							Trout-perch	1	*0.56*
	ES0203	CON							
			23/08/2001	1:30:00 PM	500	863			
							Largescale sucker	2	*4.00*
							Mountain whitefish	1	*2.00*
							Northern pike	1	*2.00*
							Northern pikeminnow	1	*2.00*
							Redside shiner	1	*2.00*
			18/10/2001	2:40:00 PM	500	621			
							Arctic grayling	1	*2.00*
							Bull trout	1	*2.00*
							Longnose sucker	2	*4.00*
							Mountain whitefish	15	*30.00*
	ES0204	SFC							
			23/08/2001	2:45:00 PM	2000	1158			
							Arctic grayling	4	*2.00*
							Bull trout	2	*1.00*
							Largescale sucker	2	*1.00*
							Longnose sucker	12	*6.00*
							Mountain whitefish	41	*20.50*
							Redside shiner	2	*1.00*
			18/10/2001	3:15:00 PM	1000	591			
							Arctic grayling	7	*7.00*
							Lake whitefish	1	*1.00*
							Mountain whitefish	42	*42.00*
							Redside shiner	1	*1.00*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 2									
	ES0205	SLN							
			23/08/2001	3:30:00 PM	1500	805			
							Arctic grayling	3	*2.00*
							Largescale sucker	1	*0.67*
							Longnose sucker	3	*2.00*
							Mountain whitefish	2	*1.33*
			18/10/2001	4:00:00 PM	1300	830			
							Arctic grayling	5	*3.85*
							Largescale sucker	1	*0.77*
							Longnose sucker	13	*10.00*
							Mountain whitefish	1	*0.77*
	ES0206	SFN							
			23/08/2001	4:30:00 PM	900	845			
							Bull trout	2	*2.22*
							Largescale sucker	1	*1.11*
							Longnose dace	1	*1.11*
							Longnose sucker	1	*1.11*
							Mountain whitefish	32	*35.56*
							Northern pike	1	*1.11*
			18/10/2001	4:30:00 PM	500	334			
							Longnose sucker	1	*2.00*
							Mountain whitefish	30	*60.00*
	ES0207	BAC							
			23/08/2001	5:15:00 PM	1400	1637			
							Largescale sucker	2	*1.43*
							Northern pike	4	*2.86*
							Redside shiner	1	*0.71*
							Yellow perch	4	*2.86*
			19/10/2001	11:30:00 AM	1400	1375			
							Lake whitefish	1	*0.71*
							Largescale sucker	6	*4.29*
							Northern pike	4	*2.86*
							White sucker	4	*2.86*
	ES0208	SLC							
			24/08/2001	10:15:00 AM	800	627			
							Arctic grayling	6	*7.50*
							Largescale sucker	3	*3.75*
							Longnose sucker	8	*10.00*
							Mountain whitefish	9	*11.25*
			19/10/2001	12:15:00 PM	800	506			
							Arctic grayling	1	*1.25*
							Bull trout	1	*1.25*
							Largescale sucker	1	*1.25*
							Longnose sucker	3	*3.75*
							Mountain whitefish	5	*6.25*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 2									
	ES0209	SLN							
			24/08/2001	11:15:00 AM	1400	1184			
							Arctic grayling	1	*0.71*
							Longnose sucker	7	*5.00*
							Mountain whitefish	2	*1.43*
			19/10/2001	2:15:00 PM	600	915			
							Arctic grayling	1	*1.67*
							Bull trout	1	*1.67*
							Longnose sucker	4	*6.67*
							Mountain whitefish	4	*6.67*
							Rainbow trout	2	*3.33*
	ES0210	SFN							
			24/08/2001	12:00:00 PM	2200	1286			
							Bull trout	1	*0.45*
							Lake whitefish	1	*0.45*
							Largescale sucker	5	*2.27*
							Longnose sucker	8	*3.64*
							Mountain whitefish	21	*9.55*
							Northern pike	4	*1.82*
			19/10/2001	3:00:00 PM	1000	385			
							Arctic grayling	1	*1.00*
							Bull trout	1	*1.00*
							Kokanee	1	*1.00*
							Largescale sucker	1	*1.00*
							Longnose sucker	6	*6.00*
							Mountain whitefish	5	*5.00*
	ES0211	BAC							
			24/08/2001	1:30:00 PM	700	1683			
							Northern pike	3	*4.29*
							Walleye	1	*1.43*
							White sucker	2	*2.86*
			19/10/2001	3:30:00 PM	700	1033			
							Largescale sucker	2	*2.86*
							Longnose sucker	1	*1.43*
							Northern pike	2	*2.86*
	ES0212	SFC							
			24/08/2001	2:00:00 PM	1600	858			
							None	0	*0.00*
			19/10/2001	4:00:00 PM	1400	631			
							Largescale sucker	5	*3.57*
							Longnose sucker	4	*2.86*
							Mountain whitefish	1	*0.71*
							Northern pike	2	*1.43*
							Northern pikeminnow	1	*0.71*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 2									
	ES0213	SLC							
			24/08/2001	2:30:00 PM	1000	856			
							Longnose sucker	6	*6.00*
							Mountain whitefish	13	*13.00*
			19/10/2001	4:30:00 PM	800	519			
							Arctic grayling	1	*1.25*
							Bull trout	1	*1.25*
							Longnose sucker	6	*7.50*
							Mountain whitefish	3	*3.75*
	ES0214	SLN							
			24/08/2001	3:15:00 PM	2000	1007			
							Largescale sucker	6	*3.00*
							Longnose sucker	7	*3.50*
							Mountain whitefish	8	*4.00*
							Northern pike	1	*0.50*
			19/10/2001	4:45:00 PM	1200	630			
							Arctic grayling	2	*1.67*
							Largescale sucker	5	*4.17*
							Longnose sucker	15	*12.50*
							Mountain whitefish	3	*2.50*
							White sucker	1	*0.83*
	ES0215	CON							
			24/08/2001	4:00:00 PM	1000	647			
							None	0	*0.00*
			19/10/2001	5:00:00 PM	500	659			
							Mountain whitefish	4	*8.00*
	ES0216	SFC							
			23/08/2001	11:40:00 AM	1200	529			
							Arctic grayling	1	*0.83*
							Mountain whitefish	24	*20.00*
			18/10/2001	12:30:00 PM	1200	767			
							Arctic grayling	17	*14.17*
							Bull trout	2	*1.67*
							Longnose sucker	8	*6.67*
							Mountain whitefish	17	*14.17*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 2									
	ES0217	SFN							
			24/08/2001	10:00:00 AM	1000	627			
							Longnose sucker	3	*3.00*
							Mountain whitefish	5	*5.00*
							Redside shiner	1	*1.00*
			19/10/2001	1:00:00 PM	1000	395			
							Arctic grayling	3	*3.00*
							Bull trout	1	*1.00*
							Kokanee	1	*1.00*
							Largescale sucker	2	*2.00*
							Longnose sucker	1	*1.00*
							Mountain whitefish	36	*36.00*
							Redside shiner	1	*1.00*
Zone 3									
	ES0301	SFC							
			20/08/2001	1:00:00 PM	2000	1440			
							Arctic grayling	9	*4.50*
							Bull trout	1	*0.50*
							Mountain whitefish	17	*8.50*
							Rainbow trout	1	*0.50*
			15/10/2001	2:30:00 PM	900	492			
							Arctic grayling	3	*3.33*
							Bull trout	2	*2.22*
							Longnose sucker	1	*1.11*
							Mountain whitefish	25	*27.78*
							Rainbow trout	2	*2.22*
	ES0302	SFN							
			20/08/2001	2:00:00 PM	2000	940			
							Bull trout	1	*0.50*
							Largescale sucker	9	*4.50*
							Longnose sucker	18	*9.00*
							Mountain whitefish	21	*10.50*
							Northern pikeminnow	1	*0.50*
			15/10/2001	3:15:00 PM	400	250			
							Mountain whitefish	43	*107.50*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 3									
	ES0303	SFC							
			20/08/2001	3:00:00 PM	2000	1874			
							Arctic grayling	8	*4.00*
							Brook Trout	1	*0.50*
							Mountain whitefish	13	*6.50*
							Prickly sculpin	1	*0.50*
							Rainbow trout	3	*1.50*
			15/10/2001	4:15:00 PM	1300	872			
							Arctic grayling	4	*3.08*
							Bull trout	1	*0.77*
							Largescale sucker	3	*2.31*
							Longnose sucker	8	*6.15*
							Mountain whitefish	23	*17.69*
							Rainbow trout	3	*2.31*
	ES0304	SFC							
			20/08/2001	4:00:00 PM	1000	951			
							Arctic grayling	6	*6.00*
							Longnose sucker	1	*1.00*
							Mountain whitefish	22	*22.00*
							Rainbow trout	1	*1.00*
			16/10/2001	11:30:00 AM	1400	788			
							Arctic grayling	5	*3.57*
							Bull trout	1	*0.71*
							Longnose sucker	8	*5.71*
							Mountain whitefish	33	*23.57*
							Rainbow trout	4	*2.86*
	ES0305	SFN							
			20/08/2001	5:00:00 PM	2000	1177			
							Bull trout	1	*0.50*
							Kokanee	1	*0.50*
							Largescale sucker	4	*2.00*
							Longnose sucker	4	*2.00*
							Mountain whitefish	30	*15.00*
			16/10/2001	12:00:00 PM	300	496			
							Bull trout	1	*3.33*
							Largescale sucker	1	*3.33*
							Longnose sucker	4	*13.33*
							Mountain whitefish	14	*46.67*
							Rainbow trout	1	*3.33*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 3									
	ES0306	SFC							
			21/08/2001	10:30:00 AM	2000	1790			
							Arctic grayling	3	*1.50*
							Mountain whitefish	32	*16.00*
			15/10/2001	10:30:00 AM	1000	568			
							Arctic grayling	5	*5.00*
							Bull trout	1	*1.00*
							Largescale sucker	11	*11.00*
							Longnose sucker	12	*12.00*
							Mountain whitefish	15	*15.00*
							Northern pikeminnow	1	*1.00*
							Rainbow trout	6	*6.00*
	ES0307	SFN							
			21/08/2001	11:45:00 AM	1500	927			
							Largescale sucker	1	*0.67*
							Longnose sucker	4	*2.67*
							Mountain whitefish	69	*46.00*
							Rainbow trout	1	*0.67*
			15/10/2001	11:30:00 AM	1000	686			
							Bull trout	1	*1.00*
							Largescale sucker	2	*2.00*
							Mountain whitefish	25	*25.00*
							Northern pike	1	*1.00*
	ES0308	BAC							
			21/08/2001	1:00:00 PM	600	694			
							Longnose sucker	1	*1.67*
							Redside shiner	3	*5.00*
			15/10/2001	12:30:00 PM	600	639			
							Longnose sucker	2	*3.33*
							Mountain whitefish	7	*11.67*
	ES0309	SFN							
			21/08/2001	2:15:00 PM	1000	569			
							Burbot	1	*1.00*
							Largescale sucker	9	*9.00*
							Longnose sucker	13	*13.00*
							Mountain whitefish	4	*4.00*
			15/10/2001	1:00:00 PM	800	463			
							Mountain whitefish	43	*53.75*
	ES0310	SFN							
			21/08/2001	3:00:00 PM	2000	854			
							Bull trout	1	*0.50*
							Longnose sucker	13	*6.50*
							Mountain whitefish	22	*11.00*
			15/10/2001	1:45:00 PM	200	171			
							Mountain whitefish	35	*175.00*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 3									
	ES0311	SLC							
			21/08/2001	4:15:00 PM	1500	854			
							Bull trout	2	*1.33*
							Longnose sucker	1	*0.67*
							Mountain whitefish	40	*26.67*
			16/10/2001	1:30:00 PM	1300	655			
							Bull trout	3	*2.31*
							Largescale sucker	1	*0.77*
							Longnose sucker	2	*1.54*
							Mountain whitefish	16	*12.31*
							Rainbow trout	1	*0.77*
	ES0312	SFC							
			21/08/2001	5:00:00 PM	2000	1397			
							Arctic grayling	5	*2.50*
							Bull trout	4	*2.00*
							Largescale sucker	1	*0.50*
							Longnose sucker	11	*5.50*
							Mountain whitefish	69	*34.50*
							Northern pike	1	*0.50*
							Rainbow trout	1	*0.50*
			16/10/2001	2:30:00 PM	1500	747			
							Arctic grayling	3	*2.00*
							Bull trout	5	*3.33*
							Largescale sucker	1	*0.67*
							Longnose sucker	11	*7.33*
							Mountain whitefish	38	*25.33*
	ES0313	CON							
			21/08/2001	2:00:00 PM	300	532			
							Largescale sucker	1	*3.33*
							Longnose sucker	2	*6.67*
							Mountain whitefish	7	*23.33*
			16/10/2001	1:00:00 PM	300	649			
							Longnose sucker	3	*10.00*
							Mountain whitefish	2	*6.67*
Zone 4									
	ES0401	SFN							
			17/08/2001	9:30:00 AM	800	678			
							Arctic grayling	1	*1.25*
							Bull trout	2	*2.50*
							Mountain whitefish	140	*175.00*
			12/10/2001	11:30:00 AM	600	289			
							Mountain whitefish	64	*106.67*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 4									
	ES0402	CON							
			17/08/2001	10:00:00 AM	200	225			
							Largescale sucker	1	*5.00*
							Mountain whitefish	1	*5.00*
			12/10/2001	12:30:00 PM	200	443			
							Bull trout	2	*10.00*
							Kokanee	1	*5.00*
							Lake whitefish	2	*10.00*
							Mountain whitefish	28	*140.00*
							Rainbow trout	1	*5.00*
	ES0403	SFC							
			17/08/2001	10:45:00 AM	1000	725			
							Arctic grayling	1	*1.00*
							Largescale sucker	1	*1.00*
							Longnose sucker	1	*1.00*
							Mountain whitefish	31	*31.00*
							Rainbow trout	2	*2.00*
			12/10/2001	1:30:00 PM	700	406			
							Mountain whitefish	54	*77.14*
							Rainbow trout	2	*2.86*
	ES0404	SFN							
			17/08/2001	12:00:00 PM	1000	482			
							Arctic grayling	3	*3.00*
							Bull trout	2	*2.00*
							Mountain whitefish	52	*52.00*
			12/10/2001	2:30:00 PM	700	336			
							Longnose sucker	1	*1.43*
							Mountain whitefish	44	*62.86*
	ES0405	SFC							
			17/08/2001	1:00:00 PM	1000	690			
							Arctic grayling	1	*1.00*
							Bull trout	1	*1.00*
							Largescale sucker	1	*1.00*
							Mountain whitefish	52	*52.00*
							Prickly sculpin	1	*1.00*
			12/10/2001	3:30:00 PM	1400	346			
							Bull trout	1	*0.71*
							Longnose sucker	3	*2.14*
							Mountain whitefish	63	*45.00*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 4									
	ES0406	CON							
			17/08/2001	2:15:00 PM	200	331			
							Largescale sucker	6	*30.00*
							Longnose sucker	2	*10.00*
							Mountain whitefish	1	*5.00*
							Northern pikeminnow	1	*5.00*
			12/10/2001	4:30:00 PM	200	362			
							Lake whitefish	1	*5.00*
							Largescale sucker	1	*5.00*
							Mountain whitefish	5	*25.00*
	ES0407	SFC							
			17/08/2001	3:15:00 PM	1000	518			
							Arctic grayling	3	*3.00*
							Mountain whitefish	43	*43.00*
							Rainbow trout	3	*3.00*
			13/10/2001	10:00:00 AM	900	377			
							Arctic grayling	2	*2.22*
							Bull trout	2	*2.22*
							Largescale sucker	1	*1.11*
							Longnose sucker	1	*1.11*
							Mountain whitefish	57	*63.33*
							Rainbow trout	8	*8.89*
	ES0408	SFC							
			17/08/2001	4:30:00 PM	1000	548			
							Arctic grayling	2	*2.00*
							Mountain whitefish	53	*53.00*
							Rainbow trout	7	*7.00*
			13/10/2001	11:15:00 AM	900	349			
							Bull trout	3	*3.33*
							Largescale sucker	2	*2.22*
							Longnose sucker	4	*4.44*
							Mountain whitefish	34	*37.78*
							Rainbow trout	4	*4.44*
	ES0409	SFN							
			18/08/2001	12:30:00 PM	700	629			
							Bull trout	2	*2.86*
							Mountain whitefish	61	*87.14*
	ES0410	SFN							
			18/08/2001	1:30:00 PM	1000	824			
							Mountain whitefish	44	*44.00*
			13/10/2001	12:30:00 PM	600	489			
							Bull trout	2	*3.33*
							Largescale sucker	3	*5.00*
							Longnose sucker	1	*1.67*
							Mountain whitefish	73	*121.67*
							Northern pikeminnow	2	*3.33*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 4									
	ES0411	CON							
			18/08/2001	2:30:00 PM	300	291			
							Largescale sucker	6	*20.00*
							Longnose sucker	2	*6.67*
							Redside shiner	1	*3.33*
			13/10/2001	1:30:00 PM	300	417			
							Largescale sucker	1	*3.33*
							Mountain whitefish	12	*40.00*
	ES0412	SFC							
			18/08/2001	3:15:00 PM	1000	745			
							Arctic grayling	1	*1.00*
							Bull trout	2	*2.00*
							Mountain whitefish	32	*32.00*
							Rainbow trout	2	*2.00*
			13/10/2001	2:30:00 PM	1000	729			
							Arctic grayling	1	*1.00*
							Bull trout	1	*1.00*
							Largescale sucker	3	*3.00*
							Longnose sucker	1	*1.00*
							Mountain whitefish	37	*37.00*
							Northern pike	1	*1.00*
							Rainbow trout	4	*4.00*
	ES0413	SFC							
			18/08/2001	4:30:00 PM	1000	1049			
							Arctic grayling	4	*4.00*
							Bull trout	3	*3.00*
							Mountain whitefish	25	*25.00*
			13/10/2001	3:30:00 PM	1000	600			
							Bull trout	3	*3.00*
							Kokanee	1	*1.00*
							Largescale sucker	5	*5.00*
							Longnose sucker	6	*6.00*
							Mountain whitefish	35	*35.00*
							Northern pikeminnow	1	*1.00*
							Rainbow trout	5	*5.00*

Appendix D TableD1. Boat electrofisher sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Habitat Type	Date	Time	Effort (m)	Effort (s)	Species	No. Recorded	CPUE (Fish/km)
Zone 4									
	ES0414	SFC							
			18/08/2001	5:15:00 PM	700	472			
							Arctic grayling	2	*2.86*
							Longnose sucker	1	*1.43*
							Mountain whitefish	29	*41.43*
							Rainbow trout	2	*2.86*
			13/10/2001	4:30:00 PM	600	535			
							Bull trout	3	*5.00*
							Largescale sucker	1	*1.67*
							Longnose sucker	2	*3.33*
							Mountain whitefish	54	*90.00*
							Northern pike	1	*1.67*
							Rainbow trout	6	*10.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 1								
Peace River	BS0101							
		25/08/2001	4:30:00 PM					
				1	270.0			
						Flathead chub	7	*2.59*
						Lake chub	1	*0.37*
						Sucker spp.	2	*0.74*
		23/10/2001	10:55:00 AM					
				1	135.0			
						None	0	*0.00*
				2	157.5			
						Lake chub	10	*6.35*
						Redside shiner	2	*1.27*
				3	180.0			
						None	0	*0.00*
Beatton River	BS0102							
		25/08/2001	4:45:00 PM					
				1	360.0			
						Lake chub	1	*0.28*
						Longnose sucker	1	*0.28*
						Northern pikeminnow	4	*1.11*
						Redside shiner	1	*0.28*
						Spottail shiner	2	*0.56*
						Trout-perch	1	*0.28*
		23/10/2001	10:30:00 AM					
				1	157.5			
						None	0	*0.00*
				2	157.5			
						Lake chub	1	*0.63*
				3	135.0			
						Northern pikeminnow	1	*0.74*
Kiskatinaw River	BS0103							
		28/08/2001	2:00:00 PM					
				1	225.0			
						None	0	*0.00*
				2	225.0			
						None	0	*0.00*
		23/10/2001	11:30:00 AM					
				1	135.0			
						None	0	*0.00*
				2	135.0			
						None	0	*0.00*
				3	202.5			
						None	0	*0.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 1								
Peace River	BS0104							
		28/08/2001	2:30:00 PM					
				1	202.5			
						Northern pike	1	*0.49*
						Redside shiner	2	*0.99*
						Spottail shiner	1	*0.49*
						Trout-perch	1	*0.49*
				2	225.0			
						Flathead chub	5	*2.22*
						Lake chub	1	*0.44*
						Redside shiner	12	*5.33*
		23/10/2001	12:00:00 PM					
				1	112.5			
						None	0	*0.00*
				2	135.0			
						None	0	*0.00*
				3	157.5			
						None	0	*0.00*
Peace River	BS0105							
		28/08/2001	2:45:00 PM					
				1	292.5			
						None	0	*0.00*
				2	292.5			
						None	0	*0.00*
Peace River	BS0106							
		28/08/2001	3:20:00 PM					
				1	225.0			
						Flathead chub	1	*0.44*
						Northern pikeminnow	1	*0.44*
						Redside shiner	1	*0.44*
Peace River	BS0107							
		28/08/2001	1:45:00 PM					
				1	225.0			
						None	0	*0.00*
				2	225.0			
						None	0	*0.00*
		23/10/2001	12:30:00 PM					
				1	135.0			
						None	0	*0.00*
				2	135.0			
						None	0	*0.00*
				3	135.0			
						None	0	*0.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 1								
Peace River	BS0108							
		28/08/2001	4:00:00 PM					
				1	225.0			
						Longnose sucker	1	*0.44*
						Sucker spp.	1	*0.44*
		23/10/2001	1:00:00 PM					
				1	135.0			
						None	0	*0.00*
				2	135.0			
						None	0	*0.00*
				3	135.0			
						None	0	*0.00*
Peace River	BS0109							
		28/08/2001	4:20:00 PM					
				1	225.0			
						Longnose sucker	9	*4.00*
						Northern pikeminnow	1	*0.44*
						Sucker spp.	144	*64.00*
Peace River	BS0110							
		28/08/2001	5:30:00 PM					
				1	225.0			
						Sucker spp.	1	*0.44*
Zone 2								
Peace River	BS0201							
		24/08/2001	4:30:00 PM					
				1	225.0			
						Redside shiner	5	*2.22*
						Sucker spp.	3	*1.33*
				2	225.0			
						Longnose dace	1	*0.44*
						Redside shiner	10	*4.44*
						Sucker spp.	15	*6.67*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 2								
Peace River	BS0202							
		24/08/2001	5:15:00 PM					
				1	225.0			
						Longnose dace	3	*1.33*
		20/10/2001	4:45:00 PM					
				1	135.0			
						Prickly sculpin	1	*0.74*
				2	135.0			
						None	0	*0.00*
				3	180.0			
						None	0	*0.00*
Peace River	BS0203							
		25/08/2001	10:30:00 AM					
				1	225.0			
						None	0	*0.00*
				2	225.0			
						None	0	*0.00*
		20/10/2001	10:30:00 AM					
				1	157.5			
						Largescale sucker	1	*0.63*
						Longnose sucker	4	*2.54*
				2	202.5			
						Largescale sucker	1	*0.49*
						Longnose sucker	1	*0.49*
				3	135.0			
						None	0	*0.00*
Peace River	BS0204							
		25/08/2001	11:00:00 AM					
				1	225.0			
						None	0	*0.00*
Peace River	BS0205							
		25/08/2001	11:30:00 AM					
				1	225.0			
						Sucker spp.	2	*0.89*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 2								
Peace River	BS0206							
		25/08/2001	12:00:00 PM					
				1	157.5			
						Sucker spp.	5	*3.17*
		20/10/2001	12:00:00 PM					
				1	135.0			
						Longnose sucker	1	*0.74*
						Mountain whitefish	1	*0.74*
						Redside shiner	4	*2.96*
						Spottail shiner	48	*35.56*
						Sucker spp.	10	*7.41*
				2	135.0			
						Northern pikeminnow	1	*0.74*
						Prickly sculpin	1	*0.74*
						Redside shiner	7	*5.19*
						Slimy sculpin	1	*0.74*
						Spoonhead sculpin	1	*0.74*
						Spottail shiner	19	*14.07*
						Sucker spp.	16	*11.85*
						Trout-perch	1	*0.74*
				3	135.0			
						Redside shiner	1	*0.74*
						Spottail shiner	3	*2.22*
						Sucker spp.	3	*2.22*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 2								
Peace River	BS0207							
		25/08/2001	1:00:00 PM					
				1	225.0			
						Redside shiner	20	*8.89*
						Spoonhead sculpin	2	*0.89*
						Spottail shiner	202	*89.78*
						Sucker spp.	201	*89.33*
		20/10/2001	1:30:00 PM					
				1	135.0			
						Redside shiner	1	*0.74*
				2	135.0			
						Spottail shiner	4	*2.96*
						Yellow perch	1	*0.74*
				3	135.0			
						Spottail shiner	2	*1.48*
				4	135.0			
						Longnose sucker	2	*1.48*
						Redside shiner	1	*0.74*
						Spottail shiner	4	*2.96*
						Sucker spp.	2	*1.48*
				5	135.0			
						Largescale sucker	1	*0.74*
						Redside shiner	1	*0.74*
						Spottail shiner	5	*3.70*
						Sucker spp.	3	*2.22*
				6	135.0			
						Redside shiner	2	*1.48*
						Spottail shiner	2	*1.48*
Peace River	BS0208							
		25/08/2001	1:15:00 PM					
				1	180.0			
						None	0	*0.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 2								
Peace River	BS0209							
		25/08/2001	2:15:00 PM					
				1	315.0			
						Northern pike	1	*0.32*
						Spottail shiner	2	*0.63*
						Sucker spp.	112	*35.56*
		20/10/2001	2:30:00 PM					
				1	157.5			
						Sucker spp.	4	*2.54*
				2	157.5			
						Sucker spp.	5	*3.17*
				3	135.0			
						None	0	*0.00*
				4	157.5			
						None	0	*0.00*
				5	135.0			
						None	0	*0.00*
				6	157.5			
						Sucker spp.	1	*0.63*
Moberly River	BS0210							
		20/10/2001	11:30:00 AM					
				1	90.0			
						None	0	*0.00*
				2	157.5			
						Redside shiner	3	*1.90*
				3	135.0			
						Longnose sucker	1	*0.74*
						Sucker spp.	1	*0.74*
Zone 3								

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 3								
Halfway River	BS0301							
		22/08/2001	11:00:00 AM					
				1	270.0			
						Lake chub	4	*1.48*
						Largescale sucker	2	*0.74*
						Northern pikeminnow	3	*1.11*
						Redside shiner	127	*47.04*
						Spottail shiner	1	*0.37*
		17/10/2001	10:00:00 AM					
				1	135.0			
						None	0	*0.00*
				2	157.5			
						None	0	*0.00*
				3	135.0			
						None	0	*0.00*
Peace River	BS0302							
		22/08/2001	11:30:00 AM					
				1	225.0			
						None	0	*0.00*
				2	360.0			
						Mountain whitefish	1	*0.28*
						Sucker spp.	1	*0.28*
		17/10/2001	10:30:00 AM					
				1	157.5			
						Largescale sucker	1	*0.63*
						Longnose sucker	2	*1.27*
				2	157.5			
						Largescale sucker	2	*1.27*
						Longnose sucker	1	*0.63*
				3	157.5			
						None	0	*0.00*
				4	157.5			
						None	0	*0.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 3								
Peace River	BS0304							
		22/08/2001	1:30:00 PM					
				1	360.0			
						None	0	*0.00*
				2	360.0			
						None	0	*0.00*
				3	360.0			
						Sucker spp.	3	*0.83*
		17/10/2001	2:00:00 PM					
				1	112.5			
						None	0	*0.00*
				2	180.0			
						Arctic grayling	1	*0.56*
						Spoonhead sculpin	1	*0.56*
				3	180.0			
						None	0	*0.00*
				4	135.0			
						None	0	*0.00*
				5	135.0			
						Redside shiner	1	*0.74*
				6	157.5			
						None	0	*0.00*
Peace River	BS0307							
		22/08/2001	4:00:00 PM					
				1	382.5			
						None	0	*0.00*
Peace River	BS0308							
		22/08/2001	4:15:00 PM					
				1	225.0			
						None	0	*0.00*
Peace River	BS0309							
		22/08/2001	4:30:00 PM					
				1	337.5			
						None	0	*0.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 3								
Peace River	BS0310							
		22/08/2001	4:50:00 PM					
				1	337.5			
						Spottail shiner	1	*0.30*
		17/10/2001	3:00:00 PM					
				1	225.0			
						None	0	*0.00*
				2	225.0			
						None	0	*0.00*
				3	225.0			
						None	0	*0.00*
Peace River	BS0311							
		17/10/2001	1:00:00 PM					
				1	112.5			
						Redside shiner	1	*0.89*
				2	112.5			
						None	0	*0.00*
				3	180.0			
						None	0	*0.00*
Zone 4								
Peace River	BS0401							
		19/08/2001	10:30:00 AM					
				1	225.0			
						None	0	*0.00*
		14/10/2001	4:30:00 PM					
				1	112.5			
						Kokanee	1	*0.89*
				2	112.5			
						Kokanee	2	*1.78*
				3	112.5			
						None	0	*0.00*
Peace River	BS0402							
		19/08/2001	12:00:00 PM					
				1	135.0			
						Longnose sucker	1	*0.74*
				2	180.0			
						None	0	*0.00*
		14/10/2001	3:00:00 PM					
				1	112.5			
						None	0	*0.00*
				2	180.0			
						Kokanee	12	*6.67*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 4								
Peace River	BS0404							
		19/08/2001	1:00:00 PM					
				1	247.5			
						Largescale sucker	1	*0.40*
						Longnose sucker	3	*1.21*
						Northern pikeminnow	8	*3.23*
						Redside shiner	62	*25.05*
		14/10/2001	11:00:00 AM					
				1	225.0			
						None	0	*0.00*
				2	157.5			
						None	0	*0.00*
				3	180.0			
						None	0	*0.00*
Peace River	BS0405							
		19/08/2001	2:30:00 PM					
				1	337.5			
						None	0	*0.00*
		14/10/2001	12:00:00 PM					
				1	157.5			
						Mountain whitefish	1	*0.63*
				2	157.5			
						None	0	*0.00*
				3	180.0			
						None	0	*0.00*
Peace River	BS0406							
		19/08/2001	3:00:00 PM					
				1	292.5			
						None	0	*0.00*

Appendix D TableD2. Beach seine sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Haul	Effort (m^2)	Species	No. Recorded	CPUE (Fish/100m^2)
Zone 4								
Peace River	BS0407							
		19/08/2001	3:30:00 PM					
				1	270.0			
						Longnose sucker	3	*1.11*
						Mountain whitefish	3	*1.11*
						Sculpin spp.	1	*0.37*
						Spoonhead sculpin	2	*0.74*
						Sucker spp.	80	*29.63*
				2	135.0			
						Mountain whitefish	1	*0.74*
						Spoonhead sculpin	1	*0.74*
						Sucker spp.	1	*0.74*
		14/10/2001	1:00:00 PM					
				1	157.5			
						Sucker spp.	7	*4.44*
				2	135.0			
						Kokanee	17	*12.59*
						Spoonhead sculpin	2	*1.48*
Peace River	BS0409							
		19/08/2001	4:30:00 PM					
				1	270.0			
						Longnose sucker	5	*1.85*
						Sucker spp.	200	*74.07*
Peace River	BS0410							
		19/08/2001	5:30:00 PM					
				1	135.0			
						None	0	*0.00*

Appendix D TableD3. Backpack electrofish sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Effort (m)	Species	No. Recorded	CPUE (Fish/100 m)
Zone 2							
Peace River	EF0201						
		25/08/2001	10:45:00 AM				
				80			
					Longnose dace	11	*13.75*
					Longnose sucker	2	*2.50*
					Slimy sculpin	2	*2.50*
Peace River	EF0202						
		25/08/2001	11:15:00 AM				
				75			
					Longnose dace	2	*2.67*
					Redside shiner	1	*1.33*
					Slimy sculpin	1	*1.33*
					Sucker spp.	25	*33.33*
Moberly River	EF0203						
		25/08/2001	12:00:00 PM				
				65			
					Longnose dace	9	*13.85*
					Longnose sucker	2	*3.08*
					Northern pikeminnow	1	*1.54*
					Redside shiner	6	*9.23*
					Spottail shiner	1	*1.54*
Peace River	EF0204						
		25/08/2001	1:30:00 PM				
				60			
					Longnose sucker	1	*1.67*
					Slimy sculpin	12	*20.00*
Zone 3							
Peace River	EF0301						
		22/08/2001	12:00:00 PM				
				35			
					Lake chub	2	*5.71*
					Prickly sculpin	4	*11.43*
					Sculpin spp.	1	*2.86*
					Slimy sculpin	5	*14.29*

Appendix D TableD3. Backpack electrofish sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Effort (m)	Species	No. Recorded	CPUE (Fish/100 m)
Zone 3							
Cache Creek	EF0302						
		22/08/2001	2:15:00 PM				
				140			
					Lake chub	3	*2.14*
					Largescale sucker	4	*2.86*
					Longnose dace	3	*2.14*
					Longnose sucker	11	*7.86*
					Northern pike	1	*0.71*
					Northern pikeminnow	7	*5.00*
					Peamouth	1	*0.71*
					Redside shiner	24	*17.14*
					Spottail shiner	4	*2.86*
		17/10/2001	11:45:00 AM				
				290			
					Kokanee	1	*0.34*
Zone 4							
Maurice Creek	EF0401						
		19/08/2001	9:50:00 AM				
				151			
					Longnose dace	5	*3.31*
					Longnose sucker	4	*2.65*
					Mountain whitefish	1	*0.66*
					Prickly sculpin	10	*6.62*
					Rainbow trout	1	*0.66*
					Slimy sculpin	3	*1.99*
		14/10/2001	3:30:00 PM				
				235			
					Kokanee	4	*1.70*
					Longnose sucker	1	*0.43*
					Prickly sculpin	1	*0.43*
					Rainbow trout	4	*1.70*
					Slimy sculpin	1	*0.43*

Appendix D TableD3. Backpack electrofish sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Effort (m)	Species	No. Recorded	CPUE (Fish/100 m)
Zone 4							
Lynx Creek	EF0402						
		19/08/2001	11:15:00 AM				
				135			
					Longnose sucker	3	*2.22*
					Northern pikeminnow	2	*1.48*
					Redside shiner	9	*6.67*
					Slimy sculpin	1	*0.74*
		14/10/2001	2:30:00 PM				
				205			
					Bull trout	1	*0.49*
					Kokanee	6	*2.93*
					Longnose sucker	3	*1.46*
					Mountain whitefish	2	*0.98*
					Redside shiner	1	*0.49*
					Slimy sculpin	2	*0.98*
Farrell Creek	EF0403						
		19/08/2001	1:15:00 PM				
				140			
					Lake chub	1	*0.71*
					Largescale sucker	5	*3.57*
					Longnose dace	3	*2.14*
					Longnose sucker	23	*16.43*
					Northern pike	1	*0.71*
					Northern pikeminnow	3	*2.14*
					Peamouth	1	*0.71*
					Redside shiner	22	*15.71*
					Slimy sculpin	1	*0.71*
		14/10/2001	11:00:00 AM				
				198			
					Kokanee	1	*0.51*
					Longnose sucker	3	*1.52*
					Mountain whitefish	2	*1.01*
					Redside shiner	6	*3.03*

Appendix D TableD4. Gill net sampling effort, catch, and catch-per-unit-effort during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Site Label	Date	Time	Effort (m)	Effort (seconds)	Species	No. Recorded	CPUE (Fish/100m * 1h)
Zone 2								
	GN0201							
		20/10/2001	2:30:00 PM	60	3600			
						None	0	*0.00*
Zone 3								
	GN0301							
		16/10/2001	4:40:00 PM	60	1800			
						Arctic grayling	1	*3.33*
						Longnose sucker	2	*6.67*
						Mountain whitefish	1	*3.33*
	GN0302							
		17/10/2001	2:15:00 PM	60	3600			
						Bull trout	1	*1.67*
						Largescale sucker	1	*1.67*
						Mountain whitefish	2	*3.33*

APPENDIX E
CATCH RATE AND SAMPLE VARIABLE CORRELATIONS

Appendix E Table E1. Correlations between boat electrofishing catch rate of selected fish species and sample variables during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Session	Sample Size	Species	Variable	Pearson Correlation	Bonferroni Probability
Zone 1						
	August	14				
			Arctic grayling			
				Conductivity	-0.145	1.000
				Light	-0.505	0.655
				Period	0.505	0.655
				Temperature	0.071	1.000
			Bull trout			
				Conductivity	0.785	0.009
				Light	0.256	1.000
				Period	-0.060	1.000
				Temperature	0.261	1.000
			Largescale sucker			
				Conductivity	0.227	1.000
				Light	-0.467	0.919
				Period	-0.118	1.000
				Temperature	0.509	0.631
			Longnose sucker			
				Conductivity	-0.118	1.000
				Light	0.001	1.000
				Period	0.337	1.000
				Temperature	0.329	1.000
			Mountain whitefish			
				Conductivity	-0.066	1.000
				Light	0.184	1.000
				Period	0.157	1.000
				Temperature	0.167	1.000
			Rainbow trout			
				Conductivity	-0.106	1.000
				Light	0.062	1.000
				Period	0.372	1.000
				Temperature	0.038	1.000
	October	14				
			Arctic grayling			
				Conductivity	-0.384	1.000
				Light	0.198	1.000
				Period	-0.357	1.000
				Temperature	-0.089	1.000
			Bull trout			
				Conductivity	0.082	1.000
				Light	0.290	1.000
				Period	-0.150	1.000
				Temperature	0.064	1.000
			Largescale sucker			
				Conductivity	-0.051	1.000
				Light	-0.181	1.000
				Period	0.273	1.000
				Temperature	0.223	1.000
			Longnose sucker			
				Conductivity	-0.336	1.000
				Light	-0.354	1.000
				Period	0.025	1.000

Appendix E Table E1. Correlations between boat electrofishing catch rate of selected fish species and sample variables during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Session	Sample Size	Species	Variable	Pearson Correlation	Bonferroni Probability
				Temperature	0.182	1.000
			Mountain whitefish			
				Conductivity	-0.028	1.000
				Light	0.087	1.000
				Period	0.150	1.000
				Temperature	0.246	1.000
			Rainbow trout			
				Conductivity	-0.056	1.000
				Light	0.530	0.515
				Period	-0.131	1.000
				Temperature	0.282	1.000
Zone 2						
	August	17				
			Arctic grayling			
				Conductivity	-0.169	1.000
				Light	-0.003	1.000
				Period	-0.424	0.902
				Temperature	-0.330	1.000
			Bull trout			
				Conductivity	-0.053	1.000
				Light	0.225	1.000
				Period	0.252	1.000
				Temperature	-0.136	1.000
			Largescale sucker			
				Conductivity	-0.106	1.000
				Light	0.082	1.000
				Period	-0.094	1.000
				Temperature	-0.094	1.000
			Longnose sucker			
				Conductivity	-0.392	1.000
				Light	-0.266	1.000
				Period	-0.483	0.495
				Temperature	-0.438	0.789
			Mountain whitefish			
				Conductivity	-0.203	1.000
				Light	0.140	1.000
				Period	0.012	1.000
				Temperature	-0.240	1.000
			Rainbow trout			
				Conductivity	0.000	0.000
				Light	0.000	0.000
				Period	0.000	0.000
				Temperature	0.000	0.000
	October	17				
			Arctic grayling			
				Conductivity	-0.049	1.000
				Light	0.168	1.000
				Period	-0.202	1.000
				Temperature	0.330	1.000
			Bull trout			
				Conductivity	-0.082	1.000
				Light	0.080	1.000

Appendix E Table E1. Correlations between boat electrofishing catch rate of selected fish species and sample variables during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Session	Sample Size	Species	Variable	Pearson Correlation	Bonferroni Probability
				Period	-0.479	1.000
				Temperature	0.030	1.000
			Largescale sucker			
				Conductivity	-0.297	1.000
				Light	0.315	1.000
				Period	-0.133	1.000
				Temperature	-0.146	1.000
			Longnose sucker			
				Conductivity	-0.358	1.000
				Light	-0.002	1.000
				Period	0.018	1.000
				Temperature	0.547	0.230
			Mountain whitefish			
				Conductivity	0.130	1.000
				Light	-0.148	1.000
				Period	0.017	1.000
				Temperature	-0.005	1.000
			Rainbow trout			
				Conductivity	-0.110	1.000
				Light	0.243	1.000
				Period	-0.349	1.000
				Temperature	0.133	1.000
Zone 3						
	August	13				
			Arctic grayling			
				Conductivity	-0.415	1.000
				Light	-0.590	0.338
				Period	0.234	1.000
				Temperature	0.416	1.000
			Bull trout			
				Conductivity	0.141	1.000
				Light	0.199	1.000
				Period	0.473	1.000
				Temperature	-0.396	1.000
			Largescale sucker			
				Conductivity	0.573	0.407
				Light	0.047	1.000
				Period	-0.248	1.000
				Temperature	-0.070	1.000
			Longnose sucker			
				Conductivity	0.694	0.085
				Light	0.187	1.000
				Period	-0.096	1.000
				Temperature	-0.238	1.000
			Mountain whitefish			
				Conductivity	-0.216	1.000
				Light	0.268	1.000
				Period	0.133	1.000
				Temperature	-0.367	1.000
			Rainbow trout			
				Conductivity	-0.466	1.000
				Light	-0.576	0.392

Appendix E Table E1. Correlations between boat electrofishing catch rate of selected fish species and sample variables during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Session	Sample Size	Species	Variable	Pearson Correlation	Bonferroni Probability
				Period	0.367	1.000
				Temperature	0.357	1.000
	October	13				
			Arctic grayling			
				Conductivity	-0.092	1.000
				Light	0.086	1.000
				Period	-0.298	1.000
				Temperature	0.098	1.000
			Bull trout			
				Conductivity	-0.424	1.000
				Light	-0.529	0.633
				Period	-0.182	1.000
				Temperature	0.379	1.000
			Largescale sucker			
				Conductivity	-0.275	1.000
				Light	0.159	1.000
				Period	-0.567	0.433
				Temperature	0.288	1.000
			Longnose sucker			
				Conductivity	-0.551	0.508
				Light	-0.500	0.821
				Period	-0.368	1.000
				Temperature	0.541	0.563
			Mountain whitefish			
				Conductivity	0.505	0.783
				Light	0.330	1.000
				Period	0.239	1.000
				Temperature	-0.480	0.966
			Rainbow trout			
				Conductivity	-0.201	1.000
				Light	-0.020	1.000
				Period	-0.451	1.000
				Temperature	0.237	1.000
Zone 4						
	August	14				
			Arctic grayling			
				Conductivity	-0.258	1.000
				Light	-0.248	1.000
				Period	0.571	0.328
				Temperature	0.320	1.000
			Bull trout			
				Conductivity	0.028	1.000
				Light	0.443	1.000
				Period	0.048	1.000
				Temperature	-0.199	1.000
			Largescale sucker			
				Conductivity	-0.188	1.000
				Light	-0.347	1.000
				Period	-0.154	1.000
				Temperature	0.301	1.000
			Longnose sucker			
				Conductivity	-0.256	1.000

Appendix E Table E1. Correlations between boat electrofishing catch rate of selected fish species and sample variables during Phase I of the Peace River Fish Community Indexing Program, 2001.

Area	Session	Sample Size	Species	Variable	Pearson Correlation	Bonferroni Probability
				Light	-0.415	1.000
				Period	-0.075	1.000
				Temperature	0.352	1.000
			Mountain whitefish			
				Conductivity	0.322	1.000
				Light	0.378	1.000
				Period	-0.249	1.000
				Temperature	-0.403	1.000
			Rainbow trout			
				Conductivity	-0.078	1.000
				Light	-0.323	1.000
				Period	0.513	0.609
				Temperature	0.384	1.000
	October	13				
			Arctic grayling			
				Conductivity	-0.101	1.000
				Light	0.114	1.000
				Period	-0.630	0.209
				Temperature	0.114	1.000
			Bull trout			
				Conductivity	0.805	0.009
				Light	-0.292	1.000
				Period	-0.005	1.000
				Temperature	-0.813	0.007
			Largescale sucker			
				Conductivity	-0.306	1.000
				Light	0.052	1.000
				Period	0.303	1.000
				Temperature	0.296	1.000
			Longnose sucker			
				Conductivity	-0.260	1.000
				Light	-0.268	1.000
				Period	0.398	1.000
				Temperature	0.255	1.000
			Mountain whitefish			
				Conductivity	0.549	0.518
				Light	-0.181	1.000
				Period	-0.271	1.000
				Temperature	-0.589	0.343
			Rainbow trout			
				Conductivity	0.201	1.000
				Light	-0.590	0.339
				Period	-0.125	1.000
				Temperature	-0.163	1.000