SITE C FISHERIES STUDIES
2010 MOBERLY RIVER AND HALFWAY RIVER SUMMER FISH INVENTORY

Prepared for

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NOTIFICATION

This document represents Mainstream Aquatics Ltd. professional judgment based on the information available at the time of its completion. Services performed in developing the materials provided in this report have been done in a manner consistent with the proficiency and skill of a professional biologist.

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EXECUTIVE SUMMARY

B.C. Hydro is considering the Peace River Site C Hydroelectric Project (Site C) in north eastern British Columbia (BC) as a potential resource option to help meet BC's future electricity needs. B.C. Hydro is taking a stage-by-stage approach to the evaluation of Site C. B.C. Hydro is currently in Stage 3, Environmental and Regulatory Review. Fisheries studies are presently underway to add to existing baseline information and to address data gaps in order to assist in completion of Stage 3.

A number of previous investigations completed between 2005 and 2008 described fish communities and fish habitats of several Peace River tributaries. This work suggested that the Moberly River and Halfway River are recruitment sources for Peace River fish populations. Because previous investigations were restricted to the lower section of each tributary, there was a lack of current information that described the fish community in the upper section of each tributary. To address this potential data gap, additional work was completed in 2009 that focused efforts on the Moberly River and the Halfway River. The primary goal of that study was to collect baseline information to describe fish communities in the lower and upper sections of each watercourse, with the focus being rearing fish and potential recruitment species for the Peace River.

The main goal of the present study was to repeat the work undertaken in 2009 survey in order to continue to improve our understanding of the fish communities of the Moberly River and Halfway River. With the exception expanding the upstream boundaries of the study area, sampling protocols, methods used, and sample period were similar between 2009 and the present study.

The work was completed in August 2010 and included approximately 120 km of each watercourse from the headwaters to the confluence with the Peace River. The investigation documented environmental conditions (general water quality, water temperature, and discharge), measured physical characteristics of sampled habitats, and described the small fish community. On each tributary, 10 or 11 evenly distributed sections were sampled using beach seine and backpack electrofisher fish capture methods. Due to low water levels on the Moberly River small fish boat electrofisher was used only on the Halfway River.

Environmental and physical characteristics of the tributaries influenced the availability and quality of fish habitats, and likely were factors that controlled fish species diversity, distribution, and abundance. The environmental and physical characteristics of the Moberly River and Halfway River were different as were the fish communities.

Moberly River

The Moberly River is a relatively small watercourse in terms of discharge, is subjected to elevated water temperatures during summer, receives its source water from Moberly Lake, and has no permanent tributaries. The Moberly River study area consists of two major regions that exhibit different physical characteristics. The upper Moberly River is a low to moderate gradient, meandering channel that traverses mature forest. Fish habitats are dominated by runs interspersed with short riffle/rapid sections. These fish habitats provide spawning, rearing, feeding, and overwintering areas for fish and contain an abundance of high quality rearing areas. The lower Moberly River is primarily a higher gradient, largely unstable braided channel that is adjusting to a recent flood event that caused extensive bank erosion and damage to the riparian zone. Several active valley wall slumps that occur in this region have the potential to introduce sediments into the system. Fish habitats are dominated by high velocity runs and riffles. Rock substrates are embedded with fines in low velocity areas.

The Moberly River supports a diverse fish community that includes sportfish, suckers, minnows, and sculpins. Young sportfish recorded during the study included Arctic grayling, burbot, mountain whitefish, and northern pike. Notable findings of the study were as follows:

1. Longnose sucker and longnose dace were the numerically dominant species in the catch.
2. Other abundant nonsportfish included redside shiner, lake chub, and slimy sculpin.
3. Young (i.e., Age 0 and/or 1) mountain whitefish and Arctic grayling were the most numerous sportfish.
4. The lower reaches supported the highest numbers of Age 0 Arctic grayling and mountain whitefish, which suggested that this portion of the study area was important for spawning and rearing by these species.
5. The study area is not used by bull trout and rainbow trout for spawning and early rearing.
6. Adult fish of several sportfish and sucker species were recorded suggesting that the study area supports resident large-fish populations.

Halfway River

The Halfway River is a large system in terms of discharge and there are several tributaries that enter the river in the upstream portion of the study area.

In general, the Halfway River exhibits a constant gradient, but the physical characteristics change from upstream to downstream. The Halfway River study area consists of two major regions with a transition in channel geomorphology and species composition located at the confluence of the Cameron River. The Halfway River upstream of the Cameron River is a relatively unstable channel containing clean rock substrates that supports a cold, clear-water fish community. The Halfway River downstream of the Cameron River is largely confined by steep valley walls and is influenced by sediment inputs from the

Cameron River, bank erosion, and active valley wall slumping. This section supports a fish community in transition to cool, turbid-water fish populations.

The Halfway River supports a diverse fish community that includes sportfish, suckers, minnows, and sculpins. Young sportfish recorded during the study included Arctic grayling, bull trout, mountain whitefish, and rainbow trout. Notable findings of the Halfway River study were as follows:

1. Longnose suckers were the most numerous fish in the study area followed by mountain whitefish.
2. Young (i.e., Age 0 and/or 1) Arctic grayling, bull trout, and rainbow trout were most numerous and widespread upstream of the Cameron River confluence.
3. Age 0 bull trout, rainbow trout, and Arctic grayling were scarce or absent indicating that the Halfway River is not a major spawning and early rearing area for these species; Halfway River tributaries likely provide these habitats.
4. Age 0 mountain whitefish were widespread and abundant suggesting that the mainstem river provides spawning and early rearing habitat for this species.
5. Sucker and minnow species were numerically important downstream of the Cameron River confluence.
6. Adult fish of several sportfish and sucker species were recorded suggesting that the study area supports resident large-fish (>200 mm) populations.

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ACKNOWLEDGEMENTS

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1.0 INTRODUCTION

1.1 BACKGROUND

B.C. Hydro is considering the Peace River Site C Hydroelectric Project (Site C) in north eastern British Columbia (BC) as a potential resource option to help meet BC's future electricity needs. B.C. Hydro is taking a stage-by-stage approach to the evaluation of Site C. B.C. Hydro is currently in Stage 3, Environmental and Regulatory Review. Fisheries studies are presently underway to add to existing baseline information and to address data gaps in order to assist in completion of Stage 3.

Several fish studies have been completed in Peace River tributaries as part of the current Site C investigations. Studies in 2005, 2006, and 2007 described fish communities and fish habitats of several tributaries (AMEC & LGL 2006, 2007, Mainstream 2009a). The primary goal was to examine fish use and habitat characteristics in sections of each tributary that would be affected by the Site C Reservoir (i.e., twice the length of the predicted Site C Reservoir inundation zone). In 2008, three studies were completed, including an assessment of fish use of tributaries in spring and fall, a juvenile fish and habitat survey in summer, enumeration of bull trout spawners and redds, and a mountain whitefish migration and spawning study (Mainstream 2009a, b, c; Diversified 2009). These investigations suggested that the Moberly River and Halfway River were providing spawning and rearing habitat for Peace River fish populations. Because most investigations were restricted to the lower section of each tributary, there was a lack of information that described the fish community in upper sections of each system. Historical studies suggested that the upper portions of each river may provide spawning and rearing areas for Peace River fish populations (ARL 1991a, b).

To address this potential data gap, tributary work in 2009 focused efforts on the Moberly River and the Halfway River (Mainstream 2010). The primary goal of that study was to collect baseline information to describe fish communities in the lower and upper sections of each system, with the primary focus being summer rearing fish.

In 2010, Mainstream Aquatics Ltd. was contracted by BC Hydro to continue investigations of the Moberly River and the Halfway River by repeating the 2009 study. This document summarizes the results of that investigation.

1.2 PURPOSE AND OBJECTIVES

The purpose of the study was to collect baseline information to describe fish communities of the mainstem Moberly River and mainstem Halfway River from the headwater areas to the confluence of the Peace River, with the primary focus being young sportfish.

The objectives of the study were as follows:

1. Sample the small fish community during summer from the headwater area to the Peace River confluence. Small fish are defined as ≤ 200 mm length.
2. Quantify the physical characteristics of sampled habitats.
3. Collect and record the incidental catch of large fish to document the presence of resident fish populations. Large fish are defined as > 200 mm length.
4. Describe the distribution, abundance, and biological characteristics of major fish populations, with emphasis on young sportfish species.
5. Present the information in a concise report.

1.3 STUDY AREA

The study areas of the Moberly River and Halfway River were stratified into reaches based on physical characteristics that included major tributary inputs and differences in channel form, gradient, and bed material type (Table 1.1, Figure 1.1). The first reach of each system was delineated based on the predicted inundation area of the proposed Site C Reservoir. Sampling occurred in one or more sections within each reach. Each section represented portions of river that could be investigated in one day.

1.3.1 Moberly River

The Moberly River study area included the mainstem river from approximately 3.6 km downstream of Moberly Lake to the confluence with the Peace River, which represented a distance of approximately 116 km (Figure 1.1, Appendix A). The study area was stratified into four reaches and two subreaches (Table 1.1). Sampling occurred in 11 sections within the four reaches.

1.3.2 Halfway River

The study area included the mainstem river from the confluence of the Chowade River to the confluence of the Peace River, which is a distance of approximately 128 km (Figure 1.2, Appendix A). The study area was stratified into four reaches (Table 1.1). Sampling occurred in 10 sections within the four reaches.

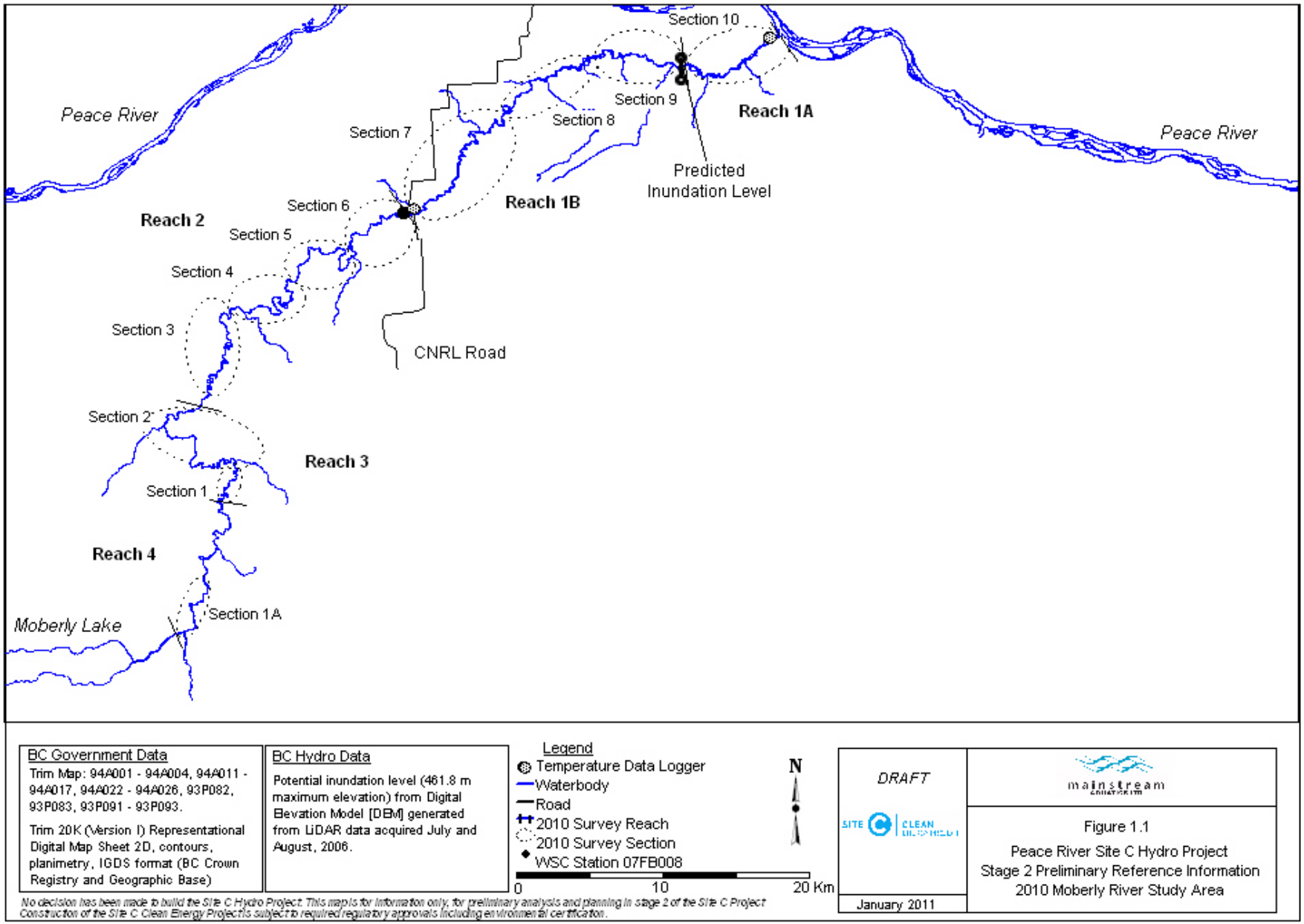
Table 1.1 Reach designations of the Moberly River and Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

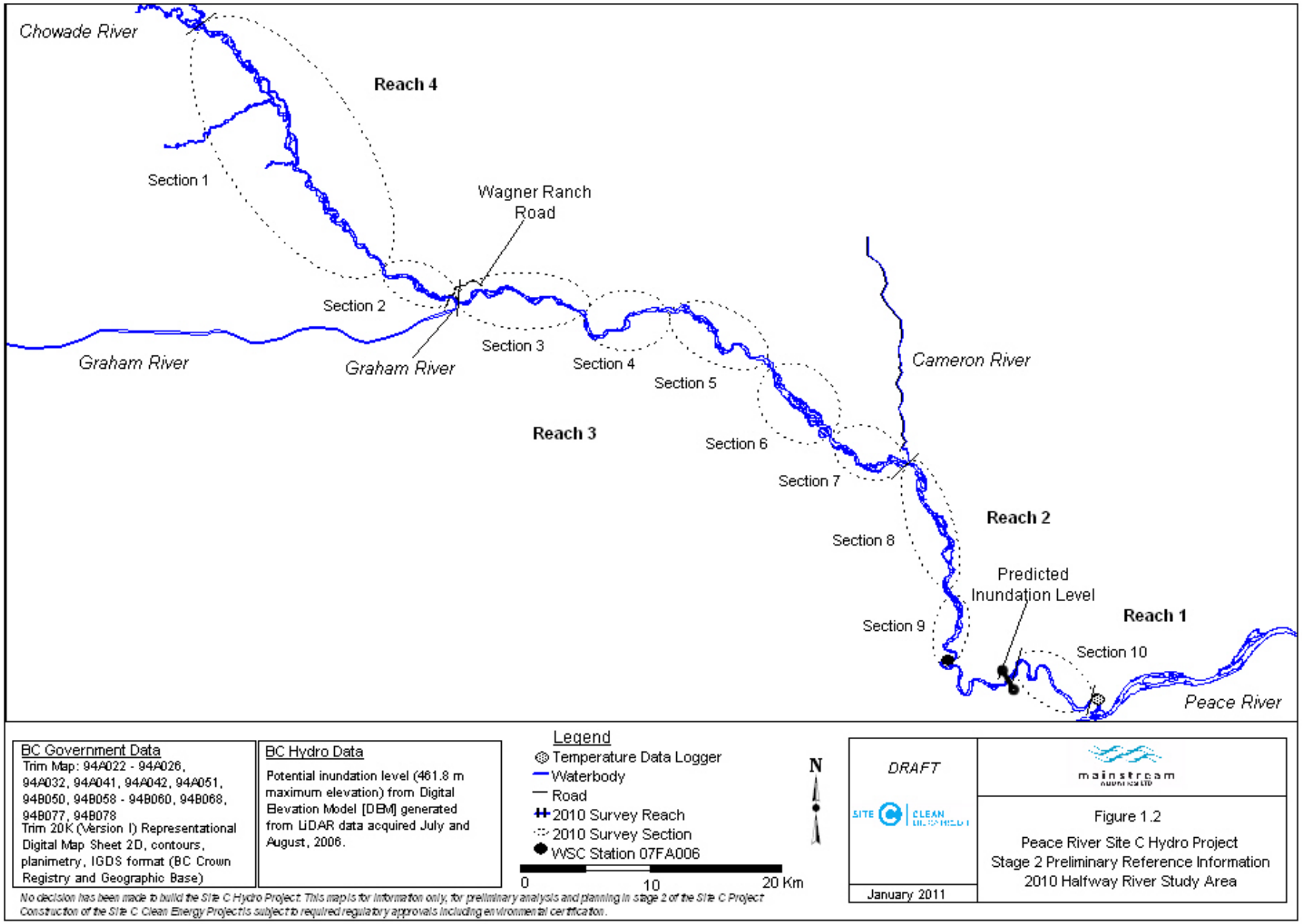
River	Reach	Sections	Description	Dominant Channel Form[a]	Gradient (m/km)	Dominant Bed Material	Location	Length (km)
Moberly	4[b]	1A	Frequent riffle complexes interspersed with extended runs with some flats	Irregular meanders	2.0	gravels, cobbles, boulders	Km 115.9 to 101.0	14.9
	3	1 to 2	Dominated by low water velocities; flats with few riffle sections	Tortuous meanders	0.9	sand	Km 101.0 to 81.4	20.4
	2	3 to 6	Frequent riffle complexes interspersed with extended runs with some flats	Tortuous meanders	2.0	gravels, cobbles, boulders	Km 81.4 to 42.9	38.5
	1B	7 to 9	Large change in gradient; unstable channel and bed material	Irregular meandering; braided; frequently confined	4.4	sand, cobbles	Km 42.9 to 10.0	32.9
	1A[c]	10	Within predicted inundation zone; Same as Reach 1B	Same as Reach 1B	4.0	sand, cobbles	Km 10.0 to 0.0	10.0
Halfway	4	1 to 2	Chowade River to Graham River; numerous riffle – run complexes; some channel braiding and large woody debris	Regular meandering; occasionally confined	4.8	gravels, cobbles	Km 128.0 to 92.3	32.6
	3	3 to 7	Graham River to the Cameron River; dominated by runs interspersed with riffles and some rapids; frequently confined channel at upper end; some braiding at lower end	Irregular wandering; occasionally confined	2.5	gravels, cobbles, boulders	Km 92.3 to 42.5	49.8
	2	8 to 9	Cameron River to predicted inundation level; lower water velocities; long runs with riffle sections; extensive braiding in some portions	Regular meanders; confined	2.1	cobbles, sands	Km 42.5 to 12.4	30.1
	1[c]	10	Within predicted inundation zone; generally low water velocities; slow runs and flats interspersed by boulder garden rapids	Irregular meandering; confined	1.7	sands, cobbles, boulders	Km 12.4 to 0.0	12.4

[a] Based on definitions presented in BCFISB (2001).
[b] Excludes 3.6 km portion of river immediately downstream of the Moberly Lake outlet.
[c] Inundation level to confluence with the Peace River.

1.4 STUDY PERIOD

The Moberly River survey was completed during an 11-day period from 6 to 16 August 2010. The survey of the Halfway River was completed during a 10-day period from 4 to 13 August 2010.


Peace River
Peace River
Section 10
Section 9
Section 8
Section 7
Section 6
Section 5
Section 4
Section 3
Section 2
Section 1
Section 1A
Reach 1A
Reach 1B
Reach 2
Reach 3
Reach 4
Predicted
Inundation Level
CNRL Road
Moberly Lake
BC Government Data
Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.
Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)
BC Hydro Data
Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.
Legend
Temperature Data Logger
Waterbody
Road
2010 Survey Reach
2010 Survey Section
WSC Station 07FB008
N
0
10
20 Km
DRAFT
mainstream
Figure 1.1
Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
2010 Moberly River Study Area
January 2011
No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.


Chowade River
Reach 4
Section 1
Wagner Ranch Road
Section 2
Graham River
Graham River
Section 3
Section 4
Section 5
Reach 3
Cameron River
Section 6
Section 7
Reach 2
Section 8
Predicted Inundation Level
Reach 1
Section 9
Section 10
Peace River
BC Government Data
Trim Map: 94A022 - 94A026, 94A032, 94A041, 94A042, 94A051, 94B050, 94B058 - 94B060, 94B068, 94B077, 94B078
Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)
BC Hydro Data
Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.
Legend
Temperature Data Logger
Waterbody
Road
2010 Survey Reach
2010 Survey Section
WSC Station 07FA006
N
0
10
20 Km
DRAFT
SITE C CLEAN ENERGY PROJECT
mainstream
Figure 1.2
Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
2010 Halfway River Study Area
January 2011
No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project
Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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2.0 METHODS

2.1 FIELD

The original sampling approach for both the Moberly River and Halfway River fish inventories was to deploy two two-person crews on each system. One crew would operate a small-fish boat electrofisher, while the other crew would utilize backpacker electrofisher/beach seine methods. This approach was used on the Halfway River. Field crews put in at the upstream end of the study area and sampled in a downstream direction until the work was completed. Transportation on the Halfway River was by inflatable boat.

On the Moberly River, low water levels prevented use of the small fish boat electrofisher and limited use of inflatable boats for transportation. This required modification to the original sampling approach. All work on the Moberly River was completed by a single two-person crew using backpack electrofisher and beach seine methods; no small-fish boat electrofisher sampling occurred on the Moberly River. Daily access was provided via helicopter. In the upper section of the Moberly River, transportation between sites was facilitated by use of an inflatable boat. In the lower section of the Moberly River, all transportation between sites was by foot.

2.1.1 Environmental Characteristics

General Water Quality

Point measures of several general water quality parameters were taken at each site. Water clarity was measured to the nearest centimeter with a secchi rod. A Hanna HI98311 EC/TDS meter was used to measure pH (± 0.01), conductivity (± 2% full scale), and water temperature (± 0.1^{o}C).

Discharge

Preliminary discharge data (no quality assurance) were available from Water Survey of Canada (WSC) for the Moberly River (Station 07FB008) and Halfway River (Station 07FA006).

Water Temperature

Water temperature data were available from a water temperature monitoring program conducted during the open water period in 2010 (Mainstream 2011). Water temperature (± 0.1^{o}C) was continuously monitored using Vemco Minilog 8 bit temperature data loggers at two sites in each of the Moberly River and Halfway River.

2.1.2 Fish Habitat

Habitat types were classified according to O'Neil and Hildebrand (1986), which generally conform to channel morphology classifications (RISC 2001). The differences include the separation of grouped habitat complexes (i.e. riffle-pool, cascade-pool, step-pool) into riffle or pool or cascade. Fish habitat assessment procedures followed those described in RISC (2001). At each backpack electrofisher and beach seine site, physical characteristics of a discrete habitat was measured along a transect placed perpendicular to the length of the sampled habitat. Note that habitat specific parameters (e.g., water depth, water velocity, and D90) were not recorded at boat electrofisher sites due to variable characteristics (i.e., multiple habitats were present within one fish sample site).

Habitat parameters measured (definitions presented in Appendix B) at each backpack electrofisher and beach seine site were as follows:

- Date and time
- Geodetic location
- Habitat type
- Water depth (m)
- Water velocity (m^3/s)
- Substrate composition (%)
- D90 (cm)
- Substrate embeddedness (low, moderate, high)
- Substrate compaction (low, moderate, high)
- Cover (%)

Habitat parameters measured (definitions presented in Appendix B) at each small-fish boat electrofisher site were as follows:

- Date and time
- Upstream and downstream geodetic location
- Dominant habitat type
- Dominant substrate type

Water depth and water velocity were measured at ¼, ½, and ¾ the sampled width using a Swoffer Model 2100 velocity meter and staff rod. Percent substrate composition was visually estimated using a classification system based on the Modified Wentworth Scale (Cummins 1962). A 2 m wide band situated perpendicular to each transect was used to visually assess substrate characteristics. D90 represented the average size of substrate particle that was in the 90^{th} percentile and followed procedures outlined in MOE (1995). Embeddedness is the amount of fine particles (sand, silt, and clay) present within the substrate. Compaction evaluates the density or looseness of the substrate within the channel. Compaction and embeddedness were evaluated as low (1), moderate (2), or high (3). The percent cover was visually estimated for overhead cover, rock cover, large organic debris, submergent vegetation, emergent vegetation, and algal cover. Finally, digital photographs were taken of representative habitat types in sampled sites.

2.1.3 Fish Capture

Three capture methods were used to sample fish, including boat electrofisher, backpack electrofisher, and beach seine (the boat electrofisher was not used on the Moberly River because water levels were too low). The method used was dependent on the physical characteristics of the area to be sampled. The boat electrofisher was used to sample nearshore, shallow-water mainstem habitats and focused on the capture of small fish (defined as ≤ 200 mm fork length); however, large fish (> 200 mm fork length) were also collected. Multiple habitat types were incorporated into each boat electrofisher site.

The backpack electrofisher and beach seine were used to sample wadeable shallow water areas (< 0.5 m depth) in side channels and along the mainstem channel margins. A backpack electrofisher was used to sample high velocity areas with abundant physical cover. A beach seine was used in low velocity zones (characterized by a paucity of instream cover) in water depths not effectively sampled by backpack electrofisher. Sampling occurred in discrete habitat units. Parameters measured at each fish sample site included date and time, geodetic location, sample method settings, and sample effort (i.e., seconds, length, and width sampled).

Attempts were made to sample a representative number of habitat types, but sample size was proportional to habitat availability. The number of sites sampled each day (i.e., in each section) was based on section length and the type and number of available habitats. In general, five boat electrofisher and five backpack electrofisher and/or beach seine sites were sampled per day. The amount and distribution of sample effort is summarized in Tables 2.1 and 2.2.

Table 2.1 Number of sample sites by method and reach in the Moberly River and Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Tributary	Reach	Method and Number of Sites			
		Boat Electrofisher	Backpack Electrofisher	Beach Seine	Total
Moberly River	4		3	1	4
	3		7	4	11
	2		17	5	22
	1B		12		12
	1A		12		12
	Sub-Total	*0*	*51*	*10*	*61*
Halfway River	4	19	13	5	37
	3	28	19	5	52
	2	12	8	3	23
	1	6	5	1	12
	Sub-Total	*65*	*45*	*14*	*124*
Total		*65*	*96*	*24*	*185*

Table 2.2 Number of sites by habitat type and reach sampled by backpack electrofisher and beach seine in the Moberly River and Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

River	Reach	Habitat Type							
		Flat	**Pool**	**Riffle**	**Run**	**Side Channel**	**Back Water**	**Tributary**	**Total**
Moberly River	4					2	1	1	4
	3	6		1	2	1	1		11
	2	7		6	2	7			22
	1B			1		11			12
	1A			1		11			12
	Sub-Total	*13*	*0*	*9*	*4*	*32*	*2*	*1*	*61*
Halfway River	4	5	1	3	3	1	5		18
	3	9	1	5	4		5		24
	2	4		1	1		4	1	11
	1	1			3		2		6
	Sub-Total	*19*	*2*	*9*	*11*	*1*	*16*	*1*	*59*
Total		*32*	*2*	*18*	*15*	*33*	*18*	*2*	*120*

Method Description

The boat electrofisher consisted of a double-bowed, inflatable drift boat equipped with a Smith-Root Type VIA electrofisher system, two fixed boom anodes on the bow and a cathode wire array on the stern. Electrofisher settings were maintained at an amperage output of 3.0 to 6.0 A, pulsed DC current, and a frequency of 60 Hz. Voltage frequency was adjusted based on conductivity and sampling effectiveness. The sampling procedure involved an operator positioning the boat perpendicular to the channel margin while drifting downstream and outputting a continuous current of electricity. The boat electrofisher position alternated between banks in order to sample shallow water habitats frequented by small fish and to avoid navigation hazards. A single netter positioned at the bow of the boat captured the temporarily immobilized fish and placed them in a 30 L live well. The netter was equipped with a net having a mesh size of 0.5 cm. The netter was instructed not to bias their catch towards a particular species in order to provide a representative sample of the fish community. Sampled width was approximately 3.5 m and sampled length of each site consisted of a single pass of approximately 500 m.

Two types of backpack electrofishers were used during the survey. A Smith-Root LR24 high output backpack electrofisher was used on the Halfway River. Settings were maintained at an output of 250 – 300 VDC, 4.2 ms, and a frequency of 60 – 100 Hz. Sampling on the Moberly River was completed using a Smith–Root Type XII high output backpack electrofisher. Settings were maintained at an output of 400 – 500 VDC, 6 ms, and a frequency of 60 – 70 Hz. The backpack electrofisher operator waded upstream along the channel margin and sampled suspected fish holding areas. The netter, who was positioned in close proximity to the electrofisher operator, collected immobilized fish and placed them in

a holding bucket. A single pass was used at each site. Sample width was approximately 3 m and sampled length was approximately 100 m.

A beach seine was used in low velocity wadeable areas not effectively sampled with a backpack electrofisher. The beach seine was 4.0 m wide and 1.5 m high with a stretched mesh size of 5.0 mm (the depth of the capture bag was 1.4 m). A two-person crew sampled parallel to the channel margin for a predetermined distance (usually 25 m) before turning into shore. Depending on the habitat area available, one to three discrete hauls were conducted with the distance of each haul being at least 25 m. Captured fish were placed in a holding bucket for processing. If sample effectiveness was low (e.g., snagged net), the site was sampled a second time.

2.1.4 Fish Processing

All captured fish were held in a holding tank/bucket prior to processing. Data recorded for fish included species (Table 2.3) and fork length (to the nearest 1 mm). Total lengths were measured for burbot, sculpin species, and all fish less than 20 mm. When the catch at a site exceeded 10 individuals per species a subsample was measured. The first 10 individuals of each species were measured, while the remaining fish were identified and enumerated before release. A non-lethal ageing structure (scale or fin ray) was collected from a subsample of sportfish to confirm the age class. Structures were placed in labeled envelopes and air-dried before storage. In addition, attempts were made to collect otoliths from 20 juvenile mountain whitefish and 20 juvenile Arctic grayling from each river for use in a pilot elemental signature study (Clarke *et al.* in prep.).

Fish that could not be identified in the field were assigned a unique identifier and a subsample preserved for future identification. These fish were later assigned a species designation based on laboratory identifications. Smaller fish that included young-of-the-year suckers and sculpins could not be identified to species using this method because a unique species identifier could not be assigned in the field. For these fish, the species percent composition of identified suckers and sculpins was applied to the sample of unidentified suckers and sculpins.

Table 2.3 Fish species recorded from the Moberly River and Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Common Name	Scientific Name	Species Label
Sportfish	Arctic grayling	*Thymallus arcticus*	GR
	Bull trout	*Salvelinus confluentus*	BT
	Burbot	*Lota lota*	BB
	Kokanee	*Oncorhynchus nerka*	KO
	Mountain whitefish	*Prosopium williamsoni*	MW
	Northern pike	*Esox lucius*	NP
	Rainbow trout	*Oncorhynchus mykiss*	RB
	Walleye	*Sander vitreus*	WP
Sucker	Largescale sucker	*Catostomus macrocheilus*	CSU
	Longnose sucker	*Catostomus catostomus*	LSU
	White sucker	*Catostomus commersoni*	WSU
Minnow/Trout-perch	Flathead chub	*Platygobio gracilis*	FHC
	Lake chub	*Couesius plumbeus*	LKC
	Longnose dace	*Rhinichthys cataractae*	LNC
	Northern pikeminnow	*Ptychocheilus oregonensis*	NSC
	Northern redbelly dace	*Phoxinus eos*	RDC
	Peamouth	*Mylocheilus caurinus*	PCC
	Redside shiner	*Richardsonius balteatus*	RSC
	Trout-perch	*Percopsis omiscomaycus*	TP
Sculpin	Prickly sculpin	*Cottus asper*	CAS
	Slimy sculpin	*Cottus cognatus*	CCG
	Spoonhead sculpin	*Cottus ricei*	CRI

2.2 OFFICE

2.2.1 Quality Assurance

All data collected in the field were recorded on standardized forms. Forms were checked daily for errors or omissions. Data were entered into standardized data entry spreadsheets using Microsoft Excel™. These data were visually compared to the field forms for errors and subjected to several summary analyses including graphical examination to identify errors and outliers. The checked data were then imported into a single Microsoft Access™ data management file for data management and storage. Water temperature and discharge data were stored in Microsoft Excel™.

2.2.2 Mapping

Geodetic location information (UTM coordinates) were tabulated and plotted onto geo-referenced base maps (BC TRIM, scale 1:20,000) using MapInfo Professional™. River kilometer locations were then plotted on base maps. Km 0 designated the confluence with the Peace River.

Reservoir inundation level locations on study tributaries were based on a maximum normal reservoir elevation of 461.8 meters plotted on orthophotos supplied by BC Hydro. Orthophotos were created from 1:20,000 and 1:40,000 scale photography; reservoir elevation was generated from BC Government TRIM mapping.

2.2.3 Fish Age Groups

Structures from selected sportfish species were aged to confirm the range in length of Age 0 and Age 1 fish. Ageing procedures followed those described in Mackay *et al.* (1990). Scales were cleaned and placed on a microscope slide for viewing. All structures were read by two experienced individuals. If a discrepancy occurred between readers a third person examined the structure and a consensus reached as to the age of the structure.

Age data were then used to confirm age-group designations based on modal peaks illustrated by length frequency distributions. Age-groups of interest were Age 0, or young-of-the year (YOY), and Age 1 or juvenile.

2.2.4 Analyses and Summary Metrics

Data were analyzed using Microsoft® Excel and SPSS® software. Habitat parameters measured within discrete habitat units were summarized by habitat type. Catch rate, which is used synonymously with catch-per-unit-effort (CPUE) of fish, was calculated for each site by dividing the number of fish captured by sampling effort. Catch rate was expressed as follows:

Boat electrofisher -	Number of fish/km
Backpack electrofisher -	Number of fish/100 m
Beach seine -	Number fish/100 m^2

Summary metrics for habitat and catch rate included mean ± standard error (SE) among sites within a section.

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3.0 RESULTS

3.1 MOBERLY RIVER

3.1.1 Environmental Characteristics

3.1.1.1 General Water Quality

Overall average pH of the Moberly River during the summer survey was 8.1 (Table 3.1, Appendix C). Average pH was generally similar between reaches; however, Reach 3 had a slightly lower average pH. Water conductivity increased from upstream to downstream. Average water conductivity increased from a low of 177 µS/cm in Reach 4 to a high of 328 µS/cm in Reach 1A. Very high conductivity recorded at three sites in Reach 1A (437, 495, and 560 µS/cm) suggests input from ground water sources. Water clarity during the survey averaged 83 cm. Water clarity was high in all reaches (i.e., to channel bottom). Low point measurements of clarity in Reaches 4 and 3 were recorded in side channels that had been disturbed by beaver activity. Point measures of water temperature during the small fish survey averaged 20.7°C. Water temperature decreased from upstream to downstream.

Table 3.1 General water quality of the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Reach	pH			Conductivity (µS/cm)			Water clarity (cm)			Temperature (°C)		
	n	**Avg.**	**Range**	***n***	**Avg.**	**Range**	***n***	**Avg.**	**Range**	***n***	**Avg.**	**Range**
4	4	8.2	8.0 – 8.2	4	177	172 – 178	4	57	50 – TCB[a]	4	22.8	20.5 – 24.6
3	11	7.9	7.8 – 8.4	11	188	180 – 198	8	TCB	-	11	21.2	19.1 – 24.7
2	22	8.1	7.9 – 8.4	22	195	187 – 205	22	91	70 – TCB	22	20.4	17.8 – 23.1
1B	12	8.2	7.5 – 8.4	12	242	176 – 267	12	TCB	-	12	20.2	16.4 – 23.0
1A	11	8.2	7.7 – 8.4	12	328	245 – 560	12	TCB	-	11	20.5	10.2 – 23.5
Overall	**60**	**8.1**	**7.5 – 8.4**	**61**	**228**	**172 – 560**	**58**	**83**	**50 – TCB**	**60**	**20.7**	**10.2 – 24.7**

[a] To channel bed.

3.1.1.2 Water Temperature

Water temperatures of the Moberly River were continuously monitored during the open water period in 2010 (Mainstream 2011). During the monitored period at a station located near the confluence of the Peace River (10 May to 23 October), hourly water temperatures ranged between 2.6°C and 24.5°C. Average daily water temperatures were approximately 9.0°C at the beginning of the monitored period (Figure 3.1). Average daily water temperatures increased during May and then peaked in July (21.9°C) before declining until mid-October when the thermograph was removed. Water temperatures during the field survey were warm. Temperatures ranged between 15.2°C and 23.0°C with an average of 18.9°C.

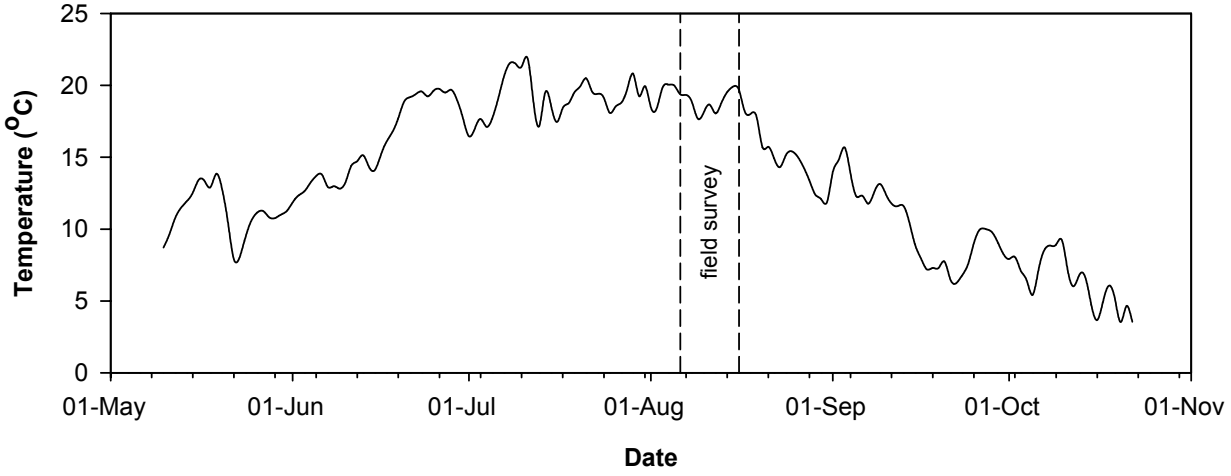

Figure 3.1 Mean daily water temperatures of the Moberly River near the confluence with the Peace River, Site C Moberly River and Halfway River Fish Inventory 2010 (data from Mainstream 2011).

3.1.1.3 Discharge

Based on preliminary WSC data, discharge of the Moberly River during 2010 ranged between 0.5 m^3/s and 55.5 m^3/s (Figure 3.2). Mean daily discharge slowly increased starting in early April before peaking on May 26. Discharge then continuously decreased until the end of October.

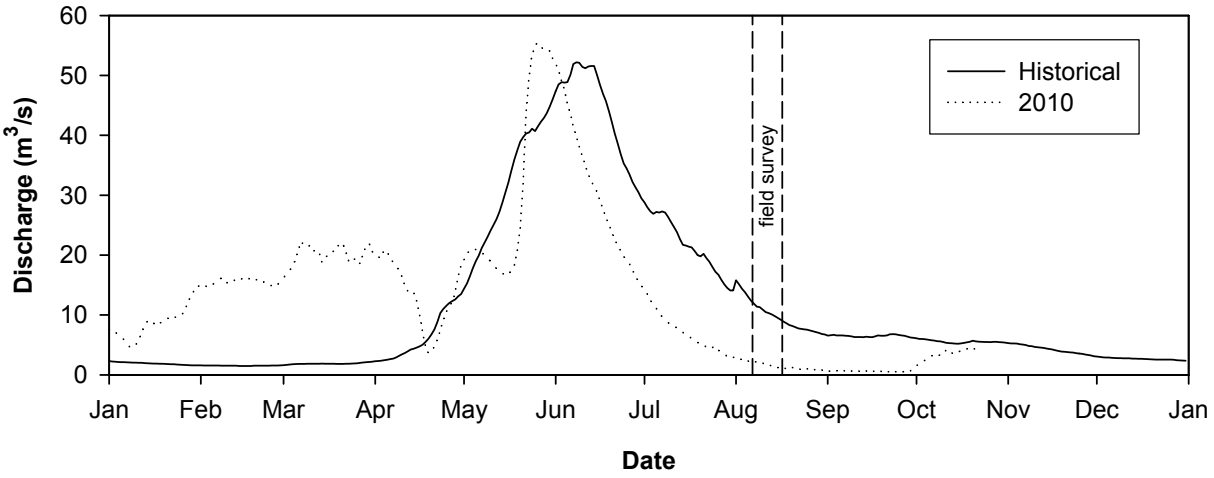

Figure 3.2 Mean daily discharge of the Moberly River in 2010 with comparison to historical mean daily discharge measured at WSC station 07FB008, Site C Moberly River and Halfway River Fish Inventory 2010.

The Moberly River discharge in 2010 generally followed the historical seasonal pattern, however, in 2010, discharge was higher than historical discharge from January to April and the 2010 peak discharge was earlier in the year compared to the historical peak. Additionally, from August to October 2010, discharge was minimal and well below the historical average discharge. Average daily discharge during

the field survey was low (1.8 m^3/s). Average daily discharge gradually decreased from the start of the field survey (2.1 m^3/s) to the end of the survey (1.1 m^3/s; Figure 3.2).

3.1.2 Fish Habitat

3.1.2.1 General Description

Reach 4 exhibited a moderate gradient containing riffle sections interspersed with flats and slow runs. The bed material was dominated by sand and gravels, but riffles contained an abundance of cobbles and small boulders (Plate 1). There were numerous meandering backwater sections (Plate 2) and a number of small braided sections containing cobbles and boulders. An intermittent tributary, locally known as Grayling Creek, entered the Moberly River in this reach approximately 9.9 km downstream of the Moberly Lake outlet. The stream was dry at the time of the survey. This reach had the potential to provide spawning and rearing habitats for species such as Arctic grayling, mountain whitefish, and slimy sculpin.

Reach 3 exhibited very low gradient runs with bed material dominated by sand (Plate 3). There were also short riffle sections containing large cobbles and boulders. This reach contained numerous oxbows with emergent and submergent vegetation, flood debris, and woody debris that provided off channel fish habitat (Plate 4). This reach had the potential to provide high quality habitats for species such as northern pike and lake whitefish. The non-riffle sections were considered marginal habitat for species such as Arctic grayling and mountain whitefish.

Reach 2 exhibited an increased gradient with an abundance of long runs separated by short riffle sections (Plate 5). The stable river channel meandered through mature forest, which was a source of large woody debris. There was an abundance of protected shallow water areas in this reach that provided an abundance of physical cover, which could be used as rearing habitat. Bed material in this reach consisted primarily of sands and gravels in runs, while cobbles interspersed with boulders dominated in riffles (Plate 6). This reach contained numerous physical features that provided good quality spawning, rearing, feeding, and overwintering habitats for fluvial fish species potentially found in the Moberly River (e.g., Arctic grayling, mountain whitefish, longnose sucker, and slimy sculpin).

The upstream boundary of Reach 1B was a major reach break in the study area where the Moberly River began its descent from foothills plateau to the Peace River (Plate 7). The river channel in Reach 1B was laterally unstable, which resulted in substantial bank erosion. Log jams and side channels were frequently encountered (Plate 8). The bed material consisted of gravels and small cobbles, interspersed with sand. This material was mobile as evidenced by numerous unstable gravel and cobble bars. This reach also

contained two large, active valley wall slumps, one at Km 16.0 and one at Km 12.5, which have the potential to introduce sand and silt into the river. The instability of the Moberly River channel in Reach 1B may increase habitat complexity, but most habitats likely were ephemeral. The high gradient and mobile bed material limited the amount of spawning and rearing habitats in the main channel, but there were numerous secondary channels that could be used by fish.

The physical characteristics of Reach 1A, which represents the potential area of inundation by the proposed Site C Reservoir, were very similar to Reach 1B characteristics (Plates 9 and 10). However, this section of river frequently abutted against the valley walls resulting in bank erosion that caused introduction of fine sediments. Reach 1A exhibited the same habitat potential as Reach 1B, with the exception of a higher suspended sediment load during high flow periods.

3.1.2.2 Site Habitat Characteristics

Habitat types recorded at sampled sites on the Moberly River consisted of flat, riffle/rapid, run, backwater, side channel, and tributary confluence (Table 3.2, Appendix D). Several characteristics of measured fish habitats varied by reach (Figure 3.3). Water velocity, percent pebbles/gravels, and substrate embeddedness and compaction generally increased from Reach 4 to Reach 1A, while percent fines decreased. Average D90 was generally less than 20 cm; however, D90 was 44.5 cm in Reach 3 and 25.8 cm in Reach 2. The changes reflected reach differences in bed material type and gradient. The absence of strong differences between reaches for the remaining habitat parameters likely reflected small sample sizes rather than a lack of difference.

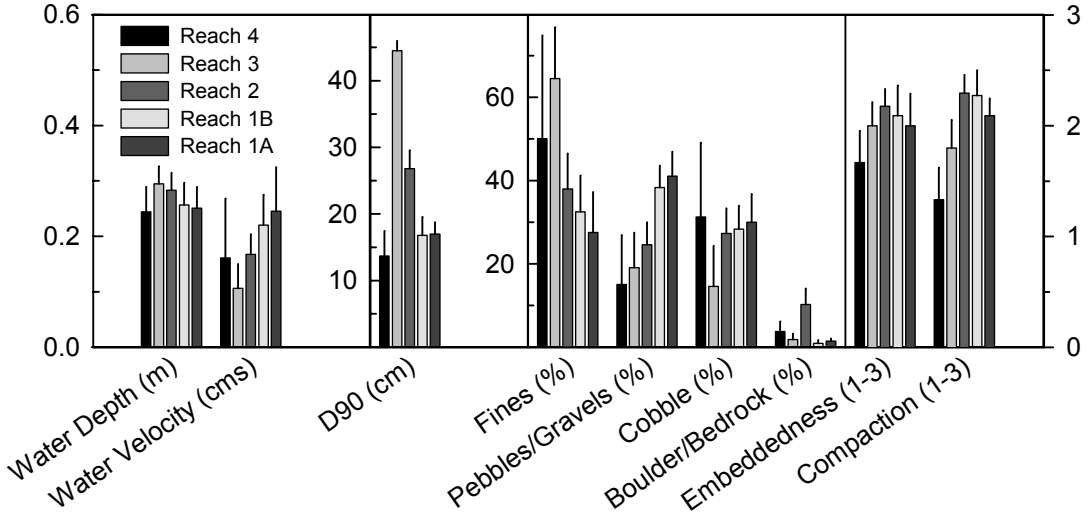

Figure 3.3 Physical and bed material characteristics (mean ± SE) of reaches in the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010 (Y-axis units specific to parameter; based on data collected at beach seine and backpack electrofisher sites).

Table 3.2 Physical characteristics[a] of fish habitats sampled at backpack electrofisher and beach seine sites on the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Reach	Habitat Type	*n*	Water Depth (m)	Water Velocity (m/s)	D90 (cm)	Bed Material Type (%)				Substrate Condition	
						Fines	PE/GR	CO	BO/BE	Compaction	Embeddedness
4	Backwater	1	0.25	0	-	100	0	0	0	-	-
	Side Channel	2	0.28 ± 0.08	0.23 ± 0.23	9.5 ± 2.5	50 ± 35	25 ± 25	23 ± 13	3 ± 3	1.5 ± 0.5	1.5 ± 0.5
	Tributary Confluence	1	0.16	0.19	22.0	0	10	80	10	1.0	2.0
3	Backwater	1	0.40	0	-	50	50	0	0	-	-
	Flat	6	0.33 ± 0.04	0.09 ± 0.03	-	86 ± 13	14 ± 13	0	0	1.0	2.0
	Riffle/Rapid	1	0.19	0.50	48.0	0	15	80	5	2.0	2.0
	Run	2	0.27 ± 0.06	0.08 ± 0.02	41.0	28 ± 23	25 ± 25	40 ± 40	8 ± 8	2.0 ± 1.0	1.5 ± 0.5
	Side Channel	1	0.14	0	-	90	10	0	0	2.0	3.0
2	Flat	7	0.36 ± 0.05	0.09 ± 0.03	16.0 ± 4.9	66 ± 15	26 ± 13	7 ± 6	1 ± 1	2.5 ± 0.2	2.8 ± 0.2
	Riffle/Rapid	6	0.22 ± 0.02	0.33 ± 0.08	35.7 ± 5.3	3 ± 2	12 ± 4	62 ± 9	24 ± 10	2.3 ± 0.3	1.5 ± 0.2
	Run	2	0.53 ± 0.16	0.30 ± 0.07	31.0	10 ± 5	20 ± 5	35 ± 5	35 ± 5	2.5 ± 0.5	2.5 ± 0.5
	Side Channel	7	0.19 ± 0.03	0.07 ± 0.04	20.5 ± 0.9	48 ± 14	36 ± 10	16 ± 7	1 ± 1	2.0 ± 0.4	2.4 ± 0.2
1B	Riffle/Rapid	1	0.09	0.50	9.0	0	50	50	0	2.0	1.0
	Side Channel	11	0.27 ± 0.04	0.20 ± 0.05	17.8 ± 2.9	35 ± 9	37 ± 6	26 ± 6	1 ± 1	2.3 ± 0.2	2.2 ± 0.9
1A	Riffle/Rapid	1	0.15	0.93	20.0	0	25	70	5	2.0	1.0
	Side Channel	11	0.26 ± 0.04	0.18 ± 0.05	16.7 ± 1.9	30 ± 10	43 ± 6	26 ± 6	1 ± 1	2.1 ± 0.2	2.1 ± 0.9

[a] See Appendix B for definitions.

3.1.3 Fish Community

3.1.3.1 Species Composition

In total, 4,169 fish were recorded during the small fish survey on the Moberly River (Table 3.3). The sample consisted of 16 species, which included 5 sportfish, 2 suckers, 7 minnows, and 2 sculpin species.

Table 3.3 Number and percent composition of fish species recorded in the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Species	Number	Percent
Sportfish	Arctic grayling	48	1.2
	Burbot	45	1.1
	Mountain whitefish	41	1.0
	Northern pike	14	0.3
	Rainbow trout	1	0.0
	Subtotal	*149*	*3.6*
Suckers	Longnose sucker	1,575	37.8
	White sucker	126	3.0
	Subtotal	*1,701*	*40.8*
Minnows/Trout-perch	Lake chub	478	11.5
	Longnose dace	850	20.4
	Northern pikeminnow	4	0.1
	Northern redbelly dace	51	1.2
	Peamouth	2	<0.1
	Redside shiner	661	15.9
	Trout-perch	9	0.2
	Subtotal	*2,055*	*49.3*
Sculpins	Prickly sculpin	1	<0.1
	Slimy sculpin	263	6.3
	Subtotal	*264*	*6.3*
Total		**4,169**	**100**

Sportfish accounted for 3.6% of the total sample. Arctic grayling were the numerically dominant sportfish, accounting for 1.2% of the total sample. Burbot and mountain whitefish were well represented within the group and accounted for 1.1% and 1.0%, respectively, of the total catch. Only 14 northern pike and one rainbow trout were recorded during the program.

Suckers accounted for 40.8% of the total sample. Longnose sucker was the most abundant species in the total sample (37.8%). White sucker (3.0%) was well represented. Minnow was the dominant group (49.3%) in the total sample. The minnow group was dominated by longnose dace (20.4%), redside shiner (15.9%) and lake chub (11.5%). The remaining minnow species (northern pikeminnow, northern redbelly dace, peamouth, and trout-perch) each accounted for $\leq 1.2\%$ of the total sample. The sculpin group accounted for 6.3% of the total sample. Of the two species recorded, slimy sculpin numerically dominated (6.3%), while only one prickly sculpin was recorded (< 0.1%).

3.1.3.2 Species Diversity and Distribution

Of the 16 fish species recorded on the Moberly River, no more than 14 species were located in any one reach or section (Table 3.4). The lowermost reach (1A) had more species (14 species) than the middle and uppermost reaches of the study area (7 to 12 species).

Table 3.4 Fish species distribution in each section of the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Species	Reach and Section									
		4	3		2				1B		1A
		1A	1	2	3	4	5	6	7	8	10
Sportfish	Arctic grayling			x		x	x		x	x	x
	Burbot	x	x	x	x	x	x	x	x	x	x
	Mountain whitefish	x					x		x	x	x
	Northern pike	x	x	x		x	x	x	x		
	Rainbow trout										x
Suckers	Longnose sucker	x	x	x	x	x	x	x	x	x	x
	White sucker		x			x		x		x	x
Minnows/Trout-perch	Lake chub	x	x	x				x	x	x	x
	Longnose dace	x	x	x	x	x	x	x	x	x	x
	Northern pikeminnow										x
	Northern redbelly dace									x	x
	Peamouth										x
	Redside shiner		x	x	x	x	x	x	x	x	x
	Trout-perch		x	x		x			x		
Sculpins	Prickly sculpin										x
	Slimy sculpin	x	x	x	x	x	x	x	x	x	x
Number of Species per	**Section**	**7**	**9**	**9**	**5**	**9**	**8**	**8**	**10**	**10**	**14**
	Reach	**7**	**10**		**11**				**12**		**14**

Five species were widely distributed and were recorded in most sections. These included burbot, longnose sucker, longnose dace, redside shiner, and slimy sculpin. Five species were primarily restricted to the lower portion of the study area. Rainbow trout, northern pikeminnow, peamouth, and prickly sculpin were recorded only in Section 1A, and northern redbelly dace were recorded in Sections 1B and 1A. The remaining six species were not recorded in every section, but were recorded in the majority of the reaches. Arctic grayling and white sucker were recorded in the lowermost reaches (3 to 1A). Mountain whitefish were recorded in every reach, except for Reach 3. Northern pike were recorded in the uppermost reaches (4 to 1B). Lake chub were recorded in every reach, but were only recorded in one section in Reach 2. Trout-perch were recorded in Reaches 3 to 1B but were only recorded in four sections.

3.1.3.3 Catch Rates

The survey targeted small fish ≤ 200 mm length. This section focuses on catch rates of selected species for this size range (Figure 3.4 and Figure 3.5); all catch rate data are presented in Appendix E.

Sportfish

Arctic grayling mean catch rates per section in the backpack electrofisher catch were highly variable and at sites where this species was recorded, the mean catch rate ranged from 0.5 fish/100 m to 5.2 fish/100 m. Arctic grayling catch rates were generally low throughout the study area, however highest catch rates occurred in Section 7.

Burbot were consistently encountered with the backpack electrofisher and were recorded in every section. Burbot mean catch rates at sites where this species was recorded ranged from 0.3 fish/100 m to 4.3 fish/100 m in the backpack electrofisher catch. Burbot catch rates were highest upstream of Section 7, and were low in downstream Sections 7 to 10.

Mountain whitefish mean catch rates per section in the backpack electrofisher catch were variable and at sites where this species was recorded, the mean catch rate ranged from 0.3 fish/100 m to 3.9 fish/100 m. The mean catch rate was highest in Section 7.

Northern pike catch rates were low. Mean catch rates at sites where this species was caught, ranged from 0.2 fish/100 m to 1.2 fish/100 m using the backpack electrofisher. Rainbow trout catch rates were low, with only one rainbow trout caught in Section 10 (0.08 fish/100 m; Appendix E).

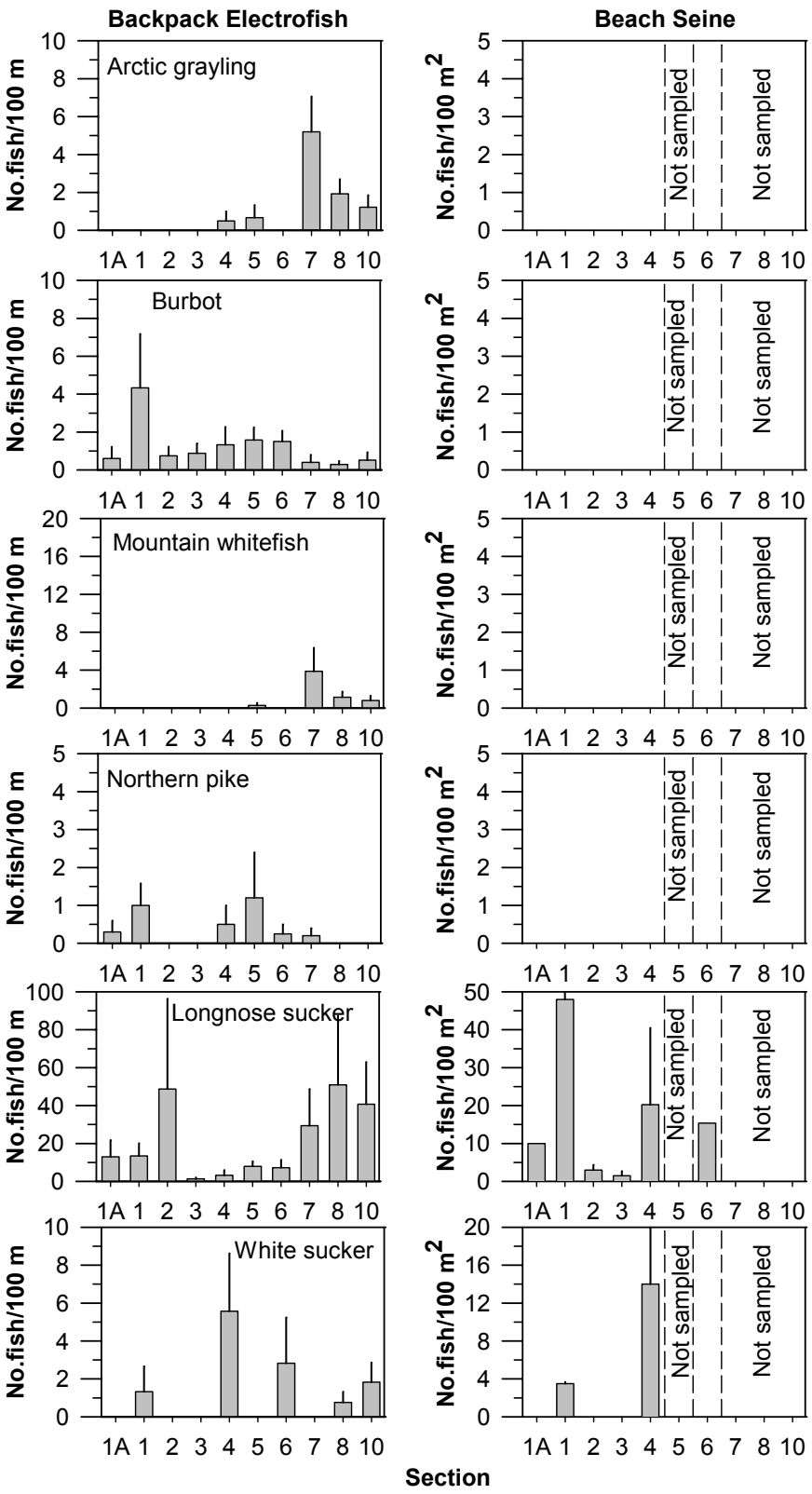

Figure 3.4 Catch rates (mean number of fish per site ± SE) of selected sportfish and sucker species in sampled sections on the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

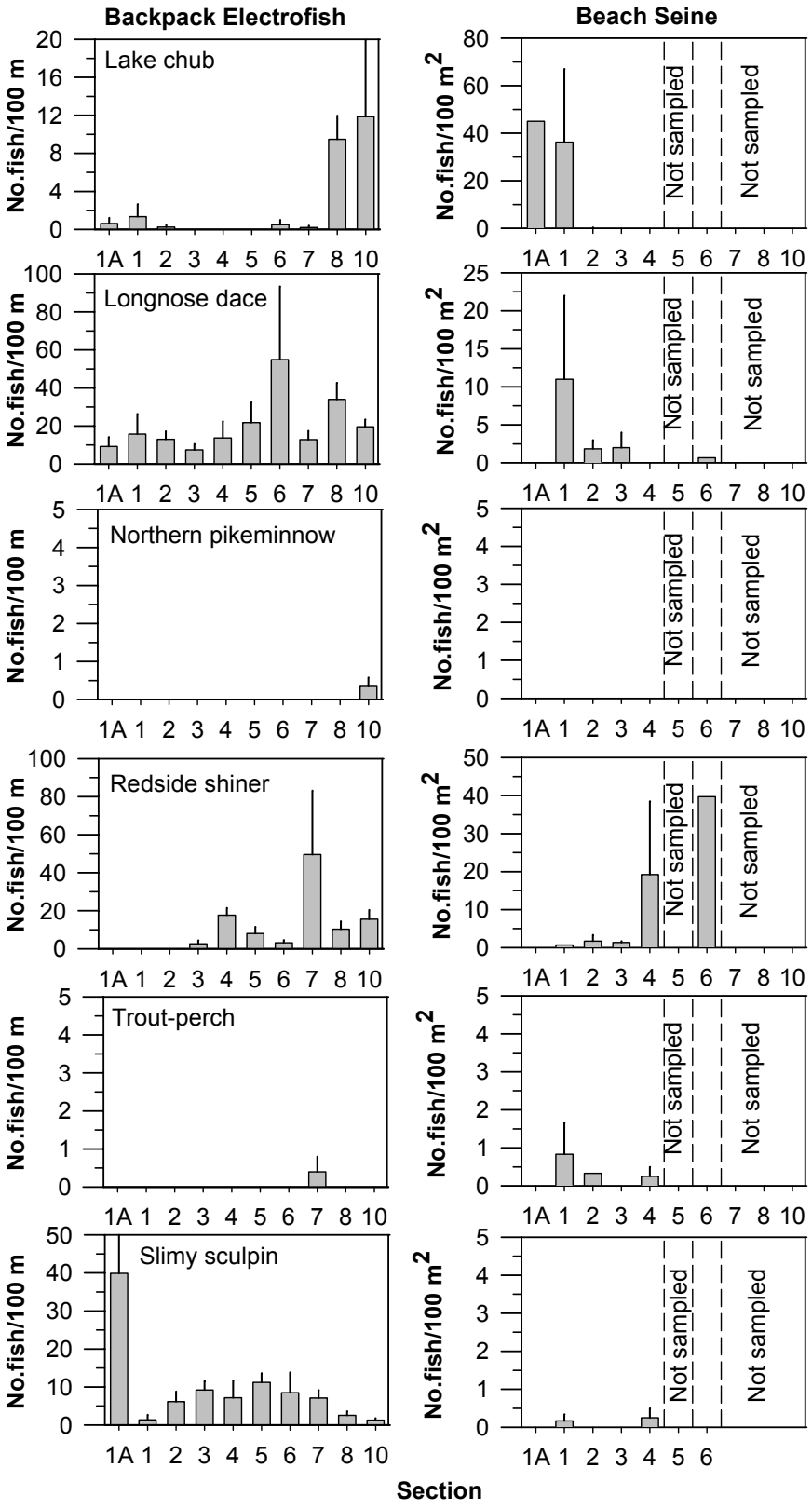

Figure 3.5 Catch rates (mean number of fish per site ± SE) of selected minnow, trout-perch, and sculpin species in sampled sections on the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Suckers

In the sucker group, catch rates of longnose suckers were the highest and this species was recorded in all sections. Mean catch rates ranged from 1.3 fish/100 m to 50.8 fish/100 m in the backpack electrofisher catch and 1.5 fish/100 m^2 to 48.0 fish/100 m^2 in the beach seine catch. Backpack electrofisher catch rates were > 12.0 fish/100 m in upper Sections 1A to 2. They decreased to 1.3 fish/100 m in Section 3, and then gradually increased in downstream sections.

Catch rates of white suckers were low. Mean catch rates at sites where this species was caught ranged from 0.8 fish/100 m to 5.6 fish/100 m in the backpack electrofisher catch and 0.0 fish/100 m^2 to 14.0 fish/100 m^2 in the beach seine catch.

Minnows and Sculpins

In the minnow group, catch rates of longnose dace were the highest and this species was widespread in the study area. In the sculpin group, slimy sculpin exhibited high catch rates and also were widespread. The spatial pattern of catch rates varied for some species. Lake chub, northern pikeminnow, trout-perch, longnose dace catch rates were higher in the downstream Sections 6, 7, 8, and 10. In contrast, slimy sculpin catch rates were highest in Sections 1A and 3 to 6.

3.1.3.4 Distribution of Age 0 Sportfish

Young-of-the-year (Age 0) fish of the sportfish species Arctic grayling, burbot, mountain whitefish, and northern pike were recorded during the survey (Table 3.5, Figure 3.6, Appendix E).

Age 0 Arctic grayling were not encountered from Reach 4 or Reach 3. Age 0 fish were recorded in Reach 2 (Sections 4 and 5), in Reach 1B (Sections 7 and 8), and Reach 1A (Section 10). Age 0 fish occurred at a low percentage of sites in Reach 2 (9.1%), but occurred at a higher percentage of sites in Reaches 1B and 1A (66.7% and 33.3%, respectively). The number of Age 0 Arctic grayling at each site was low. The mean number per site was ≤ 3.1 fish and the maximum number recorded was 7 fish per site.

Burbot were widespread and relatively numerous (i.e., catch rates were >0.4 fish/100 m) at sampled sections of the Moberly River (see Table 3.4 and Figure 3.4), but Age 0 fish were not widespread and they were not abundant. Age 0 burbot were recorded in Reach 3 (Section 1) and in Reach 2 (Section 6). Only one Age 0 fish was recorded in each reach.

Table 3.5 Summary of Age 0 sportfish frequency and number encountered on the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Species	Reach	Sections with Fish	Number of Sites with Fish		Number of Fish per Site	
			Number	Percent	Mean	Range
Arctic grayling	4	-	0			
	3	-	0			
	2	4, 5	2	9.1	1.5	1 – 2
	1B	7, 8	8	66.7	3.1	2 – 6
	1A	10	4	33.3	3.0	1 – 7
Burbot	4	-	0			
	3	1	1	9.1	1.0	-
	2	6	1	4.5	1.0	-
	1B	-	0			
	1A	-	0			
Mountain whitefish	4	-	0			
	3	-	0			
	2	5	1	4.5	1.0	-
	1B	7, 8	6	50.0	2.3	1 – 4
	1A	10	3	25.0	3.3	1 – 7
Northern pike	4	1A	1	25.0	1.0	-
	3	1	2	18.6	1.0	-
	2	4, 5, 6	3	13.6	1.7	1 – 3
	1B	7	1	8.3	1.0	-
	1A	-	0			

Age 0 mountain whitefish were not encountered from Reach 3 or Reach 4. Age 0 fish were recorded in Reach 2 (Section 5), Reach 1B (Sections 7 and 8), and Reach 1A (Section 10). Mountain whitefish occurred at a low percentage of sites in Reach 2 (4.5%), but occurred at a higher percentage of sites in Reaches 1B, and 1A (50.0%, 25.5%, respectively). The mean number of fish per site ranged from 1.0 (Reach 2) to 3.3 fish (Reach 1A) and the maximum number recorded was 7 fish per site.

Age 0 northern pike were recorded in Reaches 4 to 1B, but were absent from Reach 1A. Age 0 fish were present in Sections 1A, 1, and 4 to 7. Percent occurrence ranged from 8.3% in Reach 1B to 25% in Reach 4. The mean number of fish per site ranged from 1.0 to 1.7 fish and the maximum number recorded was 3 fish per site.

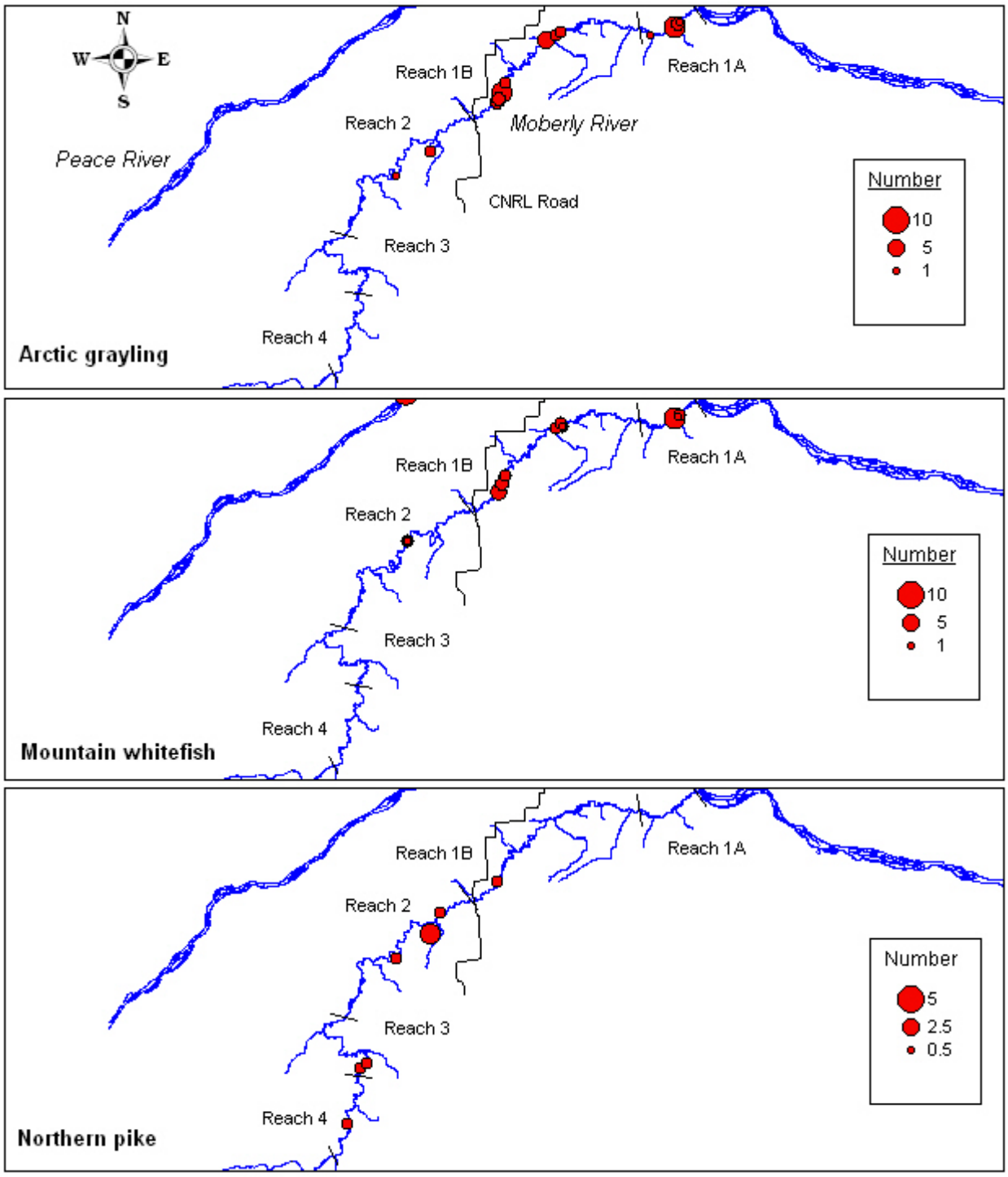

Figure 3.6 Distribution and number per site of selected Age 0 sportfish at sampled sites in each reach on the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

3.1.3.5 Biological Characteristics

A wide size range of fish was recorded during the Moberly River fish survey (Table 3.6, Figure 3.7, Appendix F). Age 0 classes (based on modal peaks and aged structures) were well represented in the Arctic grayling, mountain whitefish, northern pike, longnose sucker, and white sucker samples. Age 1 classes (based on modal peaks) were well represented in the burbot sample.

Larger (> 200 mm length), presumably older fish were only recorded for burbot, northern pike, and longnose sucker. It should be noted that the survey methods on the Moberly River (beach seine and backpack electrofisher) targeted small fish (≤ 200 mm in length); therefore, adult fish were under represented in the sample.

Table 3.6 Length characteristics of fish species recorded on the Moberly River, Site C Moberly River and Halfway River fish Inventory 2010 (all methods combined).

Group	Species	Number	Median Length (mm)	Range
Sportfish	Arctic grayling	40	74	60 – 95
	Burbot	41	157	72 – 280
	Mountain whitefish	23	76	49 – 86
	Rainbow trout	1	120	–
	Northern pike	11	155	118 – 228
Suckers	Longnose sucker	370	33	15 – 200
	White sucker	88	25	17 – 156
Minnows/ Trout-perch	Lake chub	124	40.5	12 – 117
	Longnose dace	476	30	14 – 121
	Northern pikeminnow	4	107.5	97 – 130
	Northern redbelly dace	34	39	17 – 51
	Peamouth	2	125.5	105 – 146
	Redside shiner	312	27	13 – 118
	Trout-perch	9	26	16 – 45
Sculpins	Prickly sculpin	1	92	–
	Slimy sculpin	200	61	20 – 99

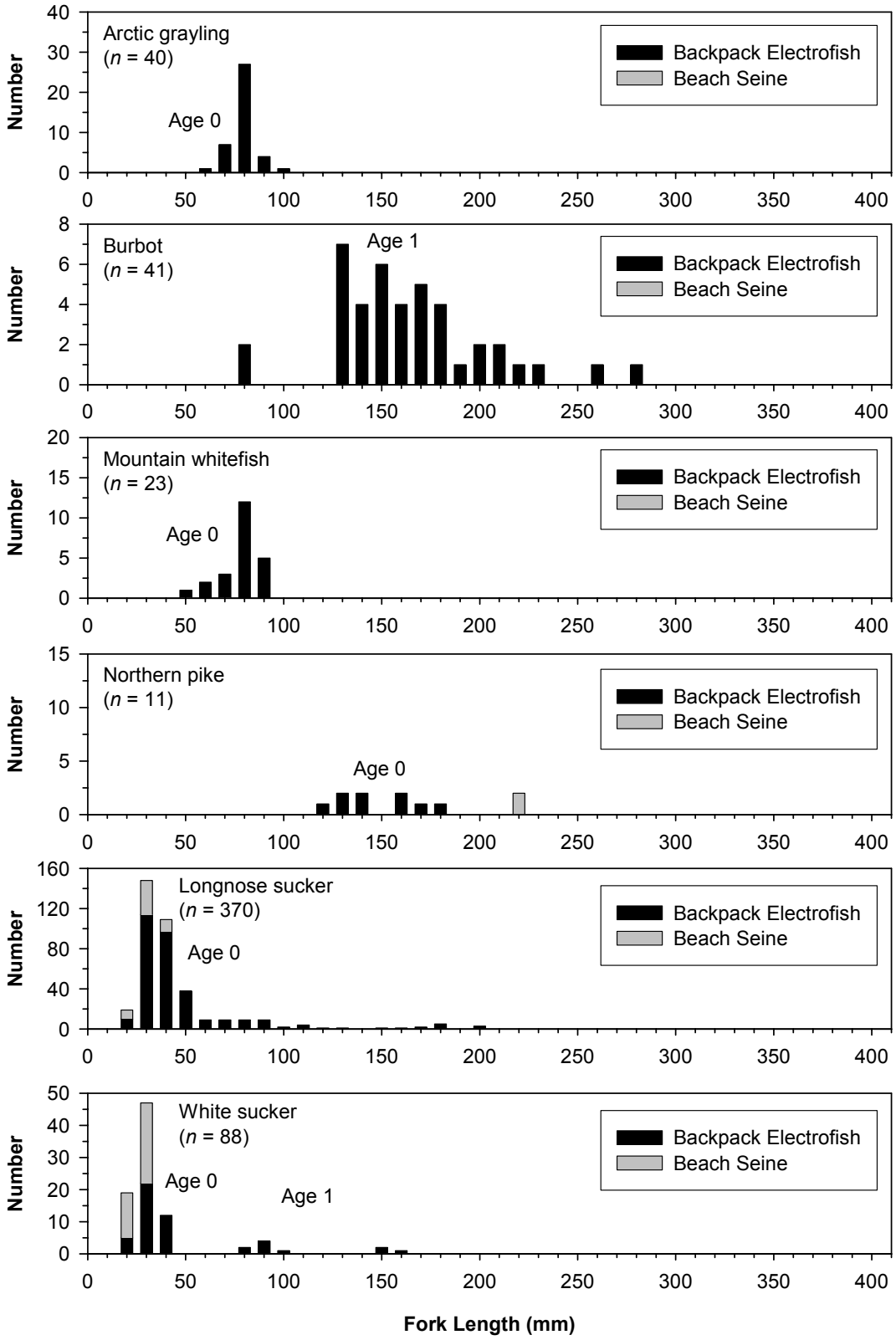

Figure 3.7 Size distributions of selected large-fish species sampled on the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010 (all methods and sample areas combined).

3.2 HALFWAY RIVER

3.2.1 Environmental Characteristics

3.2.1.1 General Water Quality

Overall average pH of the Halfway River during the summer survey was 8.1, overall average conductivity was 404 µS/cm, overall average water temperature was 17.6°C and water clarity was high (Table 3.7, Appendix C). Conductivity and pH did not change substantially between reaches during the survey. Water clarity decreased from upstream to downstream and water temperature increased slightly from upstream to downstream.

Table 3.7 General water quality of the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Reach	pH			Conductivity (µS/cm)			Water clarity (cm)			Temperature (°C)		
	n	**Avg.**	**Range**	***n***	**Avg.**	**Range**	***n***	**Avg.**	**Range**	***n***	**Avg.**	**Range**
4	18	8.0	7.7 – 8.2	37	420	406 – 470	18	203	100 – >200	37	17.3	14.8 – 24.7
3	24	8.1	7.6 – 8.4	52	396	353 – 451	23	>200	>200 – TCB[a]	52	17.2	14.8 – 22.9
2	11	8.1	7.7 – 8.3	23	401	383 – 444	4	71	26 – 145	23	18.2	16.8 – 21.1
1	6	8.2	8.1 – 8.4	12	396	386 – 405	2	45	15 – 75	12	18.8	16.5 – 21.3
Overall	59	8.1	7.6 – 8.4	124	404	353 – 470	47	189	15 – TCB	124	17.6	14.8 – 24.7

[a] To channel bed.

3.2.1.2 Water Temperature

Water temperatures of the Halfway River were continuously monitored during the open water period in 2010 (Mainstream 2011). During the monitored period at a station located near the confluence of the Peace River (5 May to 21 October) hourly water temperatures ranged between 3.4°C and 19.5°C. Average daily water temperatures were approximately 5.0°C at the beginning of the monitored period (Figure 3.8). Average daily water temperatures increased during May through August when they peaked at 19.5°C before declining until late October when the thermograph was removed. Water temperatures during the field survey were warm. Temperatures ranged between 15.6°C and 21.1°C with an average of 18.4°C.

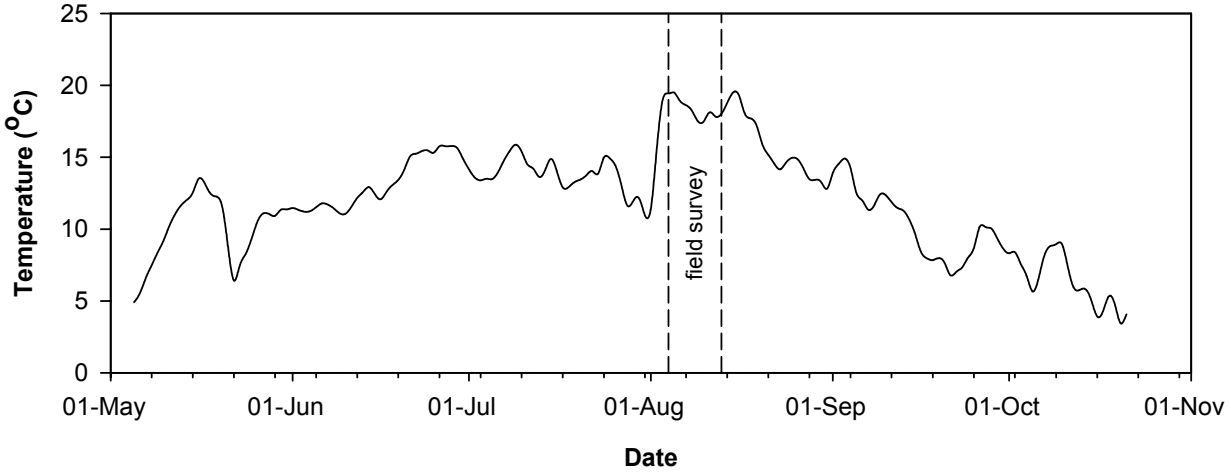

Figure 3.8 Mean daily water temperatures of the Halfway River near the confluence with the Peace River, Site C Moberly River and Halfway River Fish Inventory 2010 (data from Mainstream 2011).

3.2.1.3 Discharge

Based on preliminary WSC data, discharge of the Halfway River during 2010 ranged between 21.9 m^3/s and 199.4 m^3/s (Figure 3.9). Mean daily discharge increased starting in mid May and peaked in late May. This was followed by two smaller peaks in June and July. Discharge then declined to base flows by August. In 2010, discharge was higher than historical discharge from January to April, the 2010 peak discharge was earlier in the year and not as high as the historical peak, and discharge returned to base flow conditions much earlier (i.e., in August rather than October).

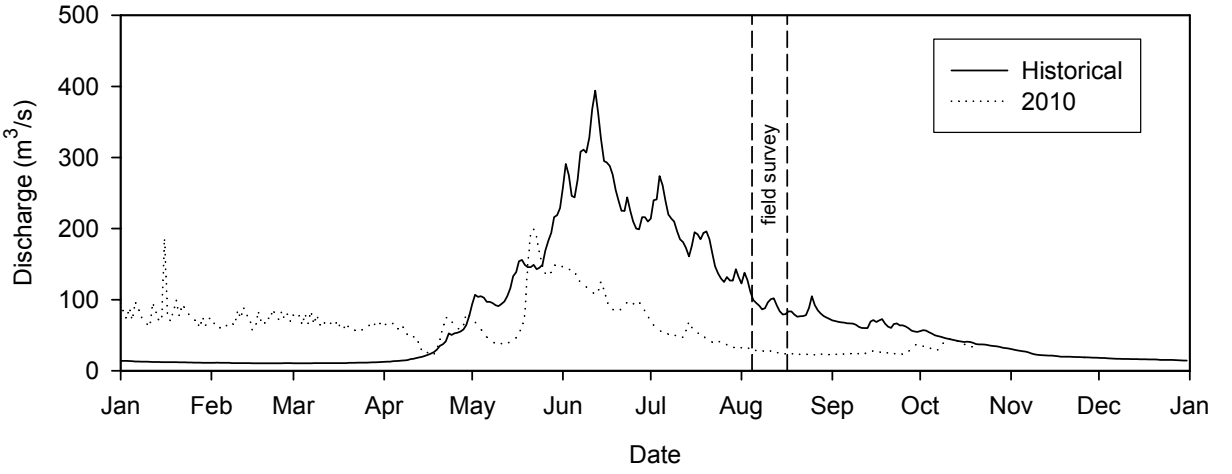

Figure 3.9 Mean daily discharge of the Halfway River in 2010 with comparison to historical mean daily discharge measured at WSC station 07FA006, Site C Moberly River and Halfway River Fish Inventory 2010.

Average daily discharge during the fish survey (4 to 13 August) was 27.9 m^3/s. Average daily discharge gradually decreased from the start of the survey (30.9 m^3/s) to the end of the survey (25.5 m^3/s).

3.2.2 Fish Habitat

3.2.2.1 General Description

The Halfway River study area was stratified into four reaches based on physical characteristics (Table 1.1). Reach 4 included the section of river between confluences of the Chowade River and the Graham River. Reach 4 represented a smaller watercourse than the other reaches because it was located upstream of the Graham River, which is a major tributary to the Halfway River. Field observations suggested that the Graham River contributed approximately 50% of the Halfway River discharge at the time of the survey.

Portions of the Halfway River in Reach 4 were laterally unstable, water depths were generally shallow, and the bed material was dominated by gravels and cobbles (Plate 11). Several small named and unnamed tributaries entered the Halfway River in this reach. The dominant habitats in this reach were long runs interspersed with riffles. There were numerous side channels and backwater areas that provided protected areas for fish (Plate 12). This reach had the potential to provide high quality habitats for species such as Arctic grayling, bull trout, mountain whitefish, and rainbow trout.

Reach 3 was located downstream of the Graham River confluence. There was a short (approximately 10 km) section immediately downstream of the Graham River that contained numerous outcrops and a series of bedrock sills. The remainder of the reach consisted of an occasionally confined, wide channel with braiding in some areas (Plate 13). There was frequent bank erosion (Plate 14) that contributed large woody debris and bed material in this reach which consisted primarily of clean cobbles and gravels. Several small named and unnamed tributaries entered the Halfway River in this reach. There were numerous side channels containing physical features that provided good quality fish habitat. This reach contained an abundance of rearing, feeding, and overwintering habitats for fish species found in the Halfway River (e.g., Arctic grayling, bull trout, mountain whitefish, and rainbow trout).

The upstream boundary of Reach 2 was the confluence of the Cameron River, which represented a major reach break in the study area. The Halfway River in this reach receives turbid water from the Cameron River and is mostly confined by high valley walls (Plate 15). Unlike the upstream reaches, no permanent tributaries entered the Halfway River in Reach 2. The river channel in Reach 2 frequently abuts the valley wall, which results in erosion causing introduction of sediments. There is a large active slump at Km 14. Side channels were not abundant and bed material in this reach consisted of cobbles, gravels, interspersed with sands and silts (Plate 16). Bed material typically was highly embedded in low velocity areas.

The physical characteristics of Reach 1, which represents the potential area of inundation by the proposed Site C Reservoir, were similar to Reach 2 characteristics (Plate 17). However, this section of river contained extended runs interspersed by short riffle/rapid sections containing an abundance of boulders (Plate 18). Reach 1 exhibited the same habitat potential as Reach 2, with the exception of a higher suspended sediment load during high flow periods.

3.2.2.2 Site Habitat Characteristics

Habitat types recorded at sampled sites on the Halfway River consisted of flat, pool, riffle/rapid, run, side channel, backwater, and tributary confluence (Table 3.8, Appendix D). Several habitat parameters exhibited spatial differences between reaches (Figure 3.10). Water depth, water velocity, percent fines, and substrate compaction decreased from Reach 4 to Reach 1, while percent pebbles/gravels and substrate embeddedness increased. D90, and percent cobble and boulder/bedrock did not substantially change between reaches.

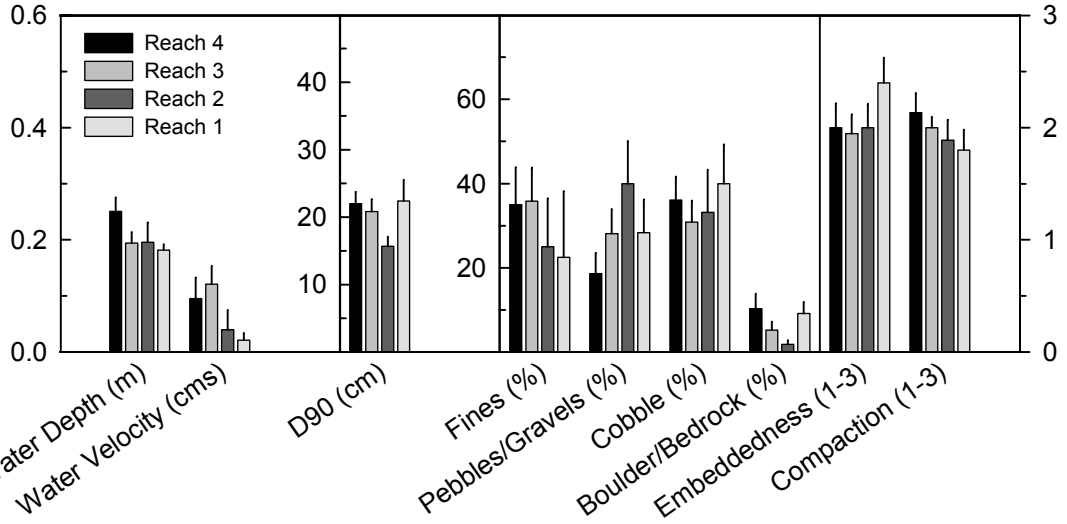

Figure 3.10 Physical and bed material characteristics (mean ± SE) of reaches in the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010 (Y-axis units specific to parameter; based on data collected at beach seine and backpack electrofisher sites).

Table 3.8 Physical characteristics[a] of fish habitats sampled at backpack electrofisher and beach seine sites on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Reach	Habitat Type	*n*	Water Depth (m)	Water Velocity (m/s)	D90 (cm)	Bed Material Type (%)				Substrate Condition	
						Fines	PE/GR	CO	BO/BE	Compaction	Embeddedness
4	Backwater	5	0.35 ± 0.03	0	19.3 ± 4.1	70 ± 16	11 ± 7	13 ± 6	6 ± 6	2.0 ± 0.4	2.3 ± 0.5
	Flat	5	0.19 ± 0.02	0	21.4 ± 2.0	24 ± 8	12 ± 5	55 ± 7	9 ± 2	2.4 ± 0.2	2.6 ± 0.2
	Pool	1	0.50	0	18.0	40	0	60	0	2.0	3.0
	Riffle/Rapid	3	0.17 ± 0.01	0.35 ± 0.03	27.0 ± 7.0	3 ± 3	27 ± 12	43 ± 7	27 ± 18	2.3 ± 0.3	1.0
	Run	3	0.19 ± 0.01	0.22 ± 0.11	22.0 ± 4.7	3 ± 3	47 ± 15	40 ± 12	10 ± 6	1.7 ± 0.7	1.3 ± 0.3
	Side Channel	1	0.20	0.00	-	100	0	0	0	-	-
3	Backwater	5	0.32 ± 0.05	0.00	-	98 ± 2	2 ± 2	0	0	-	-
	Flat	9	0.18 ± 0.02	0.02 ± 0.02	19.1 ± 21	33 ± 7	35 ± 7	29 ± 5	2 ± 1	2.0	2.6 ± 0.2
	Pool	1	0.18	0	13.0	65	5	30	0	2.0	3.0
	Riffle/Rapid	5	0.14 ± 0.02	0.35 ± 0.06	21.8 ± 2.6	1 ± 1	34 ± 14	55 ± 11	10 ± 4	2.0 ± 0.3	1.2 ± 0.2
	Run	4	0.14 ± 0.03	0.24 ± 0.03	25.5 ± 8.4	0	44 ± 21	43 ± 14	14 ± 9	2.0 ± 0.4	1.3 ± 0.3
2	Backwater	4	0.27 ± 0.08	0	19.5 ± 5.3	54 ± 27	20 ± 17	23 ± 19	4 ± 2	2.0 ± 0.7	1.5 ± 0.4
	Flat	4	0.17 ± 0.05	0	14.8 ± 1.5	14 ± 6	44 ± 15	43 ± 19	0	2.0	2.0 ± 0.4
	Riffle/Rapid	1	0.11	0.39	15.0	0	60	40	0	2.0	2.0
	Run	1	0.11	0.01	14.0	5	30	60	5	2.0	2.0
	Tributary	1	0.19	0.04	14.0	0	95	5	0	1.0	3.0
1	Backwater	2	0.19 ± 0.04	0	20.0	50 ± 50	25 ± 25	20 ± 20	5 ± 5	2.0	2.0
	Flat	1	0.16	0.02	20.0	15	40	40	5	1.0	3.0
	Run	3	0.18	0.04 ± 0.02	24.0 ± 6.0	7 ± 3	27 ± 9	53 ± 9	13 ± 3	2.0	2.3 ± 0.3

[a] See Appendix B for definitions.

3.2.3 Fish Community

3.2.3.1 Species Composition

In total, 8,481 fish were recorded during the small fish survey on the Halfway River (Table 3.9). The sample consisted of 20 species, which included 8 sportfish, 2 suckers, 7 minnows, and 3 sculpin species. Sportfish accounted for 22.9% of the total sample. The sportfish group was dominated by mountain whitefish, which accounted for 19.5% of the total sample. Arctic grayling (1.2%), bull trout (1.2%), and rainbow trout (0.9%), also were represented. The remaining sportfish, including 1 kokanee, 6 burbot, 3 northern pike, and 1 walleye were scarce.

Table 3.9 Number and percent composition of fish species recorded in the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Species	Number	Percent
Sportfish	Arctic grayling	105	1.2
	Bull trout	102	1.2
	Burbot	6	0.1
	Kokanee	1	<0.1
	Mountain whitefish	1,653	19.5
	Northern pike	3	<0.1
	Rainbow trout	75	0.9
	Walleye	1	<0.1
	Subtotal	*1,946*	*22.9*
Sucker	Largescale sucker	707	8.3
	Longnose sucker	2,436	28.7
	Subtotal	*3,143*	*37.1*
Minnows/Trout-perch	Flathead chub	2	<0.1
	Lake chub	419	4.9
	Longnose dace	1,514	17.9
	Northern pikeminnow	201	2.4
	Northern redbelly dace	4	<0.1
	Redside shiner	891	10.5
	Trout-perch	3	<0.1
	Subtotal	*3,034*	*35.8*
Sculpin	Prickly sculpin	6	0.1
	Slimy sculpin	350	4.1
	Spoonhead sculpin	2	<0.1
	Subtotal	*358*	*4.2*
Total		**8,481**	**100**

Suckers were the dominant group and accounted for 37.1% of the total sample. Longnose sucker numerically dominated with 28.7% of the total sample. Largescale suckers accounted for 8.3% of the total sample.

Minnows were the second most numerically dominant group (35.8%) in the total sample. Longnose dace (17.9%), redside shiner (10.5%), lake chub (4.9%), and northern pikeminnow (2.4%) were numerically dominant. The remaining minnow species, flathead chub, northern redbelly dace, and trout-perch, each accounted for < 0.1% of the total sample.

The sculpin group accounted for 4.2% of the total sample. Slimy sculpin numerically dominated the group (4.1%), while prickly sculpin (*n* = 6) and spoonhead sculpin (*n* = 2) were scarce.

3.2.3.2 Species Diversity and Distribution

Of the 20 fish species recorded on the Halfway River, no more than 17 species were located in any one reach or section (Table 3.10). The lowermost Reaches 1 and 2 had more species (16 and 17, respectively) than the uppermost Reaches 3 and 4, (12 species in each). Species diversity was highest in lowermost Sections 8, 9, and 10 (13 to 16 species).

Table 3.10 Fish species distribution in each section of the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Species	Reach and Section									
		4		3					2		1
		1	2	3	4	5	6	7	8	9	10
Sportfish	Arctic grayling	x	x	x	x	x	x	x	x	x	x
	Bull trout	x	x	x	x	x	x	x	x	x	x
	Burbot		x							x	x
	Kokanee									x	
	Mountain whitefish	x	x	x	x	x	x	x	x	x	x
	Northern pike								x	x	x
	Rainbow trout	x	x	x	x	x	x			x	x
	Walleye										x
Sucker	Largescale sucker		x	x	x	x	x	x	x	x	x
	Longnose sucker	x	x	x	x	x	x	x	x	x	x
Minnows/Trout-perch	Flathead chub				x						x
	Lake chub	x	x	x	x	x	x	x	x	x	x
	Longnose dace	x	x	x	x	x	x	x	x	x	x
	Northern pikeminnow								x	x	x
	Northern redbelly dace	x									
	Redside shiner	x		x	x	x	x	x	x	x	x
	Trout-perch								x		
Sculpin	Prickly sculpin									x	x
	Slimy sculpin	x	x	x	x	x	x	x	x	x	x
	Spoonhead sculpin							x	x		
Number of Species per	**Section**	**10**	**10**	**10**	**11**	**10**	**10**	**10**	**13**	**15**	**16**
	Reach	**12**		**12**					**17**		**16**

Ten species were widely distributed and were recorded in most sections. These included Arctic grayling, bull trout, mountain whitefish, rainbow trout, largescale sucker, longnose sucker, lake chub, longnose dace, redside shiner, and slimy sculpin. Five species were primarily restricted to the lower portion of the study area, including kokanee, northern pike, walleye, northern pikeminnow, and prickly sculpin. The five remaining species burbot, flathead chub, northern redbelly dace, trout-perch, and spoonhead sculpin were scarce and occurred in no more than three sections.

3.2.3.3 Catch Rates

The Halfway River survey targeted small fish ≤ 200 mm length. This section focuses on catch rates of selected species for this size range; all catch rate data are presented in Appendix E. Catch rates generated using the three fish capture methods varied according to fish group. Species in the sportfish group were most frequently encountered and catch rates were highest using boat electrofisher and backpack electrofisher (Figure 3.11). Sucker species tended to be equally abundant using all three methods.

Species in the minnow and sculpin groups also were recorded using all three fish capture methods; however, most were frequently encountered and exhibited highest catch rates using backpack electrofisher and beach seine (Figure 3.12).

Sportfish

Arctic grayling were consistently encountered with the boat electrofisher and mean catch rates per section in the boat electrofisher catch where fish were present ranged from 0.2 fish/km to 5.2 fish/km. Arctic grayling catch rates were highest in the upstream Section 1 and lowest in the downstream sections (9 and 10). Catch rates were similar in Sections 3 to 6 and 8; they were also high in Section 7, located just upstream of the Cameron River confluence. Backpack electrofisher catch rates were low and Arctic grayling were only caught using this method in Sections 1 and 5.

Bull trout catch rates were low and this species was recorded primarily with the boat electrofisher. Where this species was recorded, mean catch rates ranged from 0.2 fish/km to 0.8 fish/km. Bull trout exhibited a downward trend in catch rates from upstream to downstream; and similar to Arctic grayling, bull trout catch rates were highest in Section 1. Bull trout were only caught using the backpack electrofisher method in Section 1.

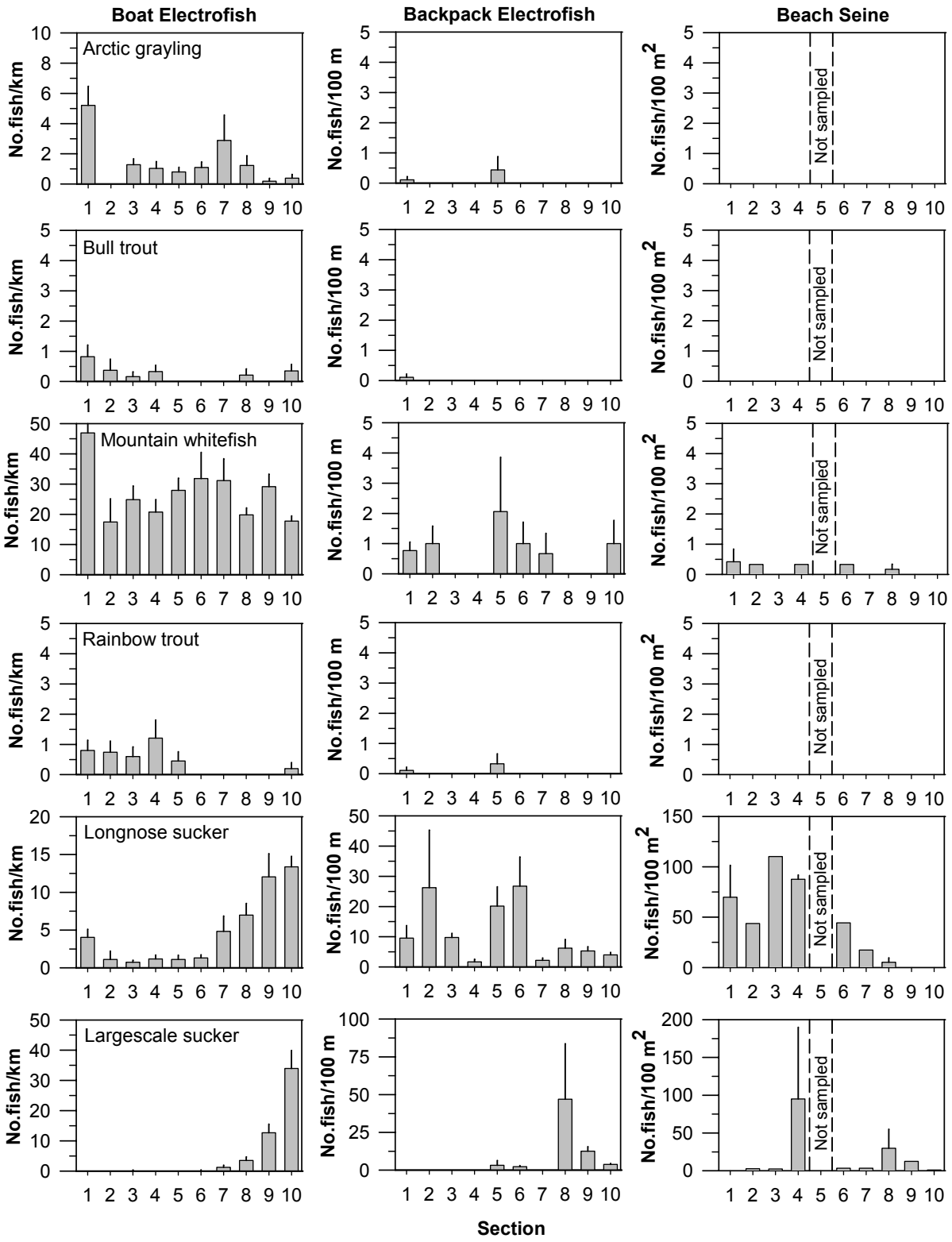

Figure 3.11 Catch rates (mean number of fish ± SE) of selected sportfish and sucker species in sampled sections on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

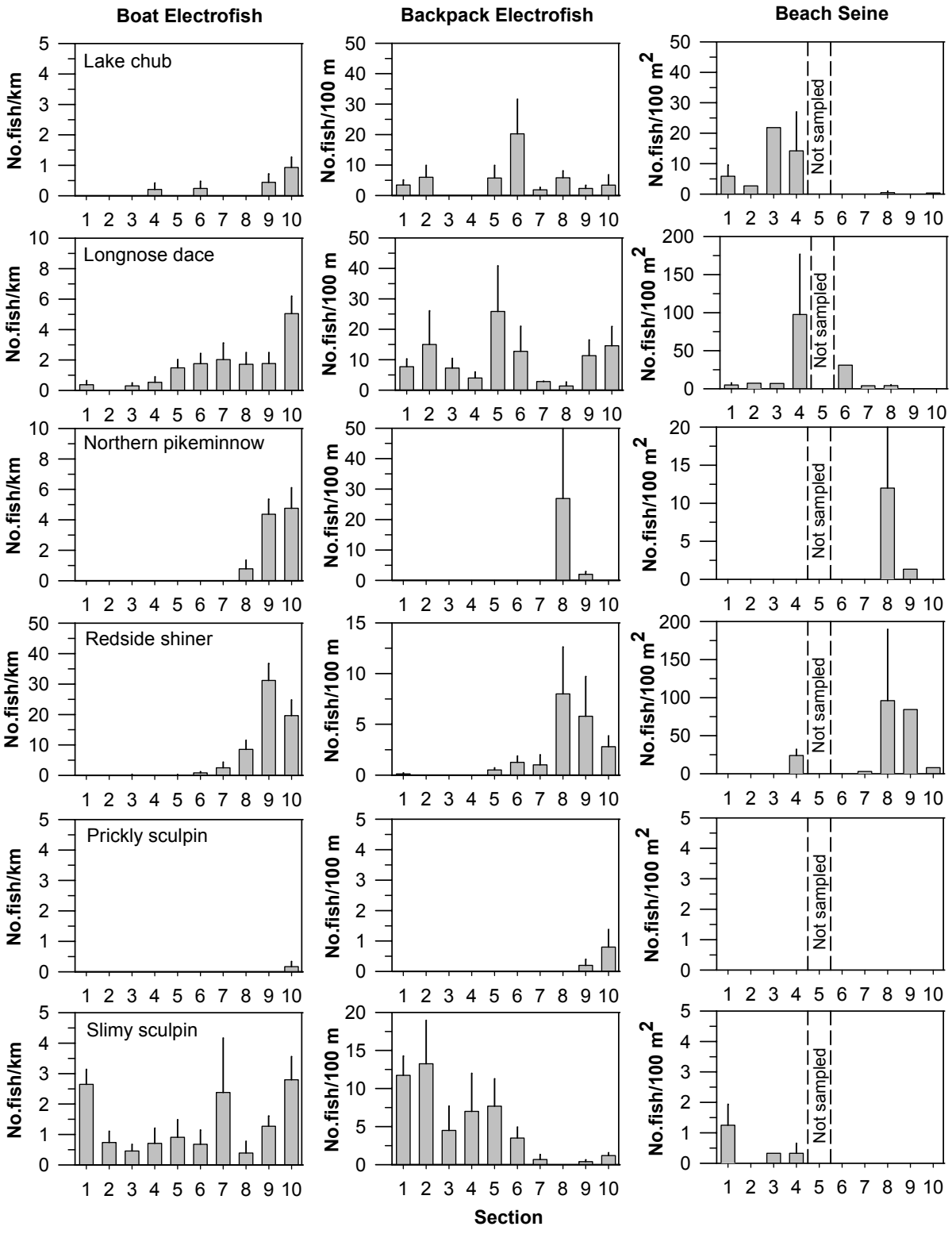

Figure 3.12 Catch rates (mean number of fish ± SE) of selected minnow and sculpin species in sampled sections on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Mountain whitefish mean catch rates were highest of all the sportfish and were encountered primarily with the boat electrofisher and backpack electrofisher. Mean catch rates ranged from 17.4 fish/km to 47.0 fish/km using the boat electrofisher and 0.0 fish/100 m to 2.1 fish/100 m using the backpack electrofisher. Mountain whitefish were the only sportfish encountered with the beach seine, but catch rates were low (i.e., less than 0.5 fish/100 m^2). Mountain whitefish catch rates varied spatially; catch rates were highest in Section 1, intermediate in Sections 2 to 7 and 9, and lowest in Sections 8 and 10.

Rainbow trout were primarily recorded in the boat electrofisher catch. Mean catch rates in sections that contained this species ranged from 0.2 fish/km to 1.2 fish/km. Rainbow trout catch rates exhibited a truncated distribution; catch rates were highest in Sections 1 to 5, but catch rates were very low in the lowermost Sections 6 to 10.

Burbot, kokanee, northern pike, and walleye were only recorded in the boat electrofisher catch. Catch rates for these species were < 0.1 fish/km (Appendix E).

Suckers

Longnose sucker catch rates were high and this species was recorded in all sections. Mean catch rates ranged from 0.7 fish/km to 13.4 fish/km in the boat electrofisher catch and 1.7 fish/100 m to 26.8 fish/100 m in the backpack electrofisher catch. Longnose sucker also were encountered using beach seine, although the catch was highly variable (range from 0.0 fish/100 m^2 to 110.2 fish/100 m^2). There was no consistent spatial pattern in longnose sucker catch rates between methods. Highest boat electrofisher catch rates occurred in Sections 9 and 10, while highest backpack electrofisher catch rates occurred in Sections 2, 5, and 6 and highest beach seine catch rates occurred in Sections 1, 3, and 4.

Largescale sucker were largely restricted to downstream sections of the study area. They were recorded as far upstream as Section 2, but catch rates were generally highest from Section 8 downstream to Section 10. Boat electrofisher catch rates increased from Section 7 to 10, whereas, backpack electrofisher catch rates decreased from Section 8 to 10. In these sections, mean boat electrofisher catch rates ranged from 0.2 fish/km to 34.0 fish/km and mean backpack electrofisher catch rates ranged from 2.3 fish/100 m to 47.0 fish/100 m. Largescale sucker were also in the beach seine catch -- the highest recorded mean value was 94.9 fish/100 m^2 in Section 4.

Minnows and Sculpins

Lake chub and longnose dace exhibited the highest catch rates in the minnow group, while in the sculpin group slimy sculpin exhibited the highest catch rates and were widespread. The pattern of species catch rate varied by method and/or by species. For all methods, there was no strong pattern for lake chub. Boat electrofisher catch rates for longnose dace increased from upstream to downstream, while backpack electrofisher catch rates varied between sections. Northern pikeminnow and redside shiner were largely restricted to downstream sections of the study area and for all capture methods; catch rates were highest in Sections 8 and 9. Slimy sculpin catch rates did not exhibit a consistent trend in the boat electrofisher catch, but the backpack electrofisher catch rates tended to decline from upstream to downstream.

3.2.3.4 Distribution of Age 0 Sportfish

Young Arctic grayling, bull trout, mountain whitefish, and rainbow trout were an important component of the catch. However, no young-of-the-year (Age 0) bull trout and only two Age 0 rainbow trout were encountered in the Halfway River during the survey (Table 3.11, Figure 3.13, Appendix E). This is of interest because it suggested that early rearing by bull trout and rainbow trout occurred in Halfway River tributaries and not in the mainstem Halfway River.

Age 0 Arctic grayling were located in Reaches 4 (Section 1), 3 (Section 5), and 2 (Section 9), but were absent from the lowermost Reach 1. The occurrence of Age 0 Arctic grayling at sampled sites was low (2.7% to 5.8%). The number of Age 0 Arctic grayling per site also was low. The mean number of fish was ≤ 1.3 fish per site and the maximum number recorded was 2 fish per site.

Age 0 mountain whitefish were widespread and abundant in the Halfway River study area. They were recorded in all reaches and in all sections. The percentage of sites with fish also was high (≥ 54.1%). The mean number of Age 0 mountain whitefish per site was high in most reaches (≥ 6.8 fish per site). A low mean value of 1.8 fish per site was recorded in Reach 4. The maximum number recorded was 40 fish per site.

Age 0 rainbow trout were recorded only at one site in Section 5 of Reach 3. Two fish were recorded at that site.

Table 3.11 Summary of Age 0 sportfish frequency and number encountered on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Species	Reach	Sections with Fish	Number of Sites with Fish		Number of Fish per Site	
			No.	Percent	Mean	Range
Arctic grayling	4	1	1	2.7	1	-
	3	5	3	5.8	1.3	1 – 2
	2	9	1	4.3	1.0	-
	1	-				
Mountain whitefish	4	1, 2	20	54.1	1.8	1 – 5
	3	3, 4, 5, 6, 7	31	59.6	6.9	1 – 40
	2	8, 9	13	56.5	12.8	1 – 26
	1	10	8	66.7	6.8	1 – 12
Rainbow trout	4	-				
	3	5	1	1.9	2.0	-
	2	-				
	1	-				

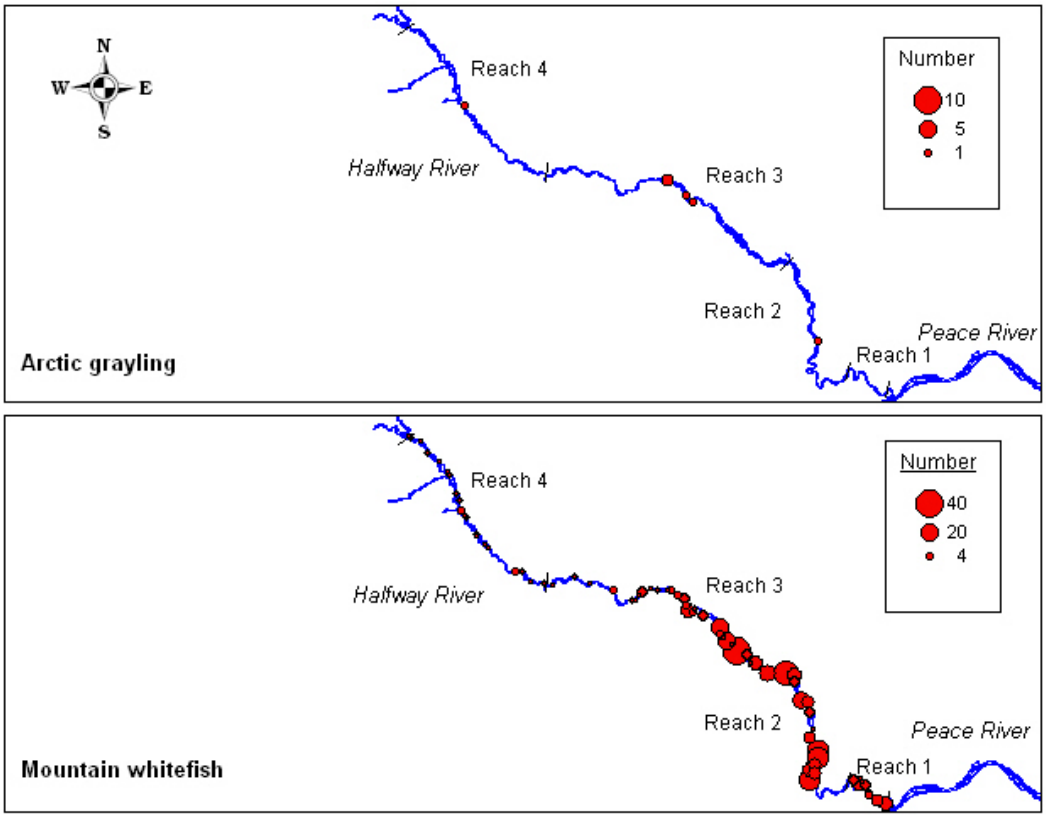

Figure 3.13 Distribution and number per site of selected Age 0 sportfish at sampled sites on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

3.2.3.5 Biological Characteristics

A wide size range of fish was recorded during the Halfway River fish survey (Table 3.12, Figure 3.14, Appendix F). Age 0 and/or Age 1 classes (based on modal peaks and aged structures) were well represented in the Arctic grayling, bull trout, mountain whitefish, rainbow trout, largescale sucker, and longnose sucker samples. These two age classes were generally numerically dominant; however, in the Arctic grayling, bull trout, and rainbow trout samples, Age 0 fish were scarce or absent.

Larger (> 200 mm length), presumably older fish were well represented in samples of all sportfish species. The paucity of larger longnose sucker and largescale sucker in the sample was an artifact of the survey methods used, which targeted small fish (≤ 200 mm length). Field observations indicated that numerous large fish were present and not collected.

Table 3.12 Length characteristics of fish species recorded on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010 (all methods combined).

Group	Species	Number	Median (mm)	Range (mm)
Sportfish	Arctic grayling	102	151	60 – 339
	Bull trout	85	272	134 – 505
	Burbot	4	486.5	404 – 627
	Kokanee	1	223	–
	Mountain whitefish	814	130.5	48 – 402
	Northern pike	2	474	444 – 504
	Rainbow trout	61	213	46 – 318
	Walleye	1	421	–
Suckers	Largescale sucker	368	66.5	18 – 446
	Longnose sucker	729	67	17 – 395
Minnows/ Trout–perch	Flathead chub	2	106	55 – 157
	Lake chub	195	55	17 – 105
	Longnose dace	416	26	12 – 97
	Northern pikeminnow	102	112.5	20 – 283
	Northern redbelly dace	4	17.5	15 – 19
	Redside shiner	318	67	10 – 132
	Trout–perch	3	32	26 – 36
Sculpins	Prickly sculpin	6	97.5	77 – 101
	Slimy sculpin	337	61	19 – 101
	Spoonhead sculpin	2	64	31 – 97

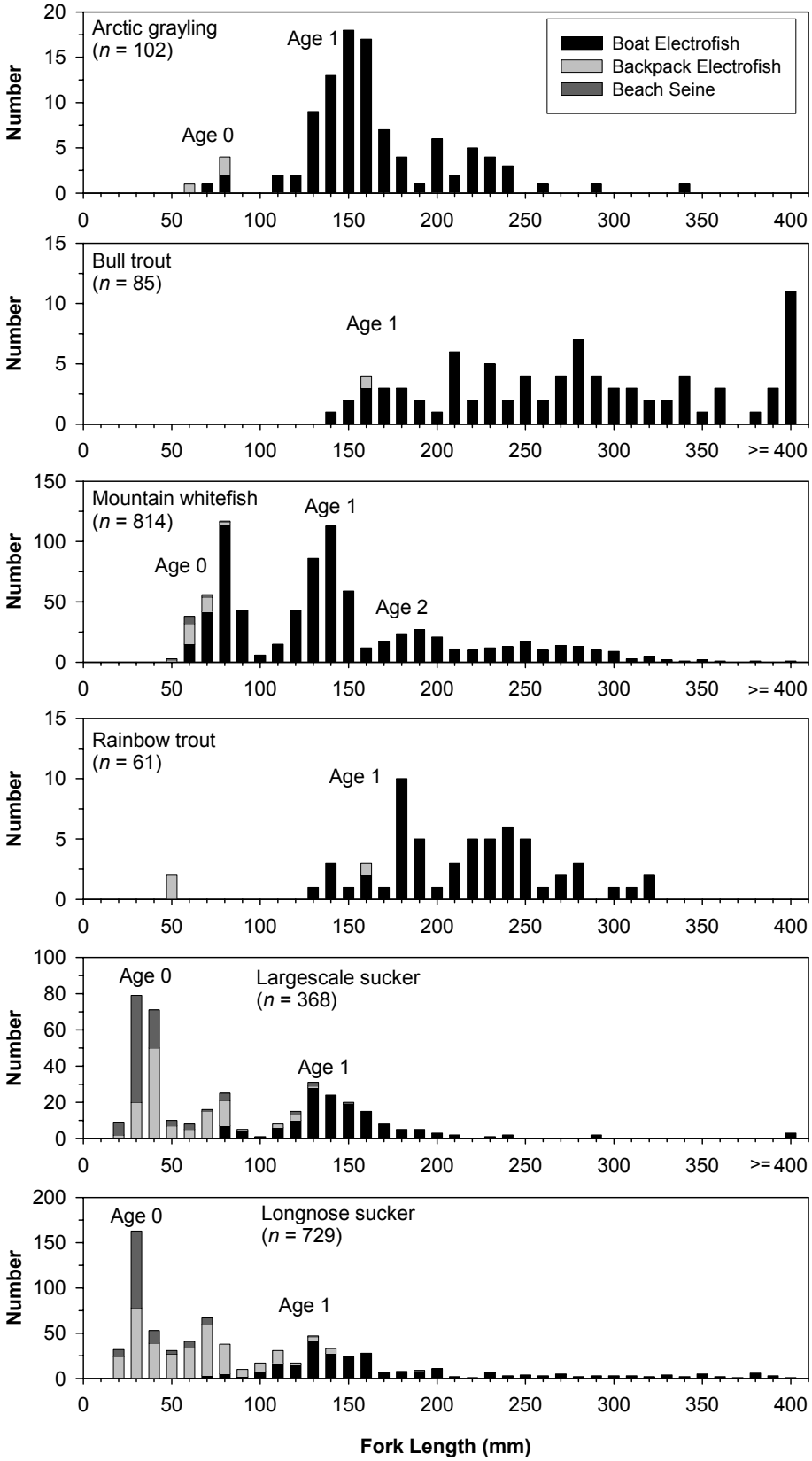

Figure 3.14 Size distribution and age of selected large-fish species sampled on the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

4.0 DISCUSSION

4.1 MOBERLY RIVER

4.1.1 Environmental Characteristics

Water quality parameters measured during the survey were generally similar to results of previous studies (AMEC and LGL 2006, Mainstream 2009a, c, 2010). Water pH indicated neutral to slightly alkaline conditions. Water conductivity increased from upstream to downstream. High conductivity values recorded at some sites suggested input from groundwater sources. Water temperatures were elevated, but point measurements indicated that temperatures decreased from upstream to downstream. Water clarity was high in all reaches during the survey. This differed from the 2009 results, which recorded a decrease in water clarity from upstream to downstream (Mainstream 2010). The reason for the difference likely was related to higher flows in 2009, which caused erosion of unstable channel banks and suspension of fine bed materials.

The Moberly River discharge in 2010 generally followed the historical seasonal pattern. In 2010 a strong freshet was recorded during May and June followed by a rapid decrease to base flow conditions by August. From August to October 2010, including the survey period, discharge was minimal and well below the historical average.

4.1.2 Fish Habitat

Results of the present study were similar to findings of the 2009 survey (Mainstream 2010). In general, the Moberly River study area can be divided into four discrete reaches that exhibit different physical characteristics that influence fish habitat type and availability.

Superimposed on these general characteristics is the ongoing effect of a recent major flood event in June 2007. Field observations in 2008 (Mainstream 2009c) and 2009 (Mainstream 2010) indicated substantial bank erosion and removal of mature woody vegetation from the riparian zone, which has resulted in deposition of large amounts of woody debris into the river channel and shifting of the river channel within the valley floor. Major disturbances by the flood were largely restricted to Reach 1, which has a high gradient. Upstream of this point (Reaches 2, 3, and 4) riparian vegetation was largely intact and most of the channel was stable**.** The effects of the 2007 flood were evident during the present study, and as such, continue to affect fish habitats and the fish community of the Moberly River.

The following provides an updated summary of the Moberly River reach characteristics that was presented in Mainstream (2010). It describes features that are important to the fish community and includes additional information for an expanded study area. In 2009, the sampled area ended at Km 101.0, which represented the upper boundary of Reach 3 (Mainstream 2010). The study area of the present investigation was expanded upstream to encompass the river from Reach 3 to just downstream of the Moberly Lake outlet, which is designated as Reach 4.

Reach 4

Reach 4, the uppermost reach, exhibits a moderate gradient containing frequent riffle/rapid sections interspersed with flats and slow runs. The bed material is dominated by sand and gravels, but riffle/rapids contain an abundance of cobbles and small boulders. The reach also contains numerous small side channels. Many areas sampled within this reach could be characterized as high quality, spawning, rearing, feeding, and overwintering habitats for fluvial species such as Arctic grayling and mountain whitefish.

Reach 3

Reach 3, located between Km 81 to Km 101, is characterized by a well-defined, low gradient, meandering channel dominated by a sand bed. Short higher gradient sections characterized by riffle/runs and rock substrates also are present, but are infrequent. A unique feature of Reach 3 is the presence of numerous protected cutoff side channels containing emergent and submergent vegetation. These areas provide high quality spawning and rearing habitat for northern pike.

Reach 2

The irregular channel in Reach 2, located between Km 43 and Km 81, traverses a valley floor dominated by mature forest. This reach exhibits a higher gradient than Reach 3 and contains extended runs interspersed with short riffle/rapid sections. Gravels and sands are the dominant bed material in the run sections, whereas cobbles and boulders are prominent in the riffle/rapid sections. Fish habitats potentially used by fluvial species such as Arctic grayling and mountain whitefish are widespread and abundant. Many areas sampled within this reach could be characterized as high quality, spawning, rearing, feeding, and overwintering habitats.

Reach 1B

Reach 1B represents a distinct transition from a stable singular channel in Reach 2, to a higher gradient, laterally unstable, braided channel located within an incised valley. Unlike Reaches 2, 3, and 4, extensive sections of the Moberly River in Reach 1B are unstable, exhibit large scale bank erosion, and contain

numerous secondary channels. Woody debris accumulations are common in Reach 1B. Bed material also changes to small and medium sized cobble with boulders located in high velocity zones. These features become progressively more pronounced from upstream to downstream. One other feature that occurs in the lower section of Reach 1B, but is not present in Reaches 2, 3, and 4, is active valley wall slumping into the channel. Highly erodable materials of these slumps introduce sands and silts into the river during high flows. The physical characteristics of Reach 1B generated a large amount of habitat complexity and many of the sampled sites are considered good quality habitat for fluvial species.

Reach 1A

Reach 1A is a short section between the Peace River and Km 10, which includes the inundation zone of the proposed Site C Reservoir. Channel characteristics in this reach are identical to Reach 1B. The river channel is unstable, there is large scale bank erosion, woody debris accumulations are common, and valley wall slumps are present. Similar to Reach 1B, the physical characteristics of Reach 1A generate a large amount of habitat complexity and several of the sampled sites were considered good quality habitat.

4.1.3 Fish Community

The results of the present study were consistent with findings by other investigations on the Moberly River, particularly the 2009 work of Mainstream (2010) that included the same study area and used similar sampling methods undertaken at the same time of year.

In total, 16 fish species were recorded during the present study. Work by ARL (1991a, b) in 1989 and 1990 recorded 14 species in the Moberly River and work by Mainstream (2010) in 2009 recorded 16 species. Overall fewer fish were recorded in this study compared to the 2009 study, which occurred in the same study area. The difference likely was caused by the difference in sampling methods employed (i.e., a small boat electrofisher was used in 2009 but not during the present study). With the exception of mountain whitefish and largescale sucker, the species composition between the present study and previous surveys was generally similar.

Substantially fewer mountain whitefish were recorded in this study compared to 2009. The difference may have been caused by the difference in sampling methods employed (i.e., the small boat electrofisher used in 2009 but not during the present study which was more efficient at capturing mountain whitefish), outmigration of fish from the study area due to high water temperatures and low water levels, or poor recruitment into the population.

Not all species were recorded during each study (Table 4.1). Incidental species that were not expected to be recorded during all studies due to low fish numbers included bull trout, rainbow trout, northern redbelly dace, peamouth, and trout-perch.

Two other species, lake whitefish and largescale sucker, were more abundant in the Moberly River and were expected in the catch of the present study. Lake whitefish typically occur in the upper portion of the study area (Reach 3), while largescale suckers are numerous and widespread in the lower portion of the study area (Reaches 1A and 1B). The absence of lake whitefish, likely was due to differences in sampling methods (i.e., a small boat electrofisher was used in 2009 but not during the present study). The absence of largescale sucker from the present study is difficult to explain. This species may have out-migrated from the study area due to high water temperatures and low water or the species may have been misidentified as longnose sucker or white sucker.

Table 4.1 Comparison of fish species recorded by the present and previous studies from the Moberly River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Common Name	Scientific Name	1989-90[a]	2009[b]	2010[c]
Sportfish	Arctic grayling	*Thymallus arcticus*	X	X	X
	Bull trout	*Salvelinus confluentus*	X	X	
	Burbot	*Lota lota*	X	X	X
	Lake whitefish	*Coregonus clupeaformis*	X	X	
	Mountain whitefish	*Prosopium williamsoni*	X	X	X
	Northern pike	*Esox lucius*	X	X	X
	Rainbow trout	*Oncorhynchus mykiss*			X
Sucker	Largescale sucker	*Catostomus macrocheilus*	X	X	
	Longnose sucker	*Catostomus catostomus*	X	X	X
	White sucker	*Catostomus commersoni*	X	X	X
Minnow/ Trout-perch	Lake chub	*Couesius plumbeus*	X	X	X
	Longnose dace	*Rhinichthys cataractae*	X	X	X
	Northern pikeminnow	*Ptychocheilus oregonensis*	X	X	X
	Northern redbelly dace	*Phoxinus eos*			X
	Peamouth	*Mylocheilus caurinus*	X		X
	Redside shiner	*Richardsonius balteatus*	X	X	X
	Trout-perch	*Percopsis omiscomaycus*		X	X
Sculpin	Prickly sculpin	*Cottus asper*	-[d]	X	X
	Slimy sculpin	*Cottus cognatus*	-	X	X
Total Number of Species			14	16	16

[a] ARL (1990, 1991).
[b] Mainstream (2010).
[c] present study.
[d] Not identified to species.

Species distribution generally was more restricted in the present study compared to 2009 (Mainstream 2010). The difference likely was caused by the difference in sampling methods employed

(i.e., a small boat electrofisher was used in 2009 but not during the present study). Results from 2009 indicated that capture efficiency of small fish boat electrofisher was higher than for backpack electrofisher and beach seine for species such as Arctic grayling, mountain whitefish, and burbot. The absence of the small fish boat electrofisher during the present study resulted in the capture of fewer fish, which likely influenced the species distribution results.

Despite the differences between 2009 and the present study, the distribution pattern and relative abundance of species were consistent. With the exception of mountain whitefish, species that were most widespread in 2009 also were most widespread in 2010, and generally the most abundant species in each group in 2009 were also the most abundant in 2010. As such, there was no indication of a large change in fish community structure between 2009 and 2010.

Young sportfish species (Age 0 and/or Age 1) recorded during the present study included Arctic grayling, mountain whitefish, burbot, and northern pike. The distribution of young fish of these species was generally similar to the distribution documented in 2009 (Mainstream 2010). This provides additional evidence that spawning and early rearing by sportfish occurs in the Moberly River. Larger (> 200 mm length), presumably older fish were only recorded for burbot, northern pike, and longnose sucker. It should be noted that the survey methods on the Moberly River (beach seine and backpack electrofisher) targeted small fish (≤ 200 mm in length); therefore, adult fish were under represented in the sample.

4.2 HALFWAY RIVER

4.2.1 Environmental Characteristics

General Water Quality

Water quality parameters measured during the survey were similar to results of other recent studies (AMEC and LGL 2006, Mainstream 2009a, c, 2010). Water pH was similar among sampled sections within the study area and indicated neutral to slightly alkaline conditions. Water conductivity was similar among sampled sections, but water clarity did decline slightly from upstream to downstream. The decline likely was a result of sediment inputs from tributaries (i.e., Cameron River) and highly erodable bank materials from active valley wall slumps located in the lower sections. Water temperatures were moderate, but point measurements indicated a slight increase from upstream to downstream.

The Halfway River discharge in 2010 generally followed the historical seasonal pattern. In 2010 a strong freshet was recorded during May and June followed by a rapid decrease to base flow conditions by

August. From August to October 2010, including the survey period, discharge was minimal and well below the historical average.

4.2.2 Fish Habitat

The following provides an updated summary of the Halfway River reach characteristics that was presented in Mainstream (2010). It describes features that are important to the fish community and includes additional information for an expanded study area. In 2009, the sampled area ended at Km 110.0 (Mainstream 2010). The study area of the present investigation was expanded upstream in order to encompass the river to the confluence of the Chowade River at Km 128.0. This provided more information for Reach 4 of the Halfway River.

Reach 4

Reach 4 (Km 92 to Km 128) includes the section of river between the confluence of the Chowade River and the confluence of the Graham River. Reach 4 represents a smaller watercourse than other reaches of the Halfway River because it is located upstream of the Graham River, which contributes a large amount of water to the system. Portions of the channel in Reach 4 are laterally unstable and the bed material is dominated by clean gravels and cobbles. This reach also contains several small named and unnamed tributaries. The dominant habitats in this reach are long runs interspersed with riffles, although there are numerous side channels that provide protected areas for rearing fish. This reach has the potential to provide high quality habitats for species such as Arctic grayling, bull trout, mountain whitefish, and rainbow trout and this was reflected by the fish community structure documented by the survey.

Reach 3

Reach 3 is located from Km 43 to Km 92, between the Graham River confluence and the Cameron River confluence. With the exception of being a larger system (due to inputs from the Graham River) and the presence of a short section dominated by bedrock sills immediately downstream of the Graham River, Reach 3 physical characteristics and fish habitats are similar to those recorded in Reach 4. This reach contained an abundance of rearing, feeding, and overwintering habitats for fish species found in the Halfway River.

Reach 2

The upstream boundary of Reach 3 is the confluence of the Cameron River, which represents a major reach break. The Halfway River in this reach (Km 12 to Km 43) exhibits characteristics of a system affected by fine sediments. This reach receives sediment laden water from the Cameron River. It is

largely confined by high valley walls and the river frequently abuts the valley walls resulting in bank erosion causing introduction of fine sediments. There also is a large active slump at Km 14 of this reach. Unlike upstream reaches, no permanent tributaries enter the Halfway River and side channels are much less abundant. The bed material in Reach 2 consists of cobbles, gravels, interspersed with sands and silts. The material typically is highly embedded in low velocity areas.

Reach 1

Reach 1 (Km 0 to Km 12) represents the potential area of inundation by the proposed Site C Reservoir. The physical characteristics of Reach 1 are similar to Reach 2; however, this section of river contains extended runs interspersed by short riffle/rapid sections containing boulders. Reach 1 contains similar habitats as Reach 2, but the effect of sedimentation on rock substrates is greater.

4.2.3 Fish Community

The results of the present study were consistent with findings by other investigations of the mainstem Halfway River in 2006 (Mainstream 2009a,) and 2008 (Mainstream 2009c). The present study recorded 20 fish species, which was higher than the maximum of 18 species recorded by previous studies (Table 4.2). The species composition between surveys was generally similar; however there were a few differences. The presence of kokanee, walleye, and northern redbelly dace was the first known recordings of these species in the Halfway River. White sucker were only recorded in 2009, peamouth were only recorded in 2008, and spottail shiner were only recorded in 2009. None of these species was abundant and with the exception of northern redbelly dace, most were recorded in the most downstream reaches. Northern redbelly dace were recorded at one site in Reach 4.

Almost twice as many fish were recorded in 2010 (8,481) compared to 2009 (4,401), however, abundance of the majority of the species was similar in both years. This difference can be attributed to a few species including largescale sucker (255 in 2009, 707 in 2010), longnose sucker (820 in 2009, 2,436 in 2010), lake chub (136 in 2009, 419 in 2010) and longnose dace (197 in 2009 and 1,514 in 2010) (Mainstream 2010). These differences may be attributed to slight differences in sampling locations and/or sampling effort, environmental conditions at the time of sampling and/or the low discharge levels, or annual differences in recruitment.

Table 4.2 Comparison of fish species recorded by the present and previous studies from the Halfway River, Site C Moberly River and Halfway River Fish Inventory 2010.

Group	Common Name	Scientific Name	2006[a]	2008[b]	2009[c]	2010[d]
Sportfish	Arctic grayling	*Thymallus arcticus*	X	X	X	X
	Bull trout	*Salvelinus confluentus*	X	X	X	X
	Burbot	*Lota lota*	X	X	X	X
	Kokanee	*Oncorhynchus nerka*				X
	Mountain whitefish	*Prosopium williamsoni*	X	X	X	X
	Northern pike	*Esox lucius*	X	X		X
	Rainbow trout	*Oncorhynchus mykiss*	X	X	X	X
	Walleye	*Sander vitreus*				X
Sucker	Largescale sucker	*Catostomus macrocheilus*	X	X	X	X
	Longnose sucker	*Catostomus catostomus*	X	X	X	X
	White sucker	*Catostomus commersoni*			X	
Minnow/ Trout-perch	Flathead chub	*Platygobio gracilis*	X	X	X	X
	Lake chub	*Couesius plumbeus*	X	X	X	X
	Longnose dace	*Rhinichthys cataractae*	X	X	X	X
	Northern pikeminnow	*Ptychocheilus oregonensis*	X	X	X	X
	Northern redbelly dace	*Phoxinus eos*				X
	Peamouth	*Mylocheilus caurinus*		X		
	Redside shiner	*Richardsonius balteatus*	X	X	X	X
	Spottail shiner	*Notropis hudsonius*	X		X	
	Trout-perch	*Percopsis omiscomaycus*		X	X	X
Sculpin	Prickly sculpin	*Cottus asper*	X	X	X	X
	Slimy sculpin	*Cottus cognatus*	X	X	X	X
	Spoonhead sculpin	*Cottus ricei*		X		X
Total Number of Species			16	18	17	20

[a] Mainstream (2009a).
[b] Mainstream (2009c).
[c] Mainstream (2010).
[d] present study.

The species distribution and catch rates were similar between studies. The fish community in the upper portion of the study area above the Cameron River (Reaches 3 and 4) was dominated by coldwater species. Catch rates of coldwater sportfish, which included Arctic grayling, bull trout, mountain whitefish, rainbow trout, and slimy sculpin were highest in Reach 4. Longnose suckers, longnose dace, and slimy sculpin also were abundant in the upper portion of the study area. Rainbow trout catch rates exhibited a truncated distribution; catch rates were highest in the upper portion of the study area, but catch rates were very low in the lower portion. This may indicate that there is a resident population in the upper Halfway River.

The fish community in the lower portion of the study area (Reach 2) represented a transition from a clear, coldwater fish community to a turbid, coolwater fish community. Arctic grayling, bull trout, mountain whitefish, and rainbow trout catch rates were reduced compared to upstream reaches. Catch rates of species such as largescale sucker, longnose sucker, and redside shiner increased. Species that

were not recorded in upstream reaches (kokanee, northern pike, northern pikeminnow, trout-perch, and prickly sculpin), were present in the lower portion of the study area, where some (e.g., redside shiner and northern pikeminnow) were abundant at some sites.

Information gathered during 2009 (Mainstream 2010) and during the present study, two investigations that included the same study area, sampling sites, and used similar sampling methods undertaken at the same time of year, were consistent. Species that were most widespread in 2009 also were most widespread in 2010, and the most abundant species in 2009 were also the most abundant in 2010, however, largescale sucker, longnose sucker, lake chub and longnose dace were much more abundant in 2010 compared to 2009.

Recorded young sportfish species (Age 0 and Age 1 fish) included Arctic grayling, bull trout, rainbow trout, and mountain whitefish. Young fish of these species were most abundant in Reach 4; however Age 0 fish of most sportfish species (all except mountain whitefish) were rare or were not recorded. These results are similar to findings in 2009 (Mainstrean 2010) and suggest that Arctic grayling, bull trout, and rainbow trout spawn and rear in tributaries to the Halfway River, rather than in the mainstem river.

Young mountain whitefish (Age 0 and Age 1 fish) were abundant and widespread throughout the study area, which is similar to the 2009 results (Mainstream 2010); there were spatial differences in the abundance of Age 0 fish. In 2009 the number of Age 0 mountain whitefish per site was higher in the upstream reaches compared to the downstream reaches (Mainstream 2010), whereas in 2010 the number of Age 0 mountain whitefish per site was higher in the downstream reaches compared to the upstream reaches. The difference may reflect differences in water temperature or flow during the rearing period. The spatial pattern of Age 0 whitefish numbers recorded in 2010 was similar to a trend recorded in 2006 (Mainstream 2009a). The Halfway River discharge was atypically low during both study years.

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5.0 CONCLUSIONS

The present study described habitat characteristics and fish communities of two major tributaries to the Peace River during summer – the Moberly River and Halfway River. The investigation documented environmental conditions (general water quality, water temperature, and discharge), measured physical characteristics of sampled habitats, and described the fish community (composition, distribution, and catch rate) with an emphasis on small fish (≤ 200 mm fork length). The main goal of the study was to improve our understanding of the communities in each river.

In general, the results of the present study were similar to findings by previous investigations, particularly work completed in 2009, which encompassed the same study area and occurred during the same period. The major features and habitat characteristics documented during the present study were similar to 2009 results. The upstream expansion of the study area in each system improved our knowledge of fish habitat and the fish community.

5.1 MOBERLY RIVER

The Moberly River is a relatively small watercourse in terms of discharge, is subjected to elevated water temperatures during summer, receives its source water from Moberly Lake, and has no permanent tributaries. The Moberly River study area consists of two major regions that exhibit different physical characteristics. The upper Moberly River is a low to moderate gradient, meandering channel that traverses mature forest. Fish habitats are dominated by runs interspersed with short riffle/rapid sections. These fish habitats provide spawning, rearing, feeding, and overwintering areas for fish and contain an abundance of high quality rearing areas. The lower Moberly River is primarily a higher gradient, largely unstable braided channel that is adjusting to a recent flood event that caused extensive bank erosion and damage to the riparian zone. Several active valley wall slumps that occur in this region have the potential to introduce sediments into the system. Fish habitats are dominated by high velocity runs and riffles. Rock substrates are embedded with fines in low velocity areas.

The Moberly River supports a diverse fish community that includes sportfish, suckers, minnows, and sculpins. Young sportfish recorded during the study included Arctic grayling, burbot, mountain whitefish, and northern pike.

Notable findings of the study were as follows:

1. Longnose sucker and longnose dace were the numerically dominant species in the catch.
2. Other abundant nonsportfish included redside shiner, lake chub, and slimy sculpin.
3. Young (i.e., Age 0 and/or 1) mountain whitefish and Arctic grayling were the most numerous sportfish.
4. The lower reaches supported the highest numbers of Age 0 Arctic grayling and mountain whitefish, which suggested that this portion of the study area was important for spawning and rearing by these species.
5. The study area is not used by bull trout and rainbow trout for spawning and early rearing.
6. Adult fish of several sportfish and sucker species were recorded suggesting that the study area supports resident large-fish populations.

5.2 HALFWAY RIVER

The Halfway River is a large system in terms of discharge and there are several tributaries that enter the river in the upstream portion of the study area.

In general, the Halfway River exhibits a constant gradient, but the physical characteristics change from upstream to downstream. The Halfway River study area consists of two major regions with a transition in channel geomorphology and species composition located at the confluence of the Cameron River. The Halfway River upstream of the Cameron River is a relatively unstable channel containing clean rock substrates that supports a cold, clear-water fish community. The Halfway River downstream of the Cameron River is largely confined by steep valley walls and is influenced by sediment inputs from the Cameron River, bank erosion, and active valley wall slumping. This section supports a fish community in transition to cool, turbid-water fish populations.

The Halfway River supports a diverse fish community that includes sportfish, suckers, minnows, and sculpins. Young sportfish recorded during the study included Arctic grayling, bull trout, mountain whitefish, and rainbow trout. Notable findings of the Halfway River study were as follows:

1. Longnose suckers were the most numerous fish in the study area followed by mountain whitefish.
2. Young (i.e., Age 0 and/or 1) Arctic grayling, bull trout, and rainbow trout were most numerous and widespread upstream of the Cameron River confluence.
3. Age 0 bull trout, rainbow trout, and Arctic grayling were scarce or absent indicating that the Halfway River is not a major spawning and early rearing area for these species; Halfway River tributaries likely provide these habitats.
4. Age 0 mountain whitefish were widespread and abundant suggesting that the mainstem river provides spawning and early rearing habitats for this species.
5. Sucker and minnow species were numerically important downstream of the Cameron River confluence.

6. Adult fish of several sportfish and sucker species were recorded suggesting that the study area supports resident large-(>200 mm) fish populations.

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PLATES

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Plate 1 Riffle with cobble/gravel, R4 Moberly River.

Plate 2 Backwater, R4 Moberly River.

Plate 3 Run with sand substrate, R3 Moberly River.

Plate 4 Oxbow with woody debris, R3 Moberly River.

Plate 5 Run and riffle, R2 Moberly River.

Plate 6 Riffle with cobble/boulders, R2 Moberly River**.**

Plate 7 Major reach break, R1B Moberly River.

Plate 10 Typical habitat, R1A Moberly River.

Plate 8 Logjam and sidechannel, R1B Moberly River.

Plate 11 Run with cobble/gravel, R4 Halfway River.

Plate 9 Typical habitat, R1A Moberly River.

Plate 12 Side channel, R4 Halfway River **.**

Plate 13 Shallow, wide channel, R3 Halfway River.

Plate 16 Shallow, wide channel, R2 Halfway River.

Plate 14 Backwater, R4 Halfway River.

Plate 17 Typical habitat, R2 Halfway River.

Plate 15 High valley walls, R2 Halfway River.

Plate 18 Typical boulder substrate, R2 Halfway River **.**

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APPENDICES

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APPENDIX A
Site Information

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Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
HALFWAY RIVER								
01								
	BACKPACK ELECTROFISH	HEF0101	536578	6270391				
	BACKPACK ELECTROFISH	HEF0102	536586	6270431				
	BACKPACK ELECTROFISH	HEF0103	537230	6269451				
	BACKPACK ELECTROFISH	HEF0104	538335	6268474				
	BACKPACK ELECTROFISH	HEF0105	538986	6267849				
	BACKPACK ELECTROFISH	HEF1101	527439	6284019				
	BACKPACK ELECTROFISH	HEF1102	529090	6283314				
	BACKPACK ELECTROFISH	HEF1201	531994	6279904				
	BACKPACK ELECTROFISH	HEF1202	533276	6278324				
	BACKPACK ELECTROFISH	HEF1203	534228	6275641				
	BACKPACK ELECTROFISH	HEF1204	535567	6272512				
	BACKPACK ELECTROFISH	HEF1301	537243	6269752				
	BACKPACK ELECTROFISH	HEF1302	537501	6269155				
	BACKPACK ELECTROFISH	HEF1303	538926	6267960				
	BEACH SEINE	HBS0101	537123	6270206				
	BEACH SEINE	HBS0102	538903	6267978				
	BEACH SEINE	HBS0103	540870	6266098				
	BEACH SEINE	HBS1101	530003	6282006				
	BEACH SEINE	HBS1201	532526	6279717				
	BEACH SEINE	HBS1202	534600	6274028				
	BEACH SEINE	HBS1203	535052	6273216				
	SMALL FISH BOAT ELECTROFISH	HSF0101	537211	6269851	536653	6270280	537211	6269851
	SMALL FISH BOAT ELECTROFISH	HSF0102	537742	6269052	537251	6269790	537742	6269052
	SMALL FISH BOAT ELECTROFISH	HSF0103	538291	6268412	537795	6268952	538291	6268412
	SMALL FISH BOAT ELECTROFISH	HSF0104	538961	6267982	538549	6268608	538961	6267982
	SMALL FISH BOAT ELECTROFISH	HSF0105	539485	6266898	539077	6267818	539485	6266898
	SMALL FISH BOAT ELECTROFISH	HSF0106	539947	6266476	539503	6266785	539947	6266476
	SMALL FISH BOAT ELECTROFISH	HSF0107	540759	6265884	540423	6266110	540759	6265884
	SMALL FISH BOAT ELECTROFISH	HSF1101	527746	6283657	527451	6284069	527746	6283657
	SMALL FISH BOAT ELECTROFISH	HSF1102	529094	6283298	528615	6283150	529094	6283298
	SMALL FISH BOAT ELECTROFISH	HSF1103	530231	6281579	530033	6282039	530231	6281579
	SMALL FISH BOAT ELECTROFISH	HSF1104	531791	6280216	531280	6280275	531791	6280216
	SMALL FISH BOAT ELECTROFISH	HSF1201	533021	6278772	532713	6279144	533021	6278772
	SMALL FISH BOAT ELECTROFISH	HSF1202	533841	6278010	533373	6278197	533841	6278010
	SMALL FISH BOAT ELECTROFISH	HSF1203	533980	6275853	534145	6276326	533980	6275853
	SMALL FISH BOAT ELECTROFISH	HSF1204	534823	6274669	534705	6275173	534823	6274669
	SMALL FISH BOAT ELECTROFISH	HSF1205	534961	6273497	534626	6273872	534961	6273497
	SMALL FISH BOAT ELECTROFISH	HSF1206	535717	6272311	535294	6272578	535717	6272311
	SMALL FISH BOAT ELECTROFISH	HSF1207	536052	6271136	535878	6271608	536052	6271136
02								
	BACKPACK ELECTROFISH	HEF0201	543082	6264530				
	BACKPACK ELECTROFISH	HEF0202	543706	6264439				
	BACKPACK ELECTROFISH	HEF0203	544510	6263809				
	BACKPACK ELECTROFISH	HEF0204	544807	6263300				
	BACKPACK ELECTROFISH	HEF0205	546759	6262964				
	BACKPACK ELECTROFISH	HEF1304	541652	6264863				
	BACKPACK ELECTROFISH	HEF1305	543655	6264459				
	BEACH SEINE	HBS0201	544923	6263160				
	SMALL FISH BOAT ELECTROFISH	HSF0201	542694	6264626	541797	6264493	542694	6264626
	SMALL FISH BOAT ELECTROFISH	HSF0202	543856	6264307	543081	6264593	543856	6264307
	SMALL FISH BOAT ELECTROFISH	HSF0203	545104	6263095	544464	6263772	545104	6263095
	SMALL FISH BOAT ELECTROFISH	HSF0204	546138	6262944	545245	6263110	546138	6262944
	SMALL FISH BOAT ELECTROFISH	HSF0205	547048	6262685	546262	6263011	547048	6262685

Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
03								
	BACKPACK ELECTROFISH	HEF0301	549236	6263406				
	BACKPACK ELECTROFISH	HEF0302	551375	6263764				
	BACKPACK ELECTROFISH	HEF0303	553188	6262736				
	BACKPACK ELECTROFISH	HEF0304	553474	6262930				
	BACKPACK ELECTROFISH	HEF0305	556249	6261987				
	BACKPACK ELECTROFISH	HEF0306	556567	6261821				
	BACKPACK ELECTROFISH	HEF1402	551507	6263519				
	BACKPACK ELECTROFISH	HEF1403	553220	6262841				
	BACKPACK ELECTROFISH	HEF1404	554642	6262942				
	BACKPACK ELECTROFISH	HEF1405	556434	6261948				
	BEACH SEINE	HBS1401	548865	6263515				
	SMALL FISH BOAT ELECTROFISH	HSF0206	548135	6262658	547307	6262586	548135	6262658
	SMALL FISH BOAT ELECTROFISH	HSF0301	550242	6263341	549290	6263474	550242	6263341
	SMALL FISH BOAT ELECTROFISH	HSF0302	551249	6263719	550440	6263535	551249	6263719
	SMALL FISH BOAT ELECTROFISH	HSF0303	552248	6263101	551465	6263604	552248	6263101
	SMALL FISH BOAT ELECTROFISH	HSF0304	553365	6262828	552413	6263050	553365	6262828
	SMALL FISH BOAT ELECTROFISH	HSF0305	554662	6262938	553682	6262925	554662	6262938
	SMALL FISH BOAT ELECTROFISH	HSF0306	556804	6261915	555960	6262192	556804	6261915
04								
	BACKPACK ELECTROFISH	HEF0401	557687	6259766				
	BACKPACK ELECTROFISH	HEF0402	558627	6260106				
	BACKPACK ELECTROFISH	HEF0403	561900	6261932				
	BACKPACK ELECTROFISH	HEF0404	563272	6261789				
	BACKPACK ELECTROFISH	HEF1501	560064	6260605				
	BACKPACK ELECTROFISH	HEF1502	561365	6261822				
	BACKPACK ELECTROFISH	HEF1503	563160	6261803				
	BEACH SEINE	HBS0401	561046	6261727				
	BEACH SEINE	HBS0402	559876	6260401				
	BEACH SEINE	HBS1501	560330	6261175				
	SMALL FISH BOAT ELECTROFISH	HSF0401	557359	6260332	557079	6261222	557359	6260332
	SMALL FISH BOAT ELECTROFISH	HSF0402	558258	6259894	557490	6260122	558258	6259894
	SMALL FISH BOAT ELECTROFISH	HSF0403	559464	6260444	558661	6260169	559464	6260444
	SMALL FISH BOAT ELECTROFISH	HSF0404	561016	6261633	560302	6261320	561016	6261633
	SMALL FISH BOAT ELECTROFISH	HSF0405	562080	6262052	561120	6261729	562080	6262052
	SMALL FISH BOAT ELECTROFISH	HSF0406	563124	6261862	562252	6262017	563124	6261862
05								
	BACKPACK ELECTROFISH	HEF0501	564873	6261899				
	BACKPACK ELECTROFISH	HEF0502	564941	6261915				
	BACKPACK ELECTROFISH	HEF0503	565950	6261228				
	BACKPACK ELECTROFISH	HEF0504	568184	6258821				
	BACKPACK ELECTROFISH	HEF0505	568387	6259163				
	BACKPACK ELECTROFISH	HEF0506	570792	6258273				
	BACKPACK ELECTROFISH	HEF1504	564465	6261790				
	BACKPACK ELECTROFISH	HEF1505	565124	6261752				
	BACKPACK ELECTROFISH	HEF1506	564986	6261654				
	BACKPACK ELECTROFISH	HEF1507	567390	6258900				
	BACKPACK ELECTROFISH	HEF1508	570576	6258378				
	SMALL FISH BOAT ELECTROFISH	HSF0501	565080	6261802	564068	6261853	565080	6261802
	SMALL FISH BOAT ELECTROFISH	HSF0502	565937	6261213	565051	6261644	565937	6261213
	SMALL FISH BOAT ELECTROFISH	HSF0503	566845	6260696	566136	6261276	566845	6260696
	SMALL FISH BOAT ELECTROFISH	HSF0504	567292	6259636	566928	6260473	567292	6259636
	SMALL FISH BOAT ELECTROFISH	HSF0505	568117	6258743	567616	6259001	568117	6258743
	SMALL FISH BOAT ELECTROFISH	HSF0506	568487	6259312	568268	6258866	568487	6259312

Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
	SMALL FISH BOAT ELECTROFISH	HSF0507	569734	6258300	569297	6259122	569734	6258300
06								
	BACKPACK ELECTROFISH	HEF0601	571773	6257089				
	BACKPACK ELECTROFISH	HEF0602	572054	6255717				
	BACKPACK ELECTROFISH	HEF0603	573694	6254229				
	BACKPACK ELECTROFISH	HEF0604	574201	6253232				
	BACKPACK ELECTROFISH	HEF0605	575881	6252737				
	BACKPACK ELECTROFISH	HEF1601	571518	6257228				
	BEACH SEINE	HBS0601	573106	6254612				
	BEACH SEINE	HBS1601	572472	6255191				
	SMALL FISH BOAT ELECTROFISH	HSF0601	571978	6256458	571639	6257262	571978	6256458
	SMALL FISH BOAT ELECTROFISH	HSF0602	572366	6255398	571858	6256204	572366	6255398
	SMALL FISH BOAT ELECTROFISH	HSF0603	573091	6254729	572386	6255371	573091	6254729
	SMALL FISH BOAT ELECTROFISH	HSF0604	573910	6253975	573153	6254505	573910	6253975
	SMALL FISH BOAT ELECTROFISH	HSF0605	574571	6253088	574052	6253774	574571	6253088
	SMALL FISH BOAT ELECTROFISH	HSF0606	575791	6252797	574830	6253136	575791	6252797
07								
	BACKPACK ELECTROFISH	HEF0701	578005	6250291				
	BACKPACK ELECTROFISH	HEF0702	579395	6249891				
	BACKPACK ELECTROFISH	HEF0703	579895	6250336				
	BACKPACK ELECTROFISH	HEF1602	576304	6251586				
	BACKPACK ELECTROFISH	HEF1701	579188	6249827				
	BEACH SEINE	HBS0701	578229	6249953				
	SMALL FISH BOAT ELECTROFISH	HSF0701	577043	6251439	576258	6251707	577043	6251439
	SMALL FISH BOAT ELECTROFISH	HSF0702	577862	6250627	577309	6251409	577862	6250627
	SMALL FISH BOAT ELECTROFISH	HSF0703	578692	6249927	578080	6250298	578692	6249927
	SMALL FISH BOAT ELECTROFISH	HSF0704	580460	6250098	579618	6250161	580460	6250098
	SMALL FISH BOAT ELECTROFISH	HSF0705	581415	6249990	580597	6250128	581415	6249990
08								
	BACKPACK ELECTROFISH	HEF0704	582915	6249438				
	BACKPACK ELECTROFISH	HEF0801	583495	6246501				
	BACKPACK ELECTROFISH	HEF0802	583600	6246377				
	BACKPACK ELECTROFISH	HEF0803	584720	6245396				
	BACKPACK ELECTROFISH	HEF0804	585336	6243624				
	BACKPACK ELECTROFISH	HEF0805	585118	6241289				
	BACKPACK ELECTROFISH	HEF0806	584701	6240544				
	BACKPACK ELECTROFISH	HEF1702	582855	6249051				
	BACKPACK ELECTROFISH	HEF1703	583979	6246182				
	BACKPACK ELECTROFISH	HEF1704	585046	6241184				
	BEACH SEINE	HBS0702	582022	6250184				
	BEACH SEINE	HBS1701	585259	6242018				
	SMALL FISH BOAT ELECTROFISH	HSF0706	582791	6249751	582003	6249991	582791	6249751
	SMALL FISH BOAT ELECTROFISH	HSF0707	582721	6248832	582831	6249629	582721	6248832
	SMALL FISH BOAT ELECTROFISH	HSF0801	582963	6247399	582661	6248301	582963	6247399
	SMALL FISH BOAT ELECTROFISH	HSF0802	583670	6246281	583080	6247040	583670	6246281
	SMALL FISH BOAT ELECTROFISH	HSF0803	584649	6245827	583907	6246147	584649	6245827
	SMALL FISH BOAT ELECTROFISH	HSF0804	584952	6244351	584722	6245225	584952	6244351
	SMALL FISH BOAT ELECTROFISH	HSF0805	585319	6242576	585354	6243523	585319	6242576
	SMALL FISH BOAT ELECTROFISH	HSF0806	584779	6240832	585310	6241609	584779	6240832
09								
	BACKPACK ELECTROFISH	HEF0901	585790	6239531				
	BACKPACK ELECTROFISH	HEF0902	585804	6237193				
	BACKPACK ELECTROFISH	HEF0903	584804	6236169				

Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
	BACKPACK ELECTROFISH	HEF0904	585636	6235503				
	BACKPACK ELECTROFISH	HEF0905	584538	6234710				
	BACKPACK ELECTROFISH	HEF1901	585571	6239756				
	BACKPACK ELECTROFISH	HEF1902	585705	6237122				
	BEACH SEINE	HBS0901	585854	6238450				
	BEACH SEINE	HBS1901	584903	6236377				
	SMALL FISH BOAT ELECTROFISH	HSF0901	586153	6238822	585759	6239597	586153	6238822
	SMALL FISH BOAT ELECTROFISH	HSF0902	586002	6237864	586124	6238757	586002	6237864
	SMALL FISH BOAT ELECTROFISH	HSF0903	585702	6236861	585988	6237746	585702	6236861
	SMALL FISH BOAT ELECTROFISH	HSF0904	584868	6236240	585604	6236836	584868	6236240
	SMALL FISH BOAT ELECTROFISH	HSF0905	585476	6235646	584726	6236086	585476	6235646
	SMALL FISH BOAT ELECTROFISH	HSF0906	584884	6234903	585674	6235325	584884	6234903
10								
	BACKPACK ELECTROFISH	HEF1001	590515	6234687				
	BACKPACK ELECTROFISH	HEF1002	591870	6233693				
	BACKPACK ELECTROFISH	HEF1003	591950	6234378				
	BACKPACK ELECTROFISH	HEF1004	592829	6234071				
	BACKPACK ELECTROFISH	HEF1005	593397	6232629				
	BACKPACK ELECTROFISH	HEF1006	595936	6231604				
	BACKPACK ELECTROFISH	HEF11001	592350	6234509				
	BACKPACK ELECTROFISH	HEF11002	593056	6233336				
	BEACH SEINE	HBS1902	590335	6234439				
	SMALL FISH BOAT ELECTROFISH	HSF1001	591900	6234321	591456	6233490	591900	6234321
	SMALL FISH BOAT ELECTROFISH	HSF1001	591900	6234321	591456	6233490	591900	6234321
	SMALL FISH BOAT ELECTROFISH	HSF1002	592760	6233981	592053	6234473	592760	6233981
	SMALL FISH BOAT ELECTROFISH	HSF1003	593335	6232817	592938	6233570	593335	6232817
	SMALL FISH BOAT ELECTROFISH	HSF1004	594588	6231895	593762	6232380	594588	6231895
	SMALL FISH BOAT ELECTROFISH	HSF1005	595700	6231448	594791	6231172	595700	6231448
	SMALL FISH BOAT ELECTROFISH	HSF1006	591053	6234790	590349	6234537	591053	6234790
MOBERLY RIVER								
01								
	BACKPACK ELECTROFISH	MEF0101	590743	6198609				
	BACKPACK ELECTROFISH	MEF0102	590598	6199201				
	BACKPACK ELECTROFISH	MEF1101	591285	6199730				
	BEACH SEINE	MBS0101	591238	6199715				
	BEACH SEINE	MBS1101	591410	6199999				
	BEACH SEINE	MBS1102	591298	6200685				
	SMALL FISH BOAT ELECTROFISH	MSF0101	590684	6198637	590538	6198457	590684	6198637
	SMALL FISH BOAT ELECTROFISH	MSF0102	590665	6198849	590684	6198640	590665	6198849
	SMALL FISH BOAT ELECTROFISH	MSF0103	590924	6199372	590671	6198847	590924	6199372
	SMALL FISH BOAT ELECTROFISH	MSF0104	591150	6199716	590920	6199370	591150	6199716
	SMALL FISH BOAT ELECTROFISH	MSF0105	591402	6199992	591162	6199732	591402	6199992
	SMALL FISH BOAT ELECTROFISH	MSF0106	591305	6200296	591414	6199999	591305	6200296
02								
	BACKPACK ELECTROFISH	MEF0201	590694	6201067				
	BACKPACK ELECTROFISH	MEF0202	589704	6200600				
	BACKPACK ELECTROFISH	MEF0203	588610	6202172				
	BACKPACK ELECTROFISH	MEF0204	588126	6202650				
	BACKPACK ELECTROFISH	MEF0205	586698	6202944				
	BEACH SEINE	MBS0201	590508	6201138				
	BEACH SEINE	MBS0202	590192	6200869				
	SMALL FISH BOAT ELECTROFISH	MSF0201	590880	6200991	591353	6200907	590880	6200991
	SMALL FISH BOAT ELECTROFISH	MSF0202	590323	6200936	590700	6200885	590323	6200936
	SMALL FISH BOAT ELECTROFISH	MSF0203	589665	6200601	590279	6200708	589665	6200601

Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

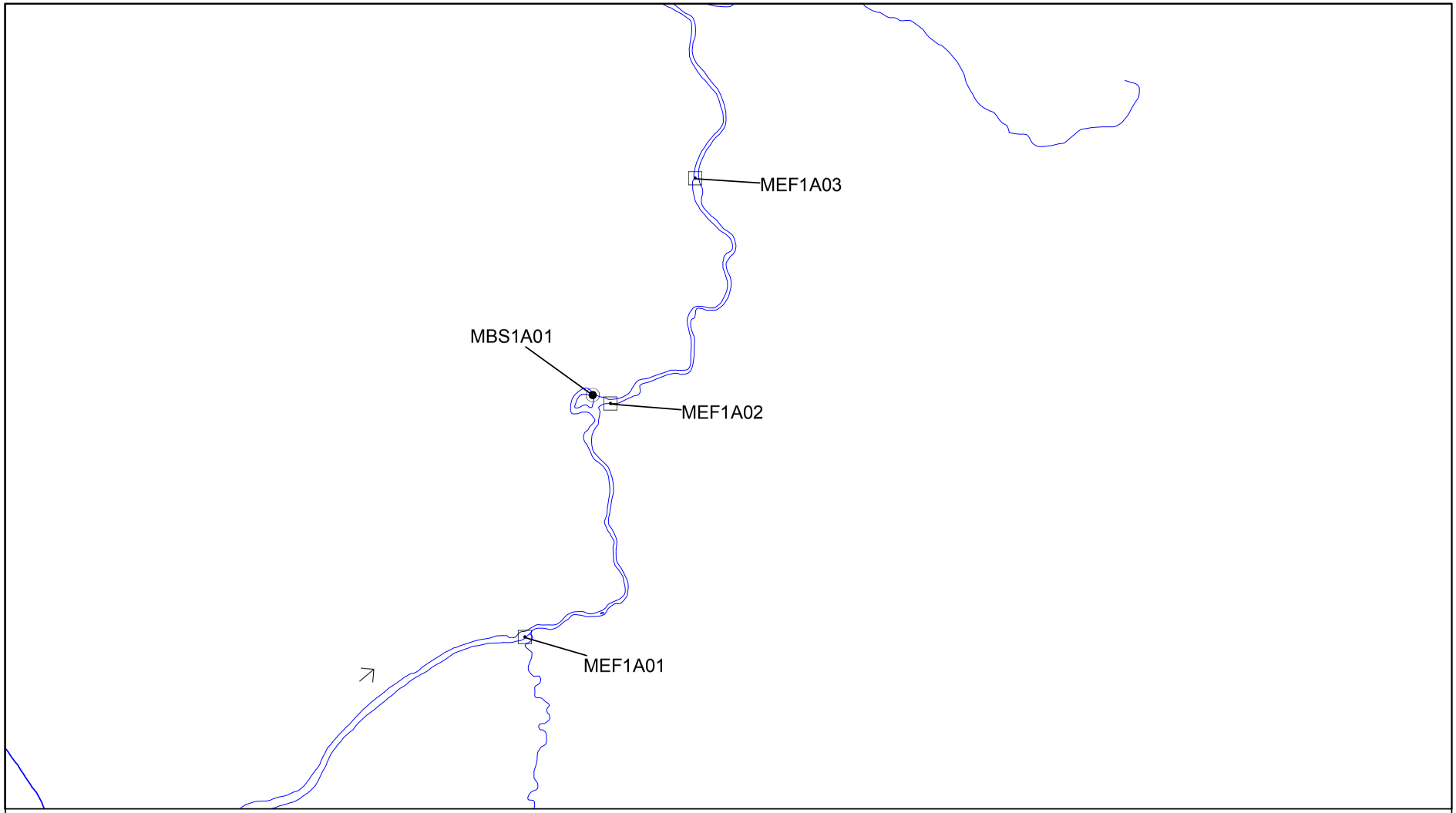
Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
	SMALL FISH BOAT ELECTROFISH	MSF0204	588738	6200731	589261	6200600	588738	6200731
	SMALL FISH BOAT ELECTROFISH	MSF0205	588669	6201557	588295	6200720	588669	6201557
	SMALL FISH BOAT ELECTROFISH	MSF0206	588633	6202415	588607	6201930	588633	6202415
	SMALL FISH BOAT ELECTROFISH	MSF0207	587143	6202590	588057	6202614	587143	6202590
	SMALL FISH BOAT ELECTROFISH	MSF0208	587400	6203911	586690	6204012	587400	6203911
	SMALL FISH BOAT ELECTROFISH	MSF0209	588750	6204589	587867	6204313	588750	6204589
03								
	BACKPACK ELECTROFISH	MEF0301	589584	6205640				
	BACKPACK ELECTROFISH	MEF0302	589611	6206825				
	BACKPACK ELECTROFISH	MEF0303	590109	6206940				
	BACKPACK ELECTROFISH	MEF0304	590683	6211101				
	BACKPACK ELECTROFISH	MEF1301	589725	6206888				
	BACKPACK ELECTROFISH	MEF1302	590065	6206956				
	BEACH SEINE	MBS0301	589443	6205773				
	BEACH SEINE	MBS0302	590105	6207011				
	BEACH SEINE	MBS0303	590824	6209819				
	BEACH SEINE	MBS1301	590608	6208734				
	SMALL FISH BOAT ELECTROFISH	MSF0301	589676	6206066	589581	6205647	589676	6206066
	SMALL FISH BOAT ELECTROFISH	MSF0302	589843	6206603	589613	6206283	589843	6206603
	SMALL FISH BOAT ELECTROFISH	MSF0303	590098	6207083	589623	6206861	590098	6207083
	SMALL FISH BOAT ELECTROFISH	MSF0304	590822	6207681	590425	6207423	590822	6207681
	SMALL FISH BOAT ELECTROFISH	MSF0305	590863	6208645	590553	6208270	590863	6208645
	SMALL FISH BOAT ELECTROFISH	MSF0306	590754	6209477	590767	6208926	590754	6209477
	SMALL FISH BOAT ELECTROFISH	MSF0307	590468	6211064	590570	6210385	590468	6211064
	SMALL FISH BOAT ELECTROFISH	MSF0308	590978	6211234	590719	6211054	590978	6211234
04								
	BACKPACK ELECTROFISH	MEF0401	592316	6211168				
	BACKPACK ELECTROFISH	MEF0402	593198	6211613				
	BACKPACK ELECTROFISH	MEF0403	594379	6212196				
	BACKPACK ELECTROFISH	MEF0404	595236	6212566				
	BACKPACK ELECTROFISH	MEF1401	594671	6211556				
	BACKPACK ELECTROFISH	MEF1402	594715	6211566				
	BEACH SEINE	MBS0401	592421	6211341				
	BEACH SEINE	MBS0402	594392	6211067				
	BEACH SEINE	MBS0403	594407	6212176				
	SMALL FISH BOAT ELECTROFISH	MSF0401	592136	6211172	591396	6211520	592136	6211172
	SMALL FISH BOAT ELECTROFISH	MSF0402	593280	6211566	592454	6211378	593280	6211566
	SMALL FISH BOAT ELECTROFISH	MSF0403	594489	6211191	593747	6211367	594489	6211191
	SMALL FISH BOAT ELECTROFISH	MSF0404	594366	6212117	594050	6211648	594366	6212117
	SMALL FISH BOAT ELECTROFISH	MSF0405	594902	6211759	594678	6211831	594902	6211759
	SMALL FISH BOAT ELECTROFISH	MSF0406	594766	6212871	595116	6212253	594766	6212871
05								
	BACKPACK ELECTROFISH	MEF0501	595946	6214459				
	BACKPACK ELECTROFISH	MEF0502	596737	6215479				
	BACKPACK ELECTROFISH	MEF0503	598769	6215479				
	BACKPACK ELECTROFISH	MEF0504	598629	6215119				
	BACKPACK ELECTROFISH	MEF1501	598856	6215380				
	BACKPACK ELECTROFISH	MEF1502	598461	6214195				
	BACKPACK ELECTROFISH	MEF1503	598473	6214282				
	BEACH SEINE	MBS0501	597771	6215226				
	BEACH SEINE	MBS0502	599019	6214756				
	SMALL FISH BOAT ELECTROFISH	MSF0501	595674	6214335	595511	6213371	595674	6214335
	SMALL FISH BOAT ELECTROFISH	MSF0502	596363	6215403	596100	6214567	596363	6215403
	SMALL FISH BOAT ELECTROFISH	MSF0503	597281	6215218	596598	6215564	597281	6215218

Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
	SMALL FISH BOAT ELECTROFISH	MSF0504	598337	6215557	597538	6215123	598337	6215557
	SMALL FISH BOAT ELECTROFISH	MSF0505	598569	6215071	598487	6215558	598569	6215071
	SMALL FISH BOAT ELECTROFISH	MSF0506	598463	6214148	598497	6214961	598463	6214148
	SMALL FISH BOAT ELECTROFISH	MSF0507	599237	6214872	598776	6214168	599237	6214872
06								
	BACKPACK ELECTROFISH	MEF0601	599552	6215054				
	BACKPACK ELECTROFISH	MEF0602	599653	6216592				
	BACKPACK ELECTROFISH	MEF0603	602812	6217822				
	BACKPACK ELECTROFISH	MEF1601	600416	6216779				
	BACKPACK ELECTROFISH	MEF1602	602675	6217764				
	BEACH SEINE	MBS0601	599311	6216052				
	BEACH SEINE	MBS0602	600320	6216479				
	BEACH SEINE	MBS0603	602885	6217962				
	BEACH SEINE	MBS1601	599323	6216070				
	SMALL FISH BOAT ELECTROFISH	MSF0601	599229	6215712	599573	6215159	599229	6215712
	SMALL FISH BOAT ELECTROFISH	MSF0602	599606	6216605	599188	6215950	599606	6216605
	SMALL FISH BOAT ELECTROFISH	MSF0603	600579	6217004	599959	6216451	600579	6217004
	SMALL FISH BOAT ELECTROFISH	MSF0604	601325	6217323	600595	6217191	601325	6217323
	SMALL FISH BOAT ELECTROFISH	MSF0605	601770	6217576	601326	6217472	601770	6217576
	SMALL FISH BOAT ELECTROFISH	MSF0606	602814	6217692	602143	6217869	602814	6217692
07								
	BACKPACK ELECTROFISH	MEF0701	604329	6218148				
	BACKPACK ELECTROFISH	MEF0702	604871	6218833				
	BACKPACK ELECTROFISH	MEF0703	606214	6219748				
	BACKPACK ELECTROFISH	MEF0704	606516	6221067				
	BACKPACK ELECTROFISH	MEF0705	607943	6222652				
	BACKPACK ELECTROFISH	MEF0706	607397	6223494				
	BACKPACK ELECTROFISH	MEF0707	609683	6224153				
	BACKPACK ELECTROFISH	MEF1701	606020	6219723				
	BACKPACK ELECTROFISH	MEF1702	606151	6220068				
	BACKPACK ELECTROFISH	MEF1703	606165	6220074				
	BACKPACK ELECTROFISH	MEF1704	606574	6220906				
	BACKPACK ELECTROFISH	MEF1705	606989	6221893				
	SMALL FISH BOAT ELECTROFISH	MSF0701	604271	6218497	603949	6218026	604271	6218497
	SMALL FISH BOAT ELECTROFISH	MSF0702	605229	6219132	604731	6218897	605229	6219132
	SMALL FISH BOAT ELECTROFISH	MSF0703	606591	6220573	606172	6219757	606591	6220573
	SMALL FISH BOAT ELECTROFISH	MSF0704	606788	6221626	606528	6221008	606788	6221626
	SMALL FISH BOAT ELECTROFISH	MSF0705	607640	6222831	607108	6222368	607640	6222831
	SMALL FISH BOAT ELECTROFISH	MSF0706	608235	6223462	607393	6223492	608235	6223462
	SMALL FISH BOAT ELECTROFISH	MSF0707	609580	6224536	609306	6224072	609580	6224536
08								
	BACKPACK ELECTROFISH	MEF0801	609822	6224940				
	BACKPACK ELECTROFISH	MEF0802	610454	6225583				
	BACKPACK ELECTROFISH	MEF0803	611619	6226475				
	BACKPACK ELECTROFISH	MEF0804	611538	6226845				
	BACKPACK ELECTROFISH	MEF0805	613746	6227901				
	BACKPACK ELECTROFISH	MEF0806	615259	6228339				
	BACKPACK ELECTROFISH	MEF1801	611493	6226751				
	BACKPACK ELECTROFISH	MEF1802	612480	6227105				
	BACKPACK ELECTROFISH	MEF1803	612634	6227185				
	BACKPACK ELECTROFISH	MEF1804	613415	6227365				
	BACKPACK ELECTROFISH	MEF1805	613294	6227555				
	BACKPACK ELECTROFISH	MEF1806	613298	6227695				
	SMALL FISH BOAT ELECTROFISH	MSF0801	609815	6225314	610199	6224993	609815	6225314

Appendix A Table A1. Sample site information (Nad 83, Zone 10), 2010 Major Tributary Fish Inventory.

Waterbody Section	Method	Site	Easting	Northing	Upper Easting	Upper Northing	Lower Easting	Lower Northing
	SMALL FISH BOAT ELECTROFISH	MSF0802	611607	6226556	610851	6226140	611607	6226556
	SMALL FISH BOAT ELECTROFISH	MSF0803	612595	6227027	611851	6227059	612595	6227027
	SMALL FISH BOAT ELECTROFISH	MSF0804	613071	6227355	612645	6227199	613071	6227355
	SMALL FISH BOAT ELECTROFISH	MSF0805	613958	6227947	613274	6227602	613958	6227947
	SMALL FISH BOAT ELECTROFISH	MSF0806	615794	6228571	615154	6228171	615794	6228571
09								
	BACKPACK ELECTROFISH	MEF0901	616227	6228665				
	BACKPACK ELECTROFISH	MEF0902	616789	6229076				
	BACKPACK ELECTROFISH	MEF0903	617088	6228660				
	BACKPACK ELECTROFISH	MEF0904	621035	6228237				
	BACKPACK ELECTROFISH	MEF0905	621448	6227974				
	SMALL FISH BOAT ELECTROFISH	MSF0901	616465	6228888	615936	6228568	616465	6228888
	SMALL FISH BOAT ELECTROFISH	MSF0902	617440	6228570	616878	6229071	617440	6228570
	SMALL FISH BOAT ELECTROFISH	MSF0903	618753	6228821	617958	6228687	618753	6228821
	SMALL FISH BOAT ELECTROFISH	MSF0904	619995	6228151	619391	6228759	619995	6228151
	SMALL FISH BOAT ELECTROFISH	MSF0905	621482	6227965	620727	6228143	621482	6227965
10								
	BACKPACK ELECTROFISH	MEF1001	626847	6228818				
	BACKPACK ELECTROFISH	MEF1002	628367	6230059				
	BACKPACK ELECTROFISH	MEF1003	622161	6228130				
	BACKPACK ELECTROFISH	MEF1004	624124	6227353				
	BACKPACK ELECTROFISH	MEF1005	626025	6228269				
	BACKPACK ELECTROFISH	MEF11001	626134	6228470				
	BACKPACK ELECTROFISH	MEF11002	626525	6228532				
	BACKPACK ELECTROFISH	MEF11003	626572	6228679				
	BACKPACK ELECTROFISH	MEF11004	626770	6228741				
	BACKPACK ELECTROFISH	MEF11005	626925	6229077				
	BACKPACK ELECTROFISH	MEF1901	622807	6227707				
	BACKPACK ELECTROFISH	MEF1902	623250	6227253				
	BACKPACK ELECTROFISH	MEF1903	623884	6227342				
	BACKPACK ELECTROFISH	MEF1904	624171	6227231				
	BACKPACK ELECTROFISH	MEF1905	624450	6227316				
	BACKPACK ELECTROFISH	MEF1906	624783	6227432				
	SMALL FISH BOAT ELECTROFISH	MSF1001	627026	6229197	626719	6228674	627026	6229197
	SMALL FISH BOAT ELECTROFISH	MSF1002	627794	6229584	627230	6229314	627794	6229584
	SMALL FISH BOAT ELECTROFISH	MSF1003	628436	6230008	627898	6229723	628436	6230008
	SMALL FISH BOAT ELECTROFISH	MSF1004	622846	6227876	622143	6228168	622846	6227876
	SMALL FISH BOAT ELECTROFISH	MSF1005	624487	6227243	623911	6227493	624487	6227243
	SMALL FISH BOAT ELECTROFISH	MSF1006	625110	6227598	624584	6227206	625110	6227598
	SMALL FISH BOAT ELECTROFISH	MSF1007	626447	6228555	625715	6227979	626447	6228555
1A								
	BACKPACK ELECTROFISH	MEF0001	587842	6189293				
	BACKPACK ELECTROFISH	MEF0002	588524	6191153				
	BACKPACK ELECTROFISH	MEF0003	589205	6192949				
	BEACH SEINE	MBS0001	588387	6191222				



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

0 1 2 km

N

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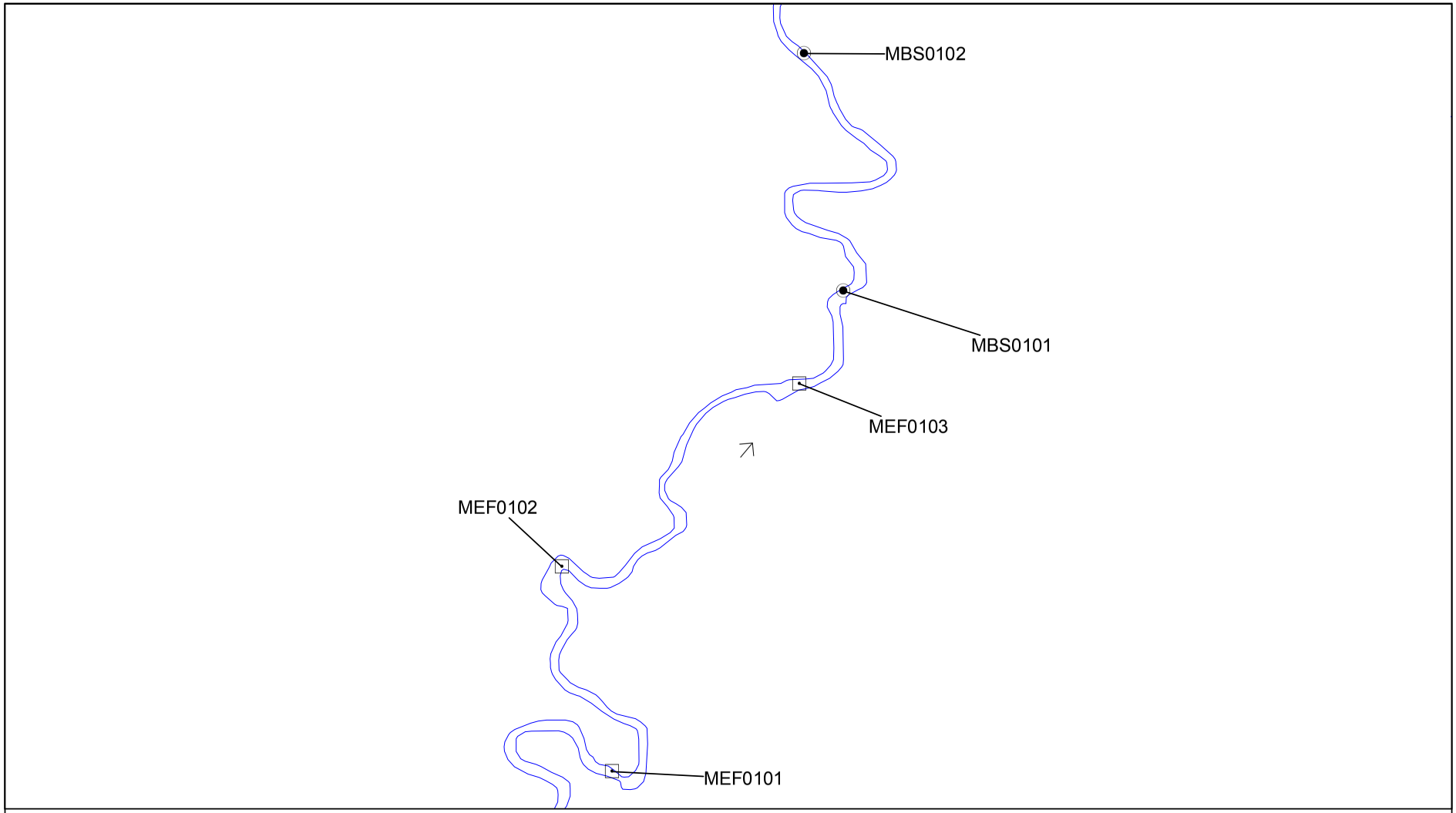
Figure A1

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 1A Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.5 1 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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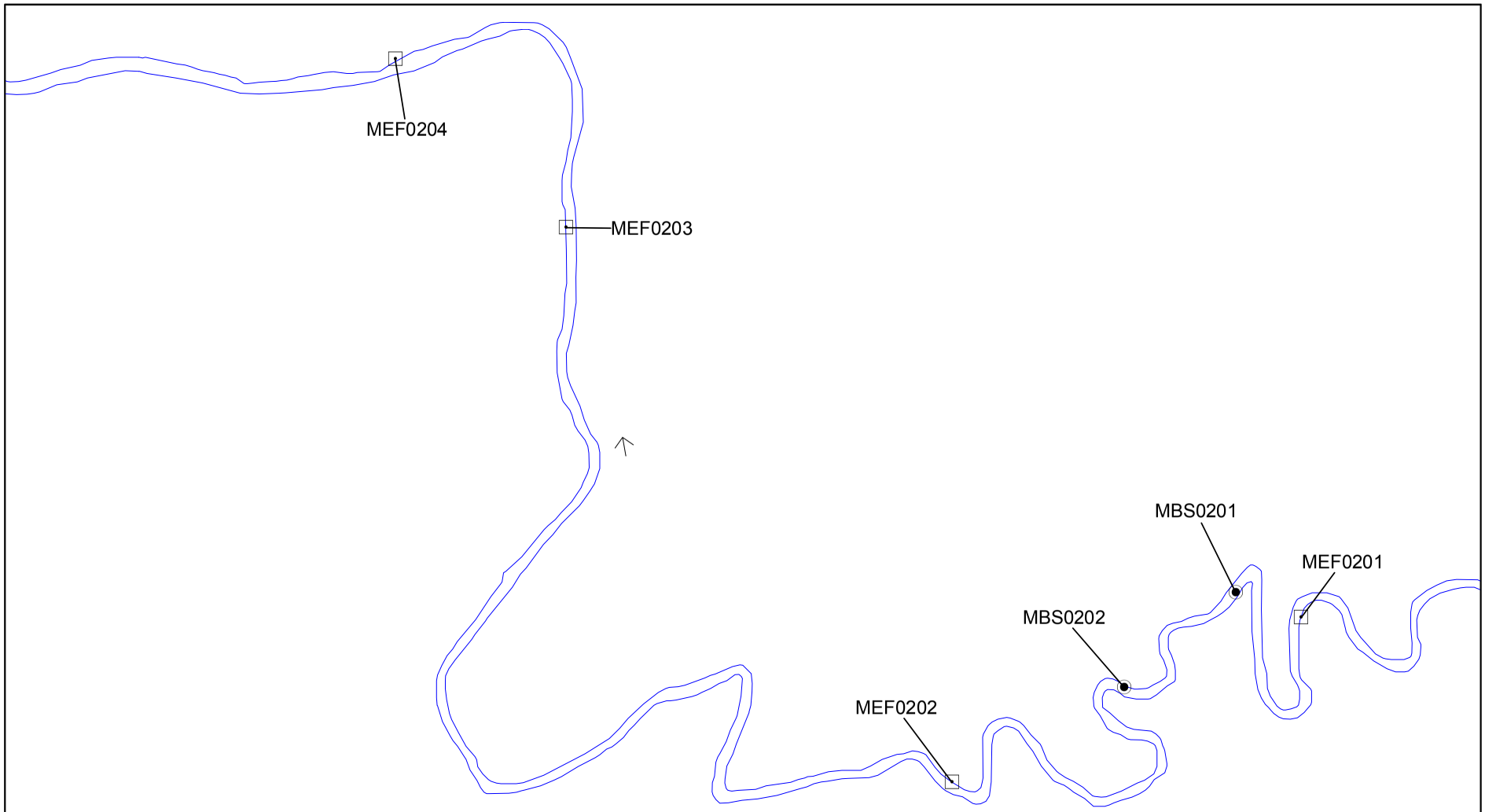
Figure A2

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 1 Fish Sampling Sites,
2010 Major Tributary Fish Inventory



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.5 1 km

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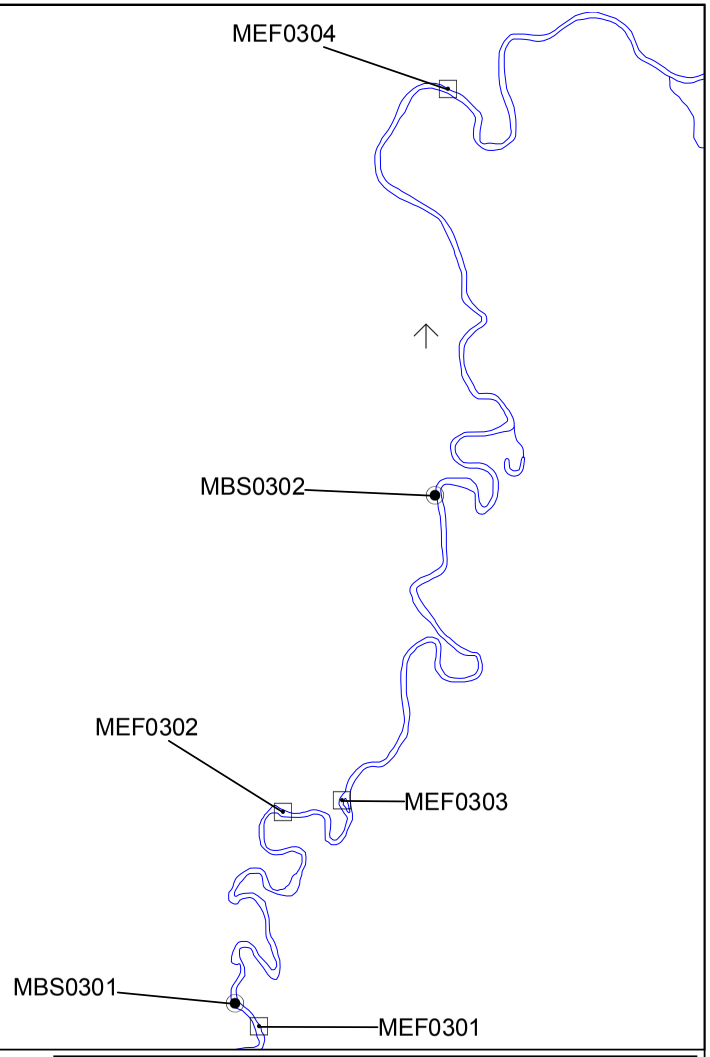
Figure A3

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 2 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 1 2 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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Figure A4

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 3 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

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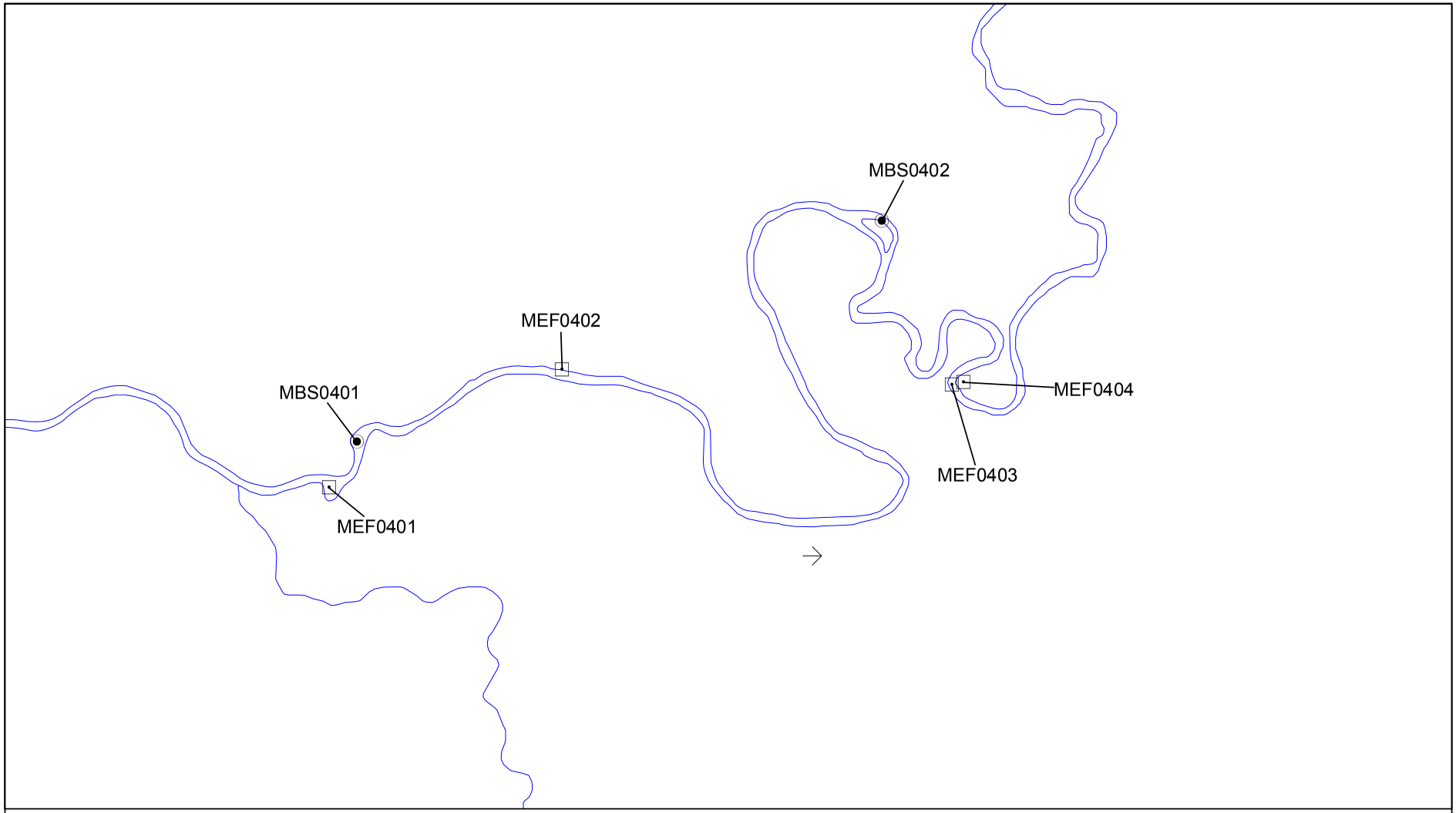

BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.5 1 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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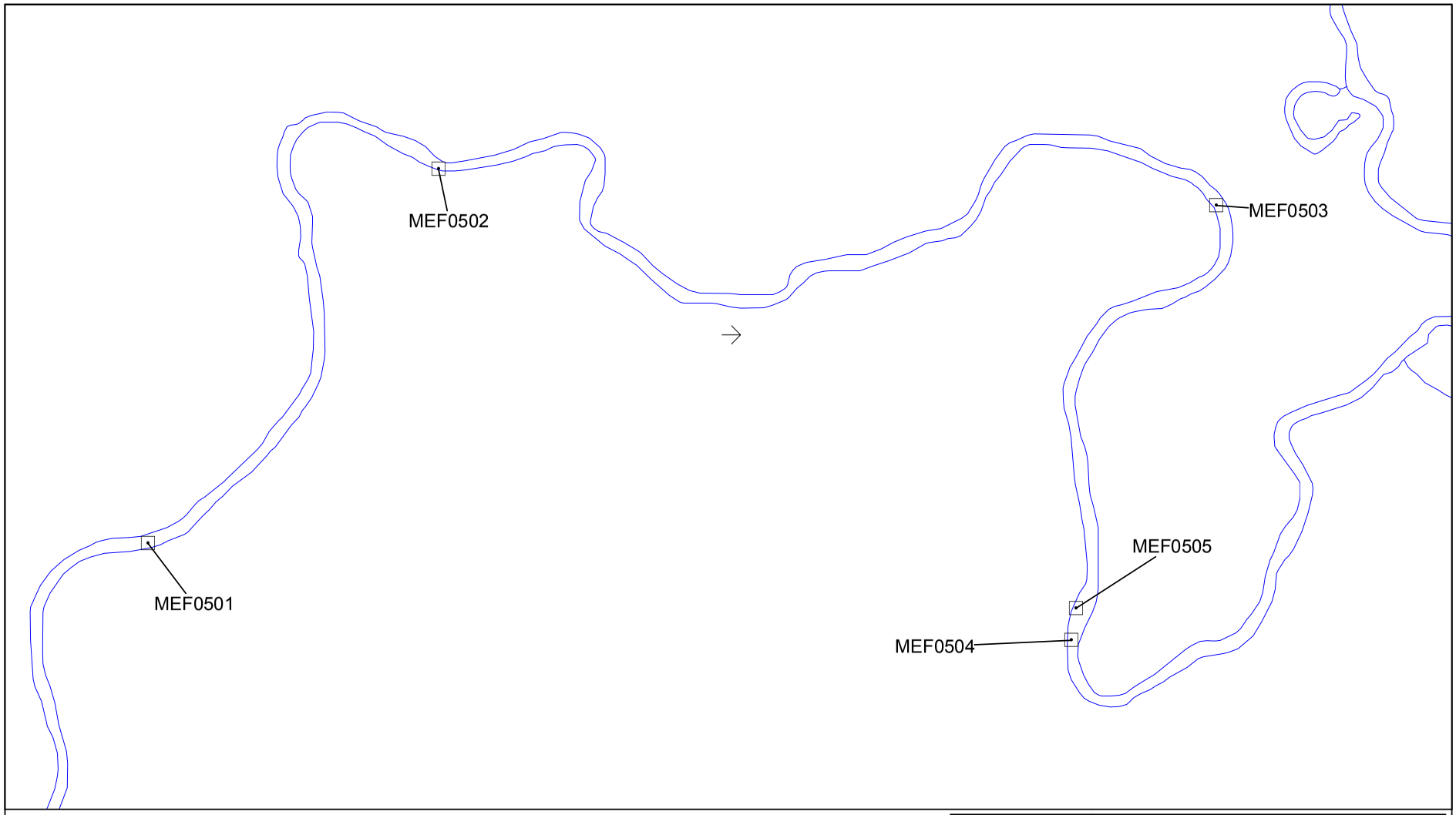
Figure A5

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 4 Fish Sampling Sites,
2010 Major Tributary Fish Inventory



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.45 0.9 km

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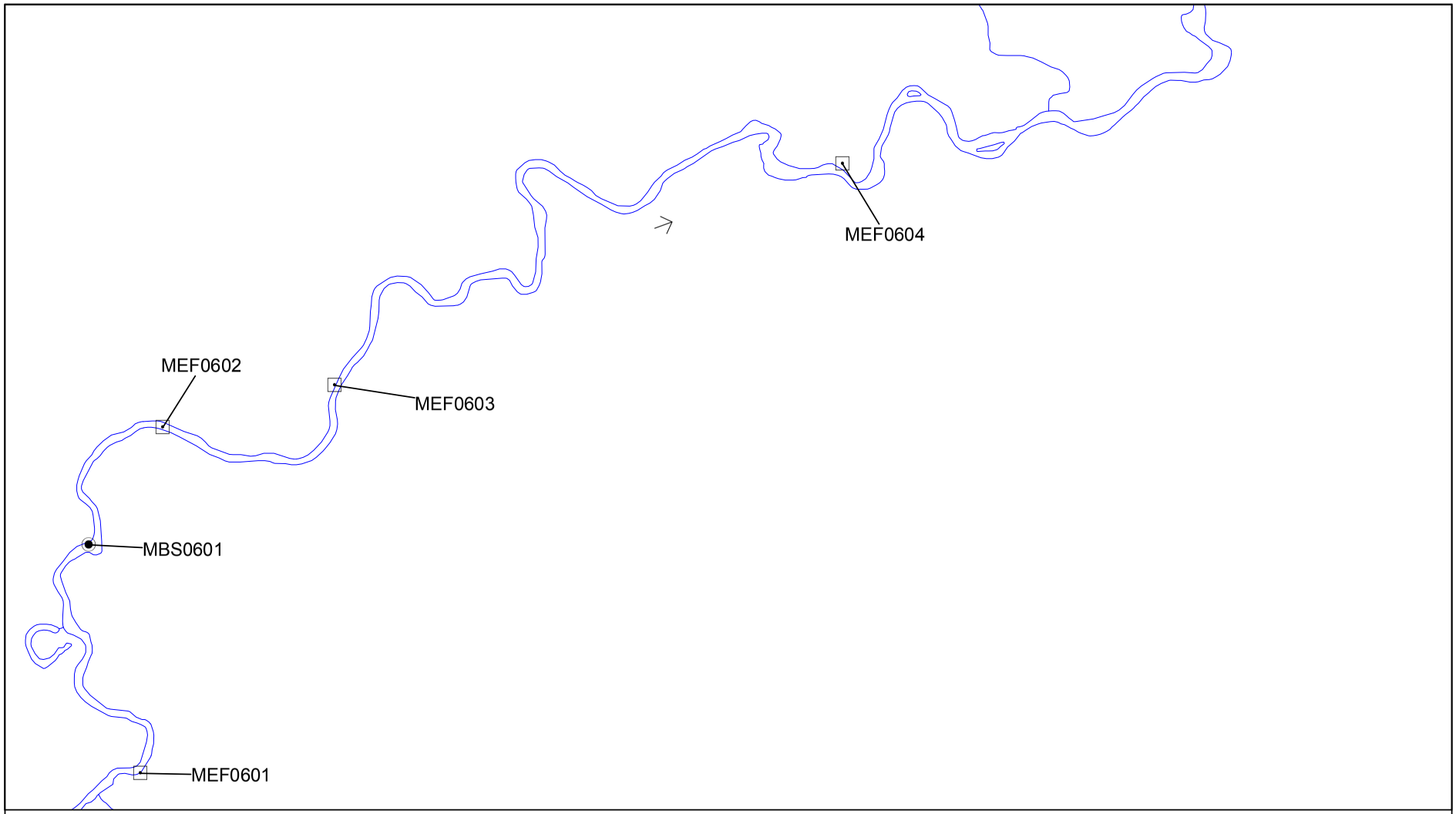
Figure A6

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 5 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.5 1 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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Figure A7

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 6 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

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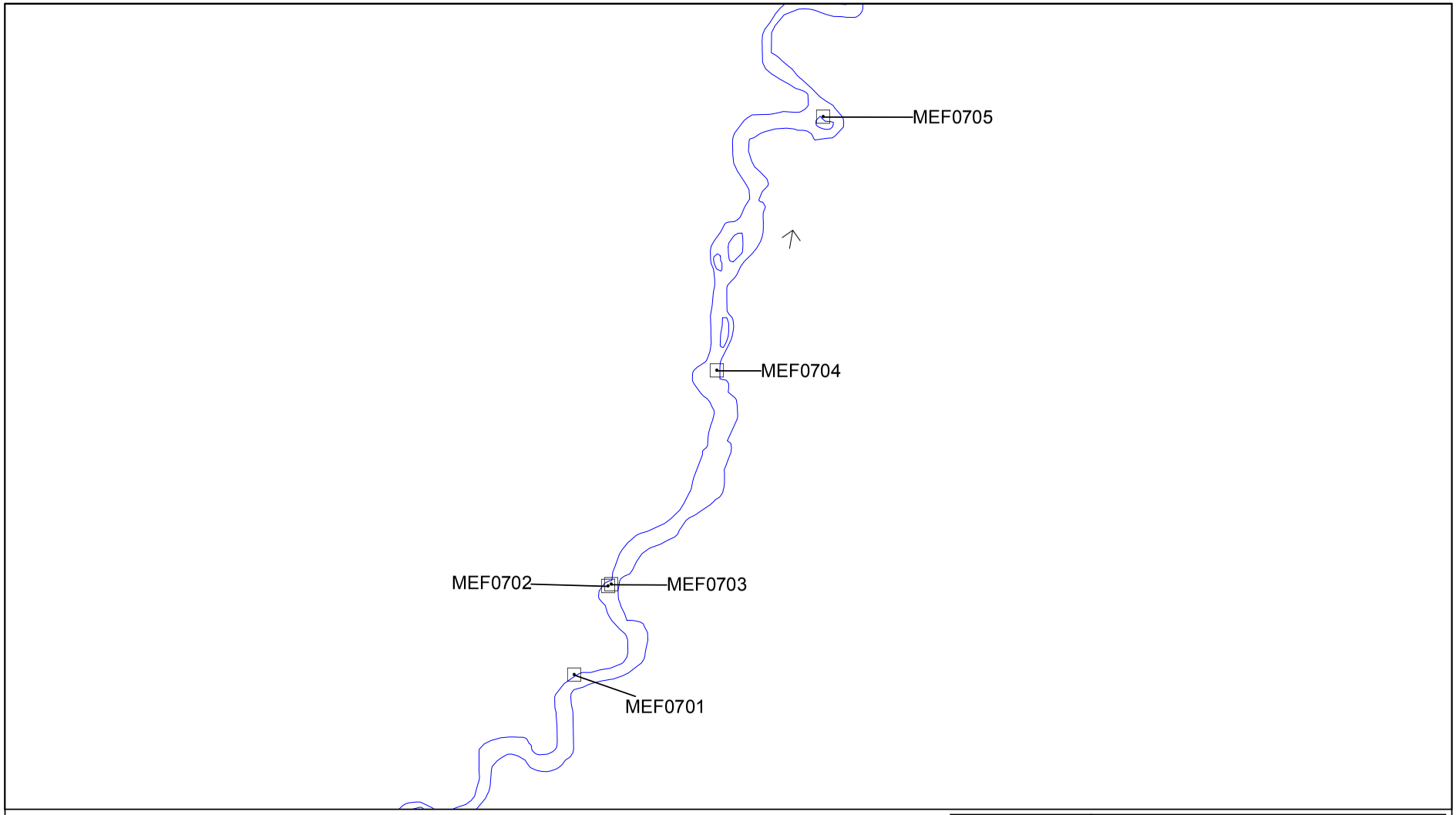

BC Government Data

Trim Map: 94A001-94A004, 94A011-94A017, 94A022-94A026, 93P082, 93P083, 93P091-93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.5 1 km

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Figure A8

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 7 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011

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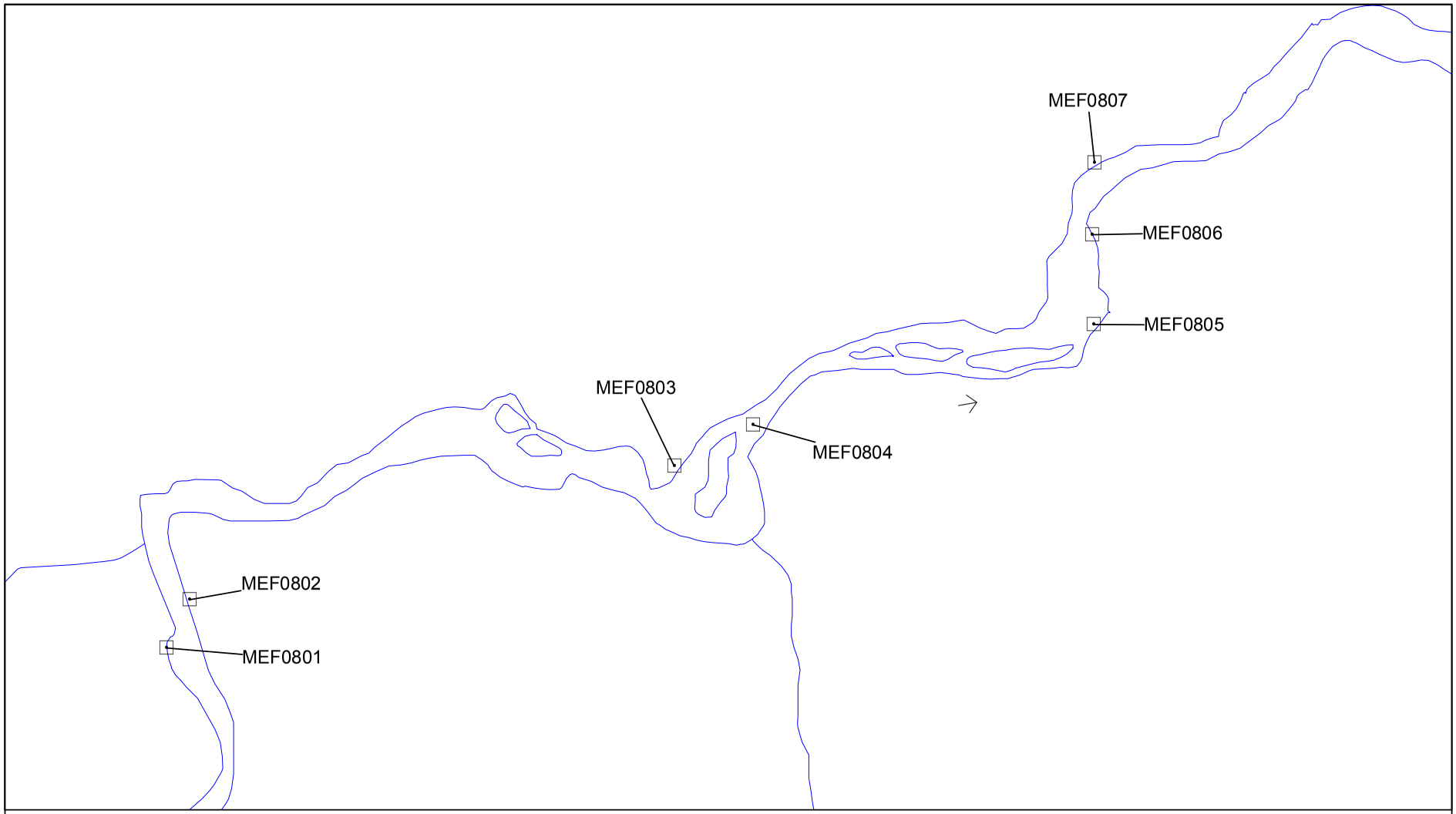

BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.35 0.7 km

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Figure A9

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 8 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

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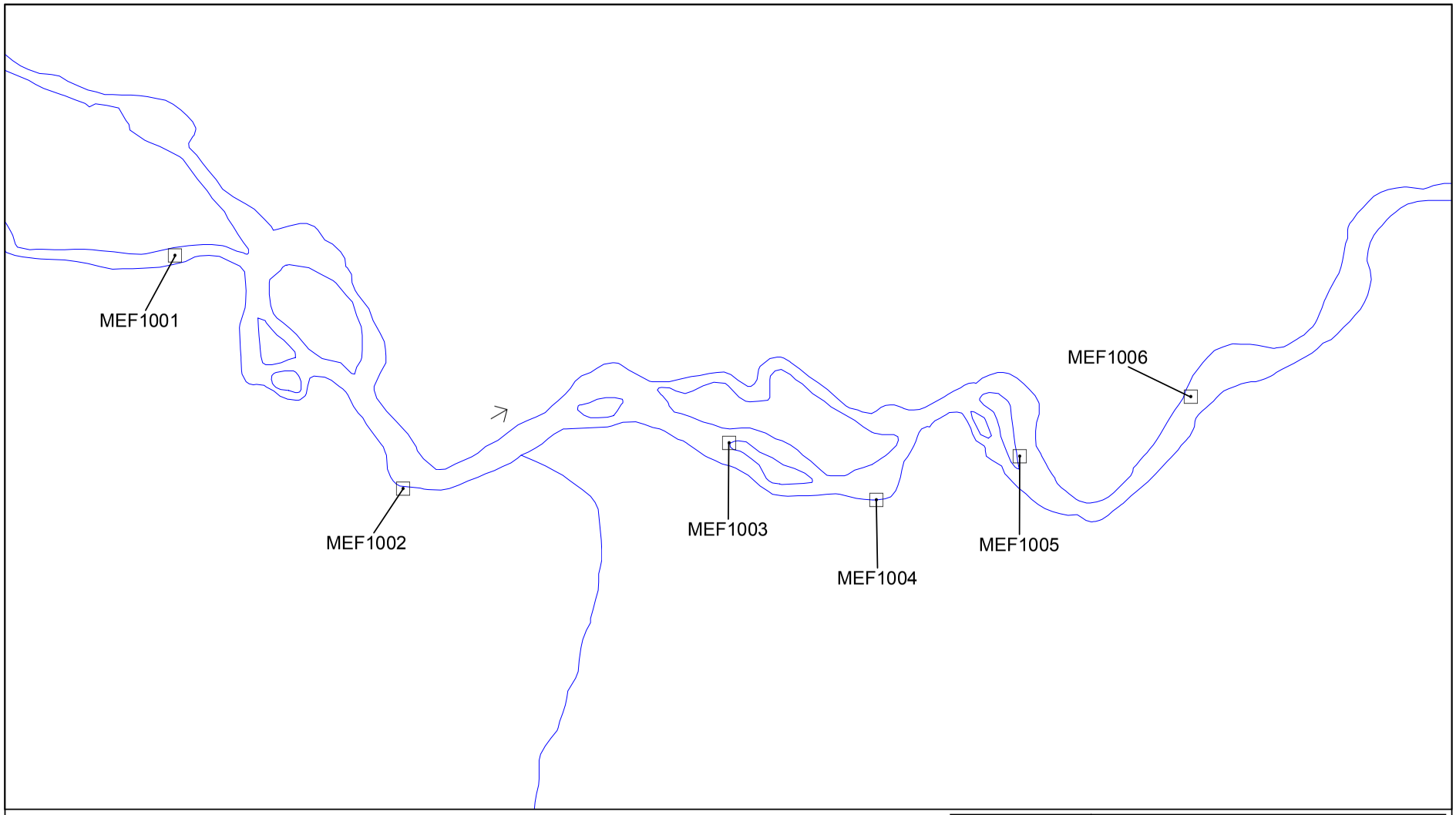
No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.35 0.7 km

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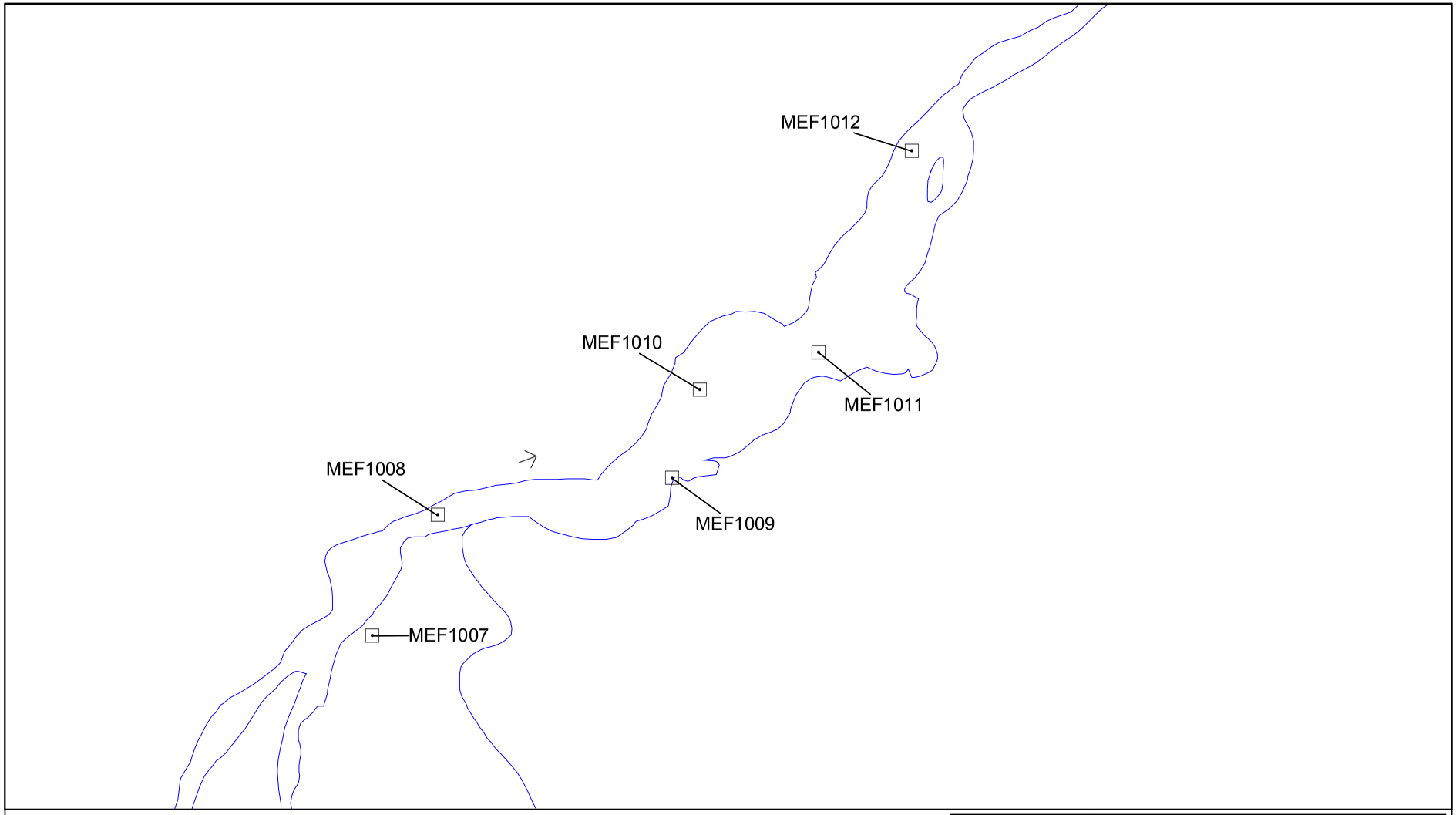
SITE C CLEAN ENERGY PROJECT

Figure A10

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 10 (Map 1/2)
Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A001 - 94A004, 94A011 - 94A017, 94A022 - 94A026, 93P082, 93P083, 93P091 - 93P093.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Flow Direction

N

0 0.3 0.6 km

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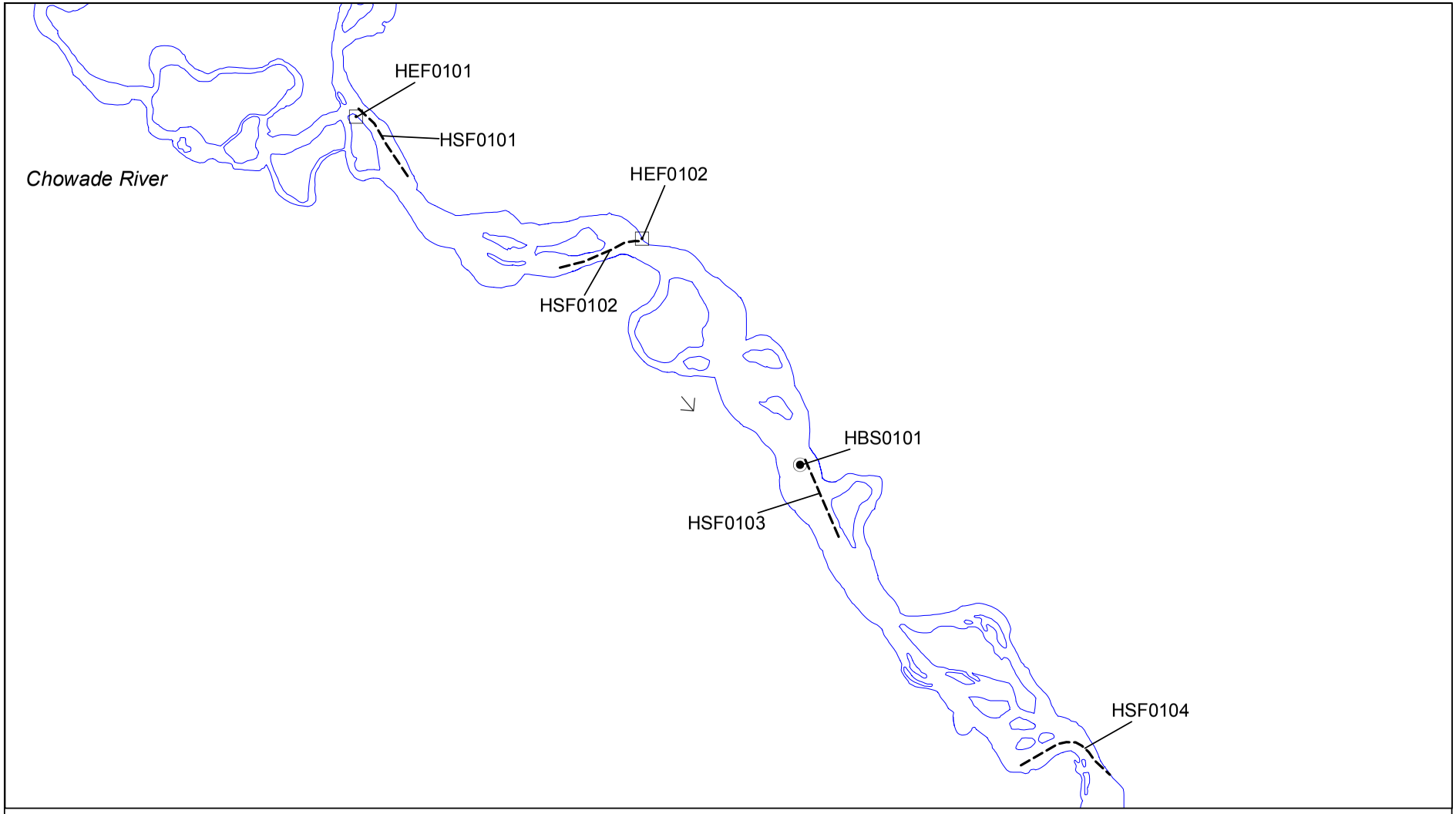
Figure A11

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Moberly River Section 10 (Map 2/2)
Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A022 - 94A026, 94A032, 94A041, 94A042, 94A051, 94B050, 94B058 - 94B060, 94B068, 94B077, 94B078.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

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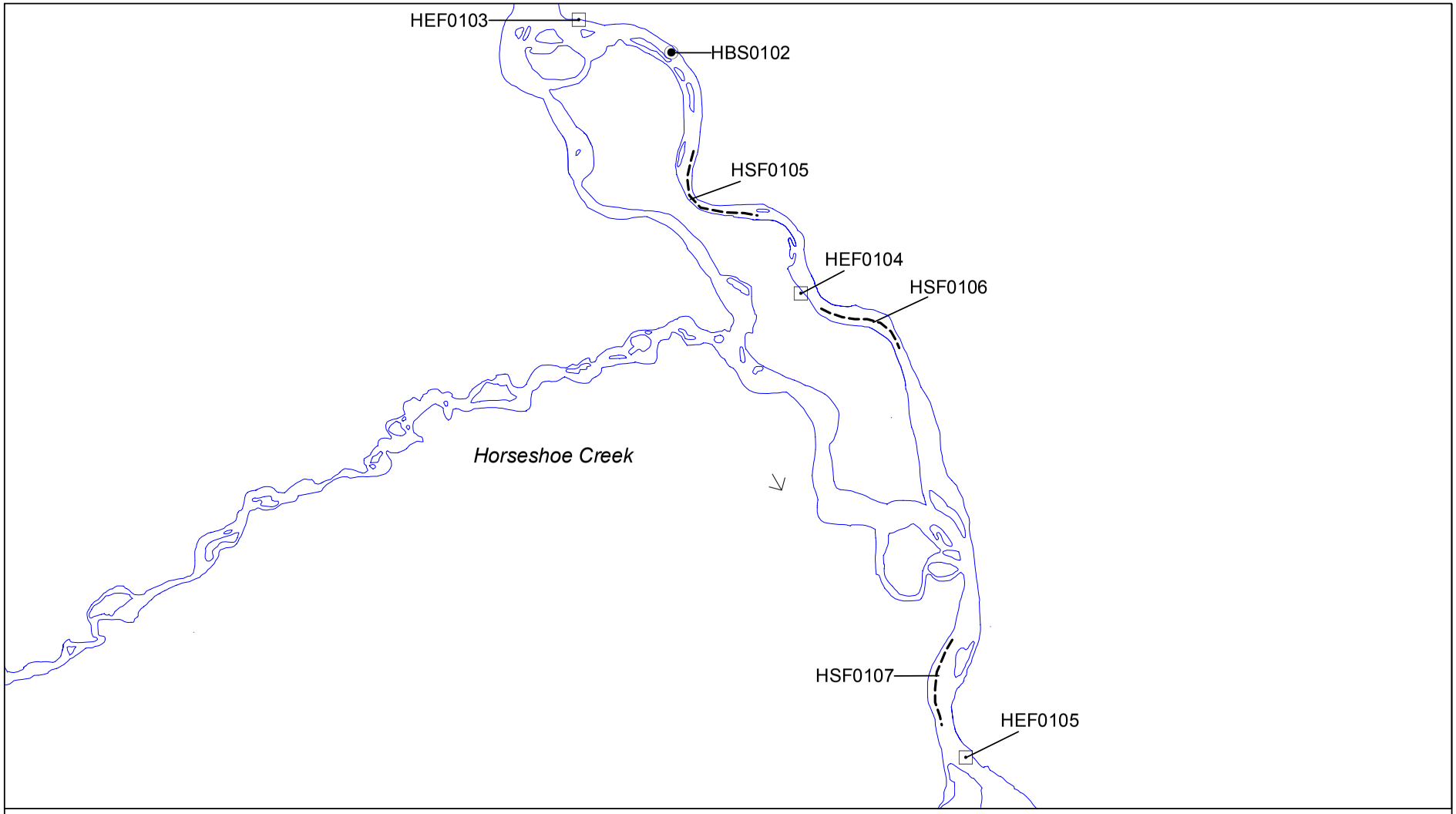
SITE C CLEAN ENERGY PROJECT

Figure A12

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 1 (Map 1/4)
Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A022 - 94A026, 94A032, 94A041, 94A042, 94A051, 94B050, 94B058 - 94B060, 94B068, 94B077, 94B078.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

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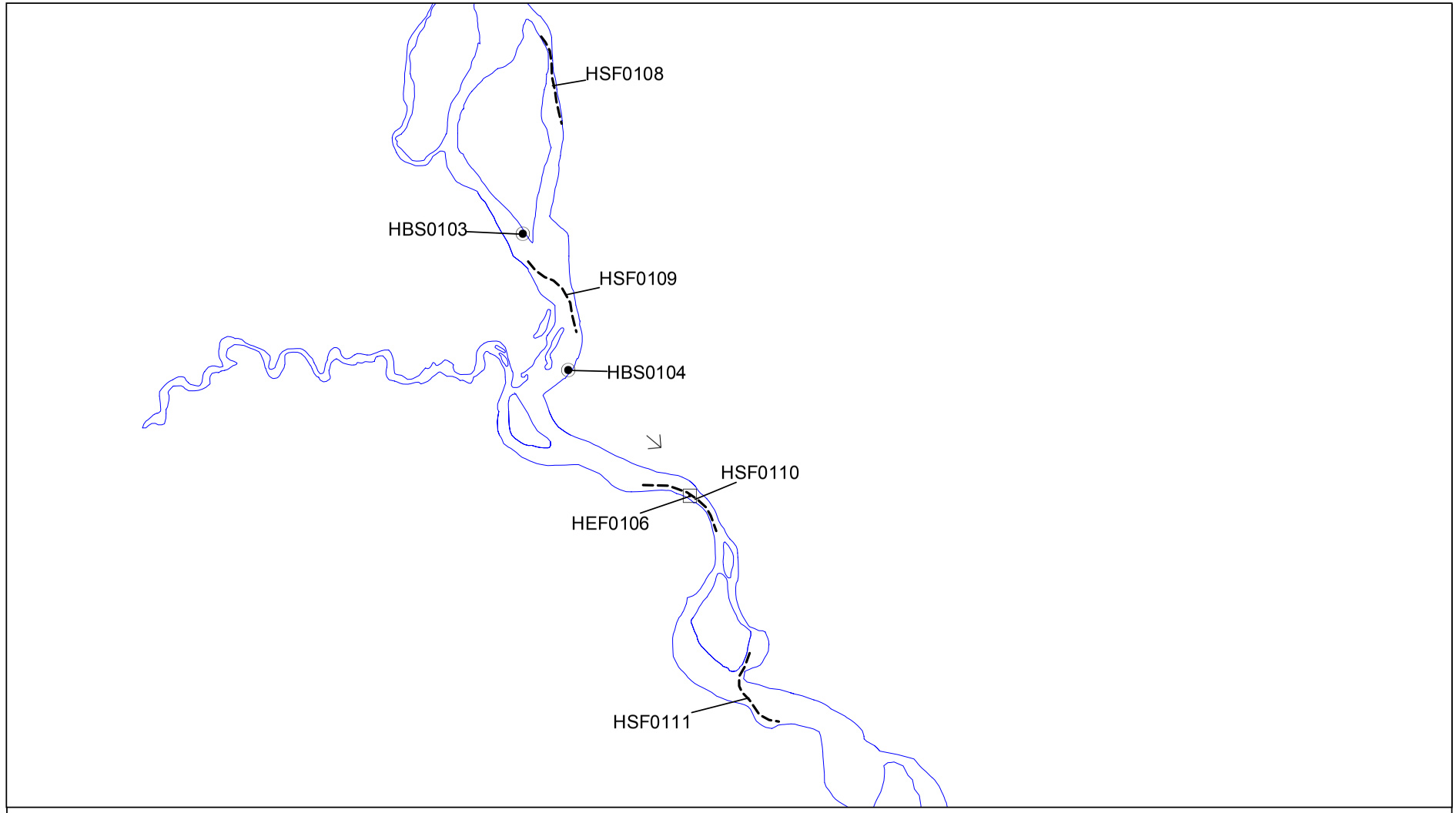
Figure A13

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 1 (Map 2/4)
Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A022 - 94A026, 94A032, 94A041, 94A042, 94A051, 94B050, 94B058 - 94B060, 94B068, 94B077, 94B078.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

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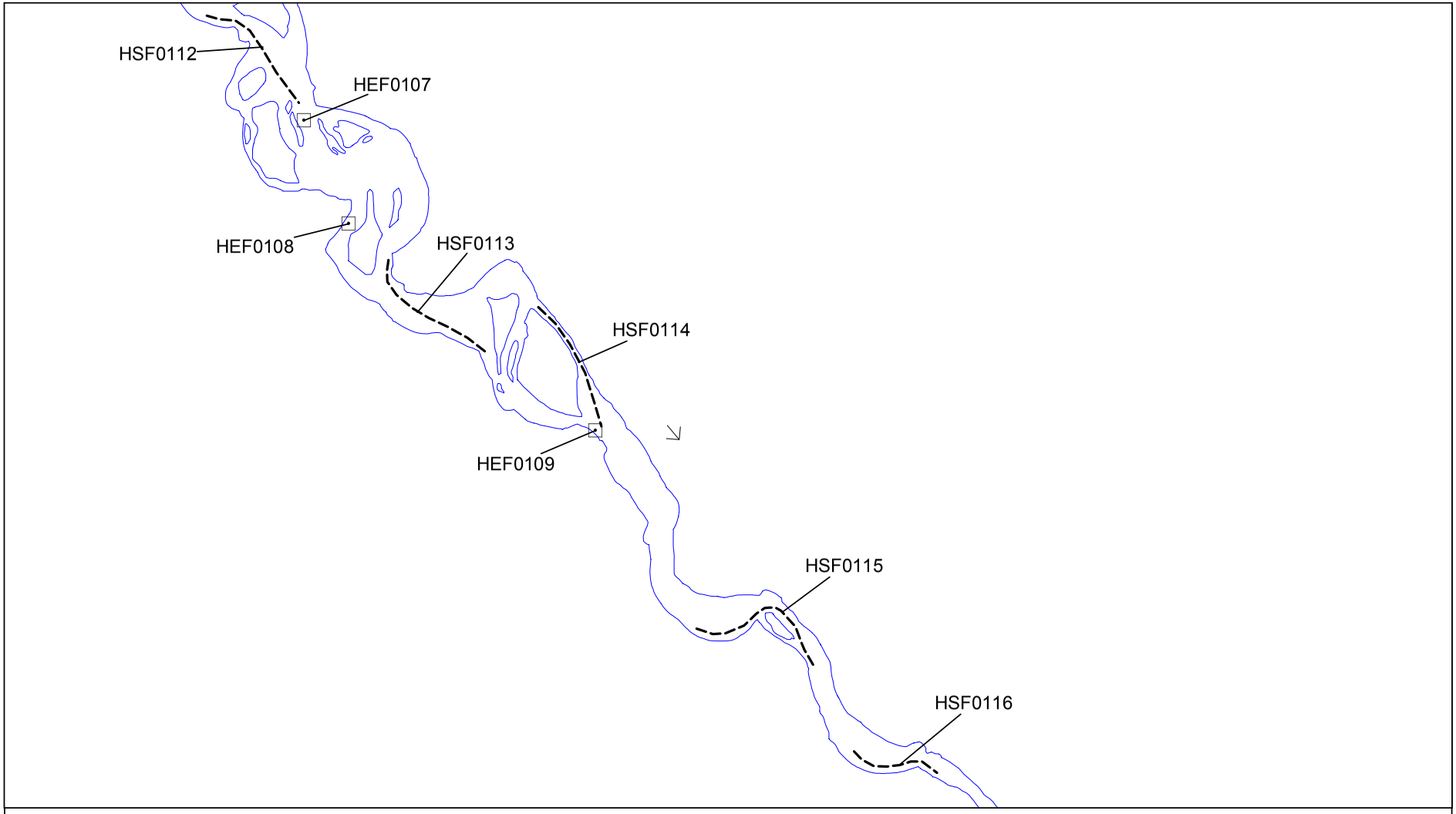
Figure A14

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 1 (Map 3/4)
Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

Trim Map: 94A022 - 94A026, 94A032, 94A041, 94A042, 94A051, 94B050, 94B058 - 94B060, 94B068, 94B077, 94B078.

Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

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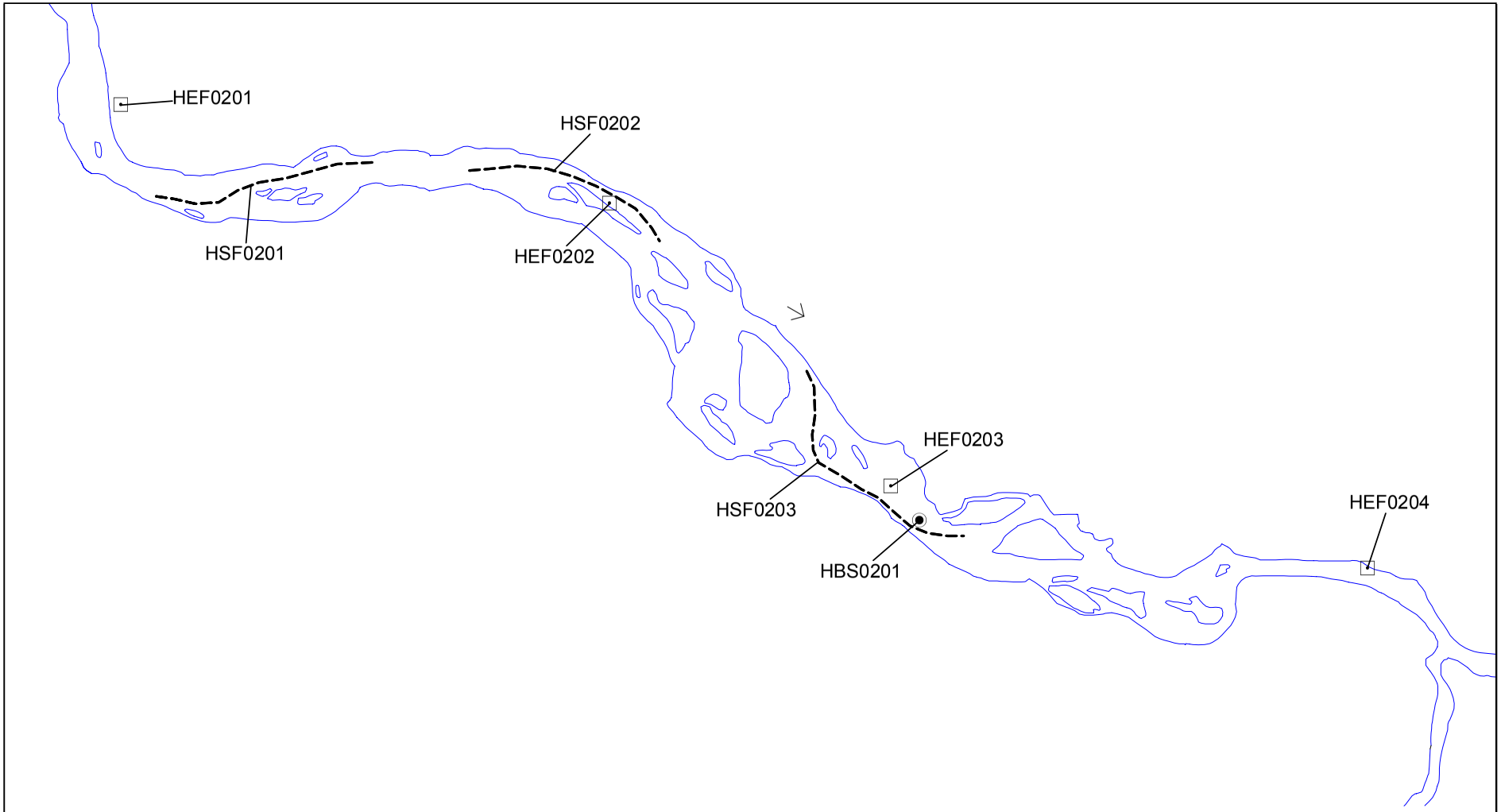
Figure A15

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 1 (Map 4/4)
Fish Sampling Sites,
2010 Major Tributary Fish Inventory

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

0 0.5 1 km

N

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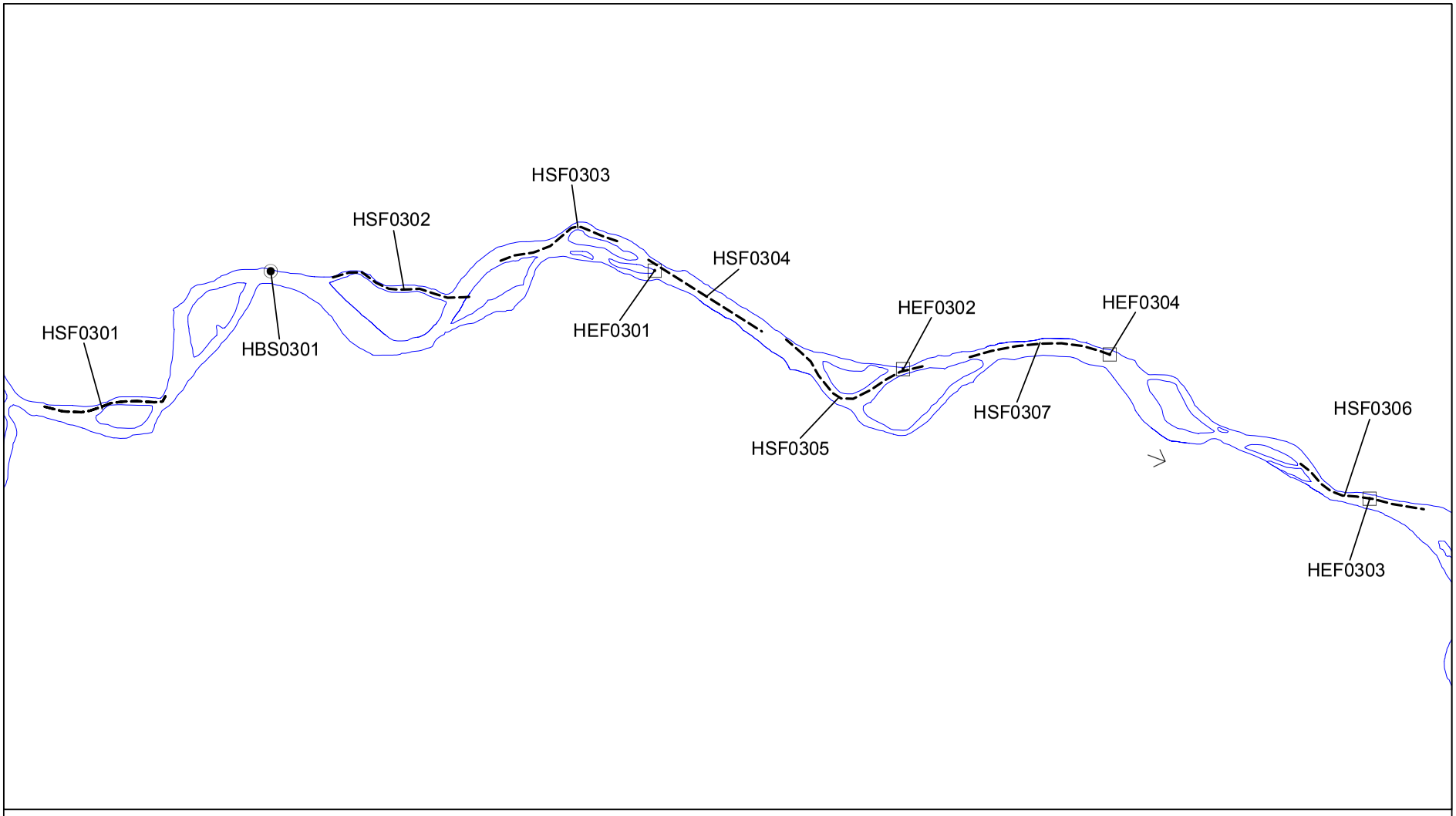
Figure A16

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 2 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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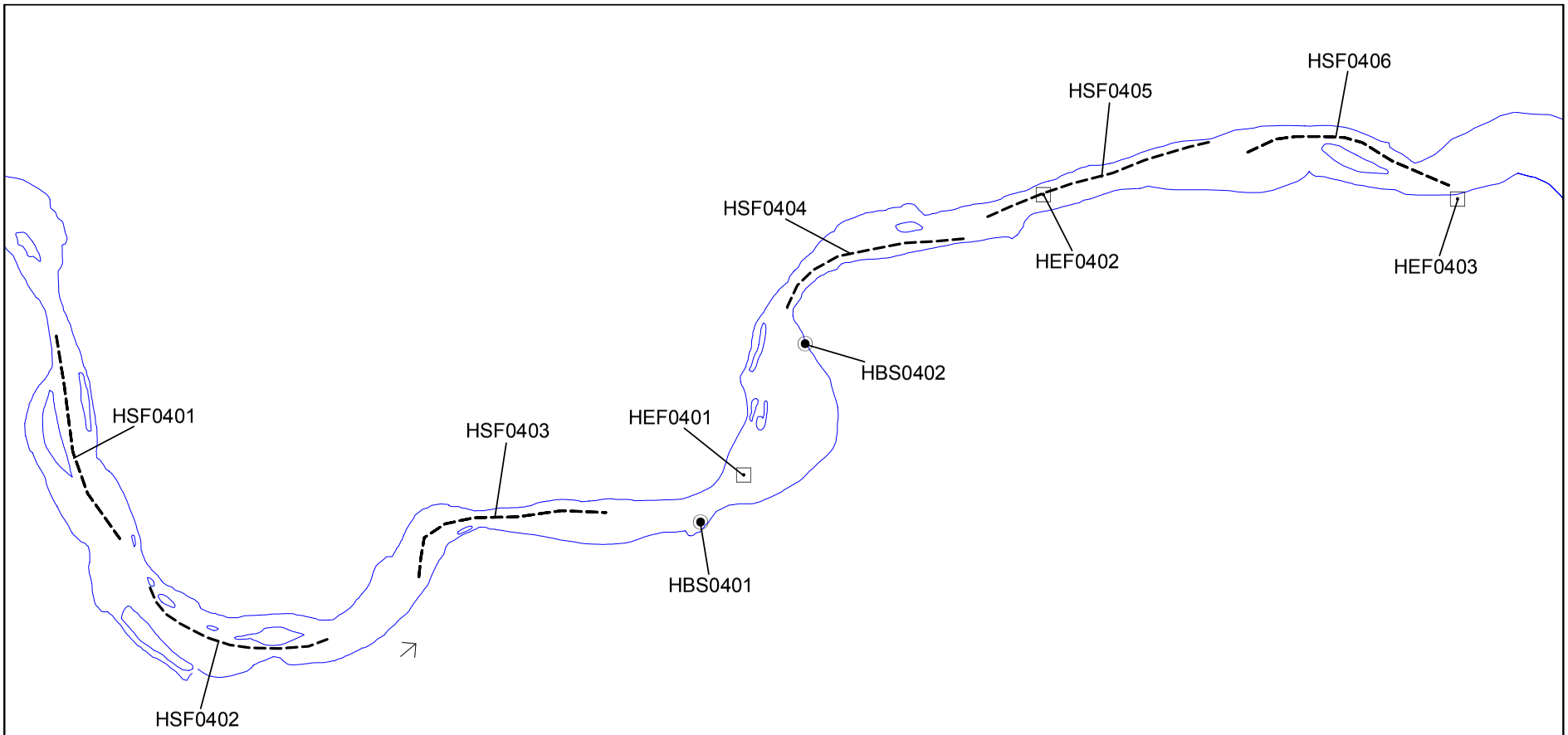
Figure A17

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 3 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

0 0.5 1 km

N

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Figure A18

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 4 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011

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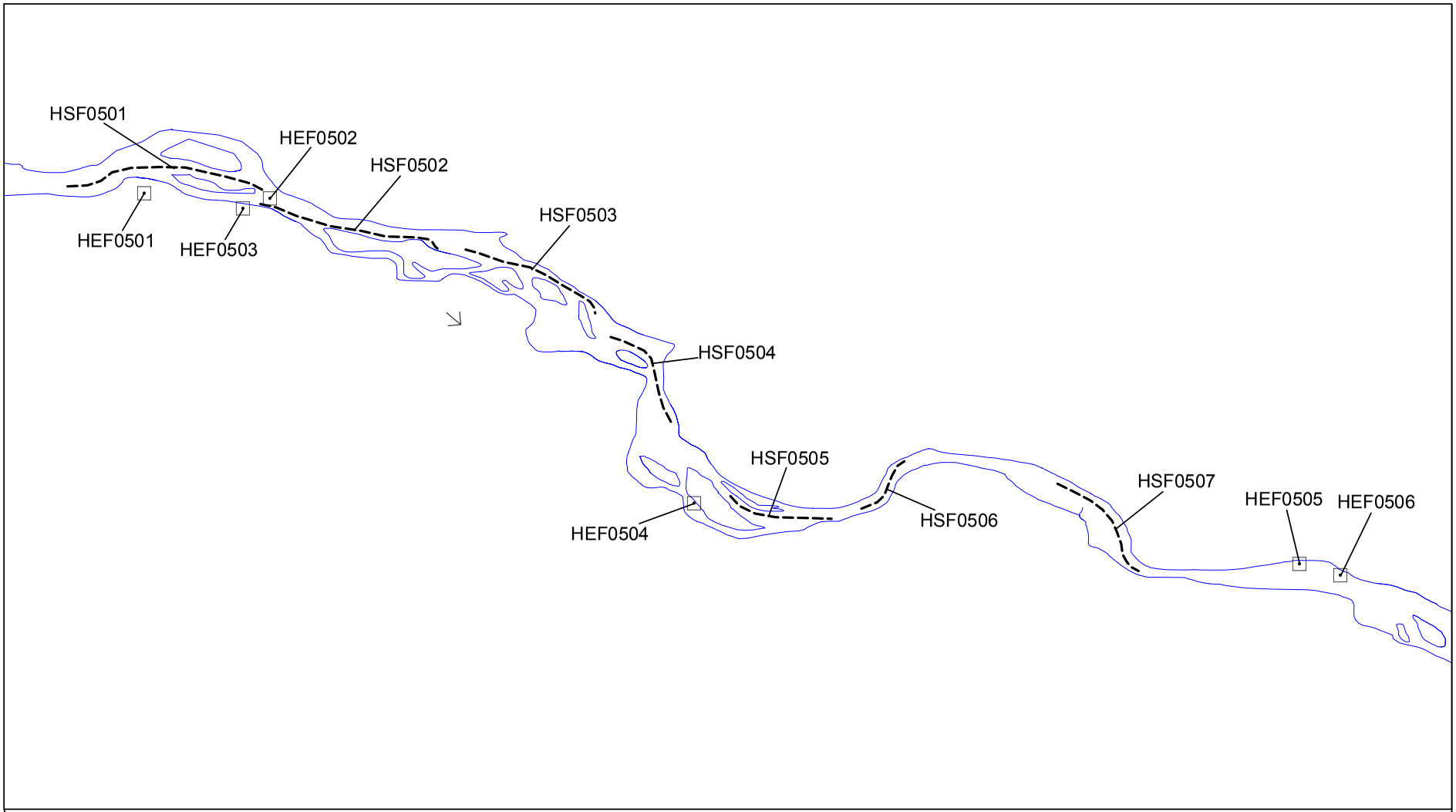

BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1.5 3 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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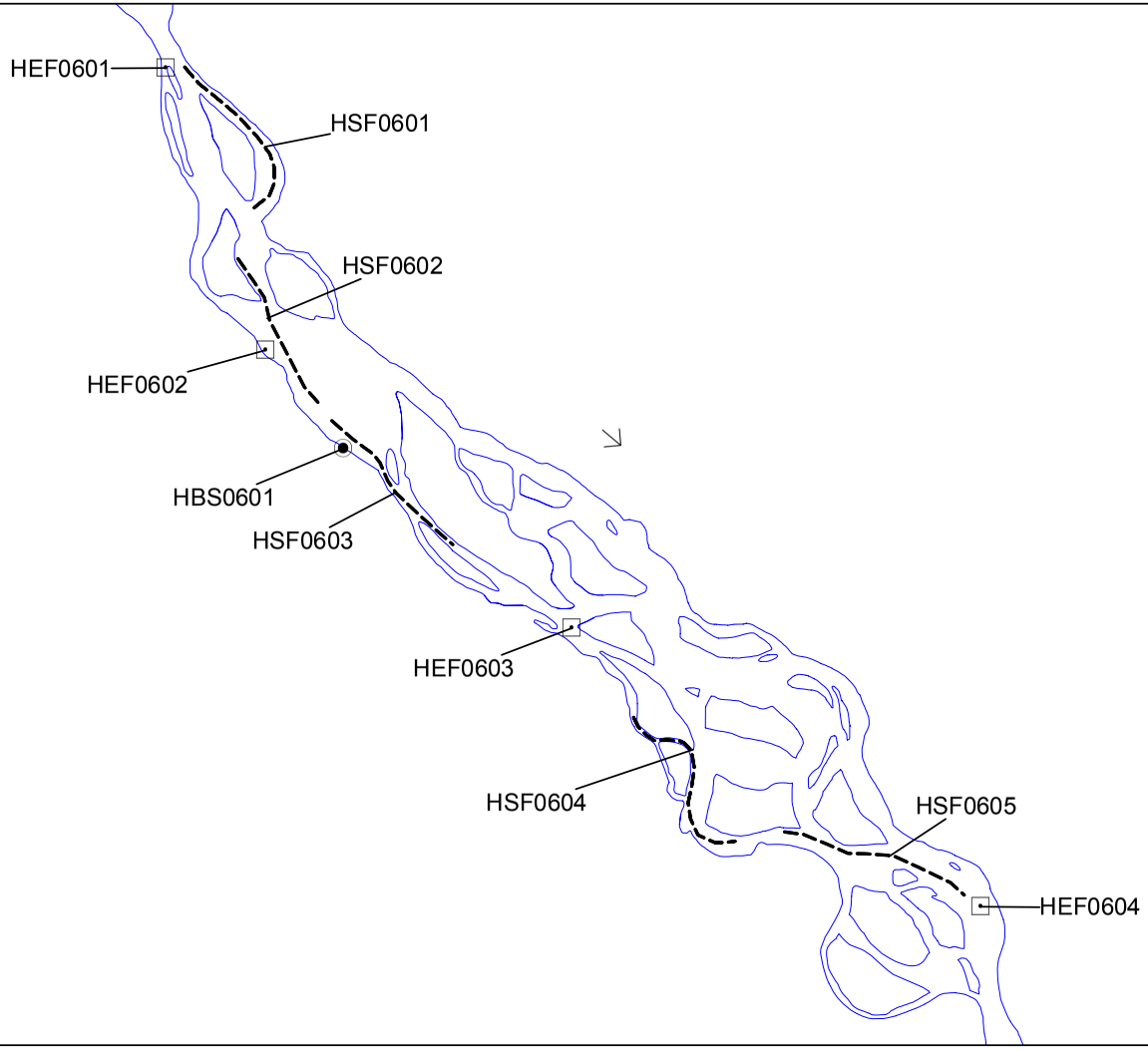
Figure A19

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 5 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

0 1 2 km

N

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Figure A20

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 6 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011

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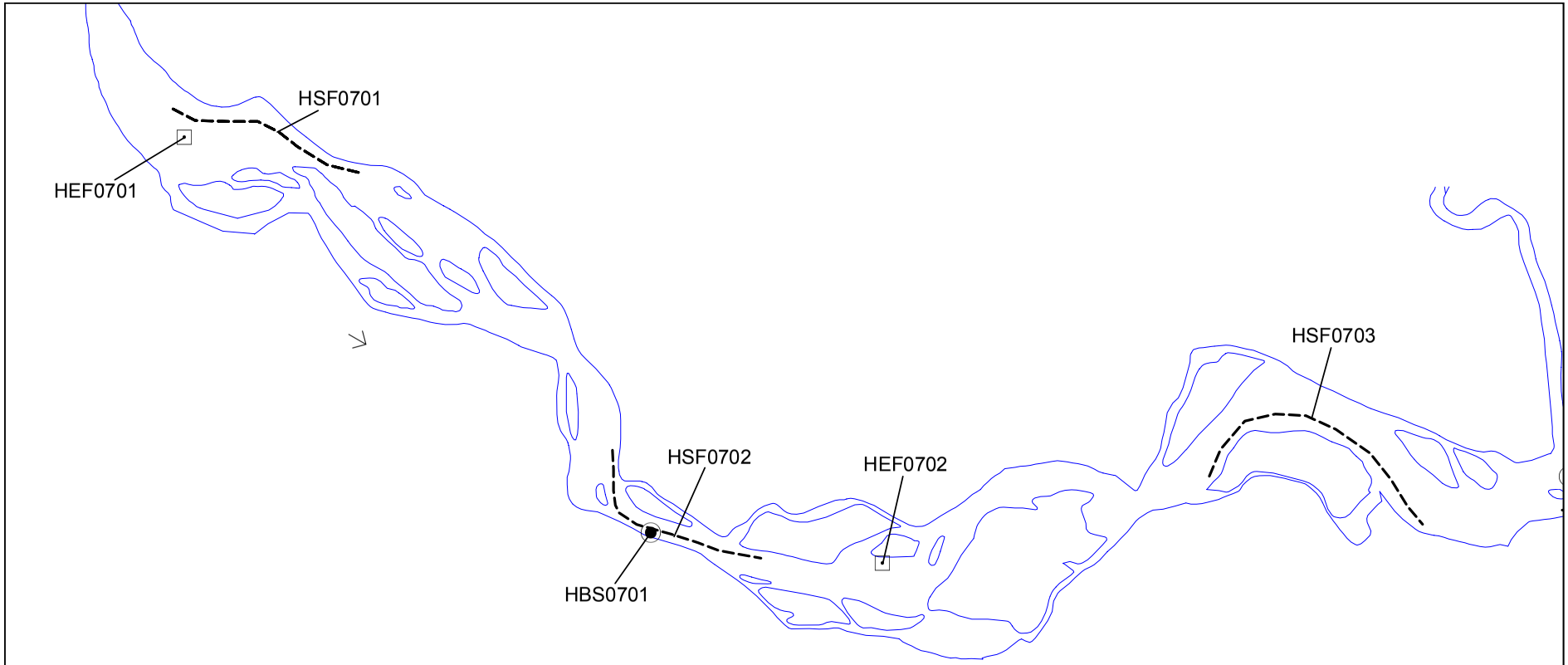

BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

0 0.5 1 km

N

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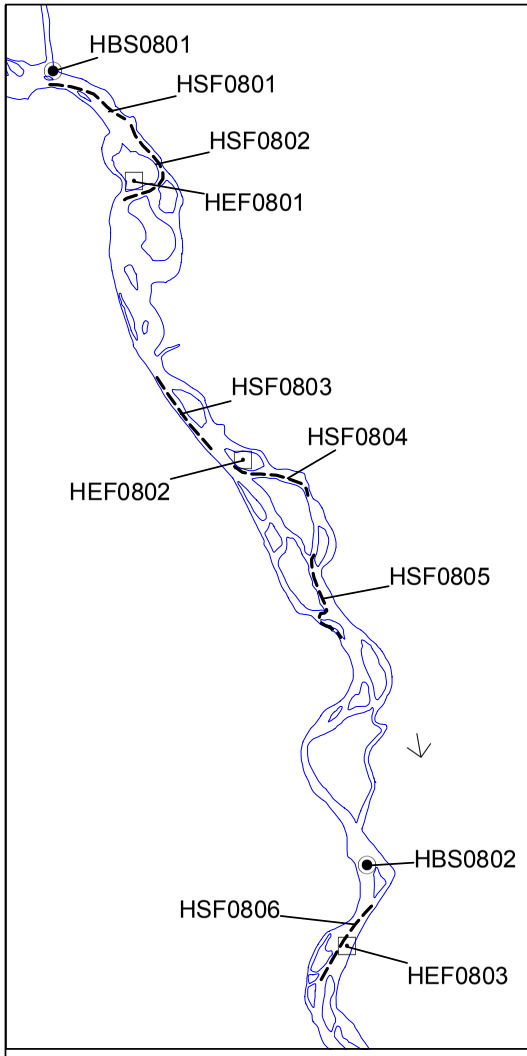
Figure A21

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 7 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 2 4 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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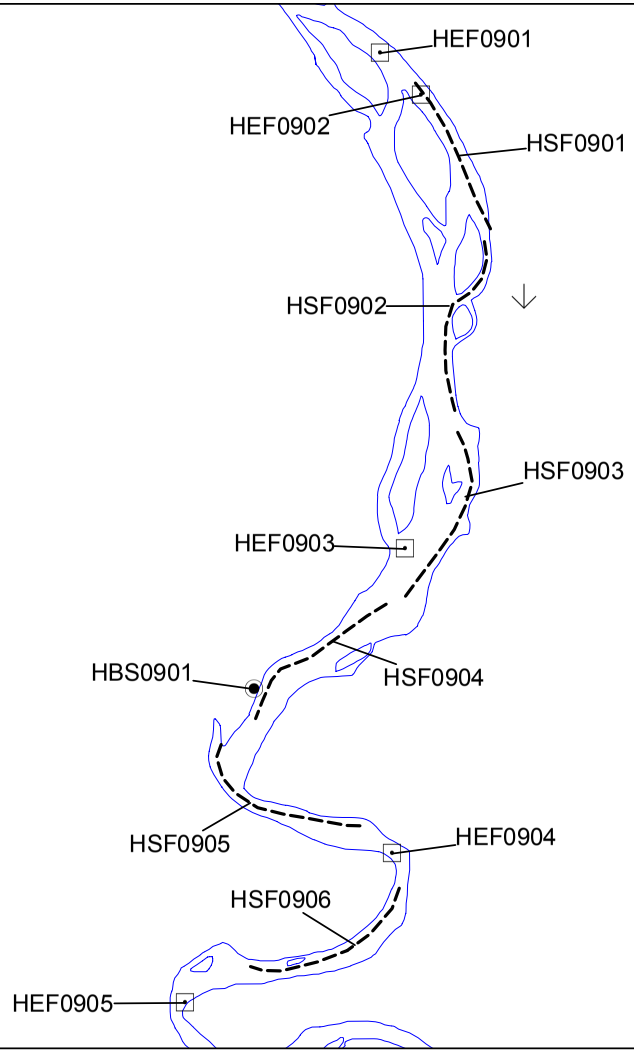
Figure A22

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 8 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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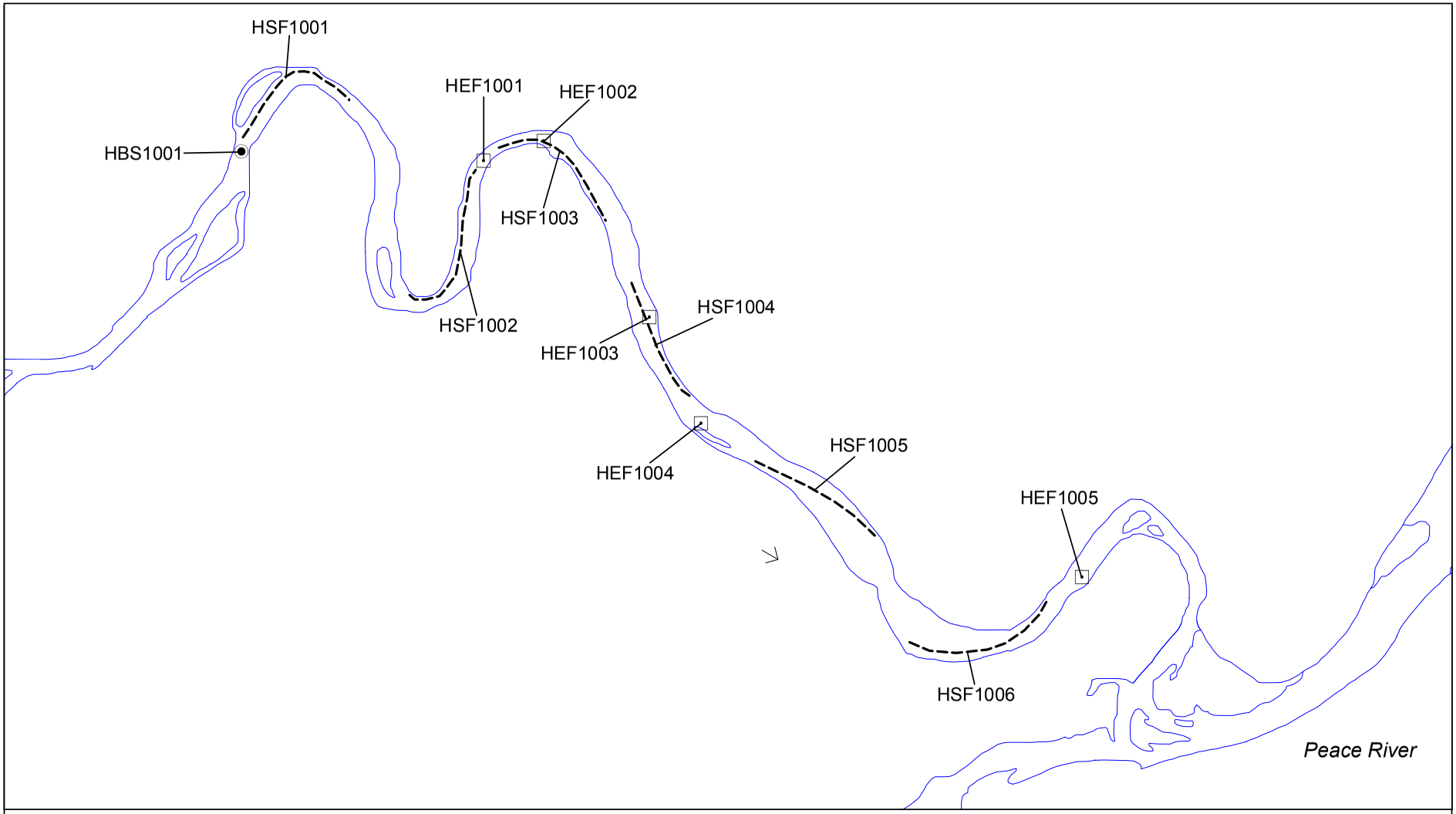
Figure A23

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 9 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011



BC Government Data

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Trim 20K (Version I) Representational Digital Map Sheet 2D, contours, planimetry, IGDS format (BC Crown Registry and Geographic Base)

BC Hydro Data

Potential inundation level (461.8 m maximum elevation) from Digital Elevation Model [DEM] generated from LiDAR data acquired July and August, 2006.

Legend

- Beach Seine Sites
- Backpack Electrofishing Sites
- Small Fish Electrofishing Sites
- Flow Direction

N

0 1 2 km

No decision has been made to build the Site C Hydro Project. This map is for information only, for preliminary analysis and planning in stage 2 of the Site C Project. Construction of the Site C Clean Energy Project is subject to required regulatory approvals including environmental certification.

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Figure A24

Peace River Site C Hydro Project
Stage 2 Preliminary Reference Information
Halfway River Section 10 Fish Sampling Sites,
2010 Major Tributary Fish Inventory

January 2011

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APPENDIX B
Definitions

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Appendix – B1
Habitat and Substrate Type Classification Systems

Instream Habitat

Provides a qualitative assessment of the physical characteristics of a stream and its potential as fish habitat.

Riffle - Portion of channel with increased velocity relative to Run and Pool habitat types; broken water surface due to effects of submerged or exposed bed materials; shallow (less than 25 cm). Limited value as habitat for larger juveniles and adults (i.e., feeding), but may be used extensively by young-of-the-year and small juveniles.

RF - Typical riffle habitat type; provides limited cover for all life stages.

RF/BG - Riffle habitat type with abundance of large cobble and boulder substrates. Limited cover for juveniles and adults; but, may be used extensively by young-of-the-year fish.

Rapids (RA) - Portion of channel with highest velocity relative to other habitat types. Deep (>25 cm); often formed by channel constriction. Substrate extremely coarse; dominated by large cobble and boulder substrates. Habitat provided for juveniles and adults in pocket eddies associated with substrate.

Run - Portion of channel characterized by moderate to high current velocity relative to Pool and Flat habitats; water surface largely unbroken. Potentially high habitat value for all life stages. Can be differentiated into five types based on depth and cover.

R1 - Maximum depth exceeding 1.5 m; average depth 1.0 m. High cover at all flow conditions. Highest quality habitat for larger juveniles and adults; limited value for young-of-the-year-fish.

R2/BG - Maximum depth reaching 1.0 m and generally exceeding 0.75 m; presence of large cobble or boulder substrates in channel. High cover at all flows. Moderate to high quality habitat for larger juveniles and adults.

R2 - Maximum depth reaching 1.0 m and generally exceeding 0.75 m. High cover during most flows, but not during base flows. Moderate quality habitat for juveniles and adults; limited value for young-of-the-year-fish.

R3/BG - Maximum depth of 0.75 m, but averaging <0.50 m; presence of large cobble or boulder substrates in channel. Moderate cover at all flows. Moderate quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

R3 - Maximum depth of 0.75 m, but averaging <0.50 m. Low cover at all flows. Lowest quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

Flat - Area of channel characterized by low current velocities (relative to RF and Run cover types); near-laminar (i.e., non-turbulent) flow. Depositional area dominated sand/silt substrates. Differentiated from Pool habitat type by high channel uniformity and lack of direct association with riffle/run complex. Potential habitat value for all life stages is moderate to high. Can be differentiated into five types based on depth and cover.

F1 - Maximum depth exceeding 1.5 m; average depth 1.0 m or greater. High cover at all flows. Highest quality habitat for larger juveniles and adults; limited value for young-of-the-year-fish.

F2/BG - Maximum depth reaching 1.0 m and generally exceeding 0.75 m; presence of large cobble or boulder substrates in channel. High cover at all flows. Moderate to high quality habitat for larger juveniles and adults.

F2 - Maximum depth exceeding 1.0 m; generally exceeding 0.75 m. High cover during most flows, but not during base flows. Moderate quality habitat for juveniles and adults; limited value for young-of-the-year-fish.

F3/BG - Maximum depth of 0.75 m, but averaging <0.50 m; presence of large cobble or boulder substrates in channel. Moderate cover at all flows. Moderate quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

F3 - Maximum depth of 0.75 m, averaging less than 0.50 m. Low cover at all flows. Lowest quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

Pool - Discrete portion of channel featuring increased depth and reduced velocity (downstream oriented) relative to Riffle and Run habitat types. Normally featuring Riffle/Run associations. Principal habitat value for all life stages is cover. When in close association with Riffle/Run habitats, value can be very high. Can be differentiated into three types based on depth.

P1 - Maximum depth exceeding 1.5 m; average depth 1.0 m or greater; high cover at all flow conditions. Often intergrades with deep-slow type of R1. Highest quality habitat for larger juveniles and adults; limited value for young-of-the-year-fish.

P2 - Maximum depth reaching or exceeding 1.0 m, generally exceeding 0.75 m. High cover at all but base flows. Moderate quality habitat for juveniles and adults; limited value for young-of-the-year-fish.

P3 - Maximum depth of 0.75 m, averaging <0.50 m. Low instream cover; includes small pocket eddies. Lowest quality habitat for all life stages.

Special Features - Includes the following instream features:

Ledges (LG) - Areas of bedrock intrusion into the channel; often creates Chutes and Pool habitat.

Falls (FAL) - Channel section exhibiting distinct vertical falls over boulder and bedrock. Often a barrier to fish.

Cascade (CAS) - Area of channel exhibiting distinct drop over boulder and bedrock, but, no defined falls. Often a barrier to fish.

Tributary Confluence (TC) - Area of main river channel directly affected by tributary confluence.

Backwater (BW) - Well-defined zone of zero or reverse flow water velocity associated with a large bank irregularity.

Tributary Confluence/Backwater (TCBW) – area of main channel and backwater associated with bank irregularities formed by tributary confluence.

Snye (SN) - Well-defined back channel not subjected to mainstem currents.

Oxbow (OX) – Bend or meander in a stream or river that becomes detached from the stream channel from natural fluvial processes.

Bank Habitat

The zone within the immediate hydraulic influence of the bank-water interface. Typically extends from the annual high-water to low-water mark.

Armoured
Bank is stable and is composed of armoured cobble to boulder substrates that are not subjected to movement during annual floods; can be differentiated into categories based on the amount of bank roughness.
(A1 very rough, A2 moderately rough, A3 not rough)

Canyon
Bank is stable, is near vertical, and is composed of boulder to bedrock substrates; can be differentiated into categories based on the amount of bank roughness (C1 very rough, C2 moderately rough, C3 not rough).

Depositional
Bank exhibits low relief and is composed of silt to cobble substrates; characterized by high substrate mobility and low bank roughness (D1 cobble; D2 gravel; D3 sand and silts). Differentiated into tributary (TD) and mainstem (MD) depositional zones.

Erosional
Bank is dominated silt to gravel substrates that exhibit evidence of active erosion; note that large rock substrates can be present; can be differentiated into categories based on the amount of bank roughness
(E1 very rough, E2 moderately rough, E3 not rough).

Mesohabitat

To address issues caused by sampling several habitat types within on site using small fish and large fish boat electrofisher methods , sampled instream and bank habitat types were categorized into discrete groups based on differences in physical characteristics that included bank slope, water velocity, and the presence of physical cover (see table).

Four mesohabitat types sampled during the program were as follows:

- SFC - Moderate slope; shallow water; high water; velocity; physical cover
- SFN - Gradual slope; shallow water; high water velocity; no physical cover
- SSC - Moderate slope; shallow water; slow; physical cover
- SSN - Gradual slope; shallow water; slow; no physical cover

MesoHabitat Category	Bank Habitat[a]	Instream Habitat	Water Velocity[a]	Channel Bed Slope[a]	Physical Instream Cover	Substrate
SFN	A3	Run	Moderate to High	Low	Absent	Rock
SFC	A1/A2	Run	Moderate to High	Moderate	Present	Rock
SSN	A3	Flat	Low	Low	Absent	Rock or Sand
SSC	A1/A2	Flat	Low	Moderate	Present	Rock or Sand

[a] Based on subjective measure by field biologist.

Substrate Classification System

Modified Wentworth classification for substrate particle sizes (from Cummins 1962)

Category	Particle Size Range (mm)
Bedrock	-
Boulder	>256
Cobble	32 - 256
Gravel	1 - 32
Sand	0.0625 - 0.2-1
Silt	0.0039-0.0625
Clay	<0.0039
Organics	-

Appendix – B2
Site Characteristics Definitions

Habitat type:	See Appendix B1 for definitions.
Water conductivity:	Measured using Hanna HI98311 EC/TDS meter (μ*S*/cm) (± 2% full scale).
Water temperature:	Measured using Hanna HI98311 EC/TDS meter (± 0.1^{o}C).
Water pH:	Measured using Hanna HI98311 EC/TDS meter (± 0.01).
Water clarity:	Measured to the nearest centimetre using a secchi plate mounted on a pole (plate was 2.5 cm wide x 21 cm long partitioned into three equal sections of black, white, and black).
Sample effort:	Dependent on sample method. Boat electrofishing measured as number of fish/km, backpack electrofishing effort measured as number of fish/m, beach seine effort measured as number fish/100 m^2, gill net effort measured as number fish/100 m^2/24 h, and minnow trap effort measured as number of fish/trap/24 h.
Substrate type (%):	Material forming the bottom of the stream bed (see Substrate Classification System, Appendix B1). Visually rated within a predetermined area of stream bed.
Fish Cover (%):	Overhead (Ovh) cover, rock cover, large organic debris (LOD) cover, submergent (Sub) vegetation cover, emergent (Emer) vegetation cover, algal cover, that provide protection for fish within a predetermined area.
D90 (cm):	Represented the average size of substrate particle that is in the 90th percentile.
Embeddedness:	Degree to which rock substrates are surrounded and/or are covered by fines (Low, Moderate, High).
Compaction:	Looseness of substrate; ability to be moved during high flow (Low, Moderate, High).
Depth (m):	Depth of water at a point measured to nearest centimetre. At beach seines sites depth is measured at ¼, ½, and ¾ of the haul width. Depth at electrofisher sites depth is measured in the same manner across the width of sampled area.
Velocity (m/s):	Measured in the same place depth is taken at beach seine and backpack electrofisher sites. Measured with Swoffer Model 2100 flow meter wading wand (wand automatically determines depth at 0.6 m from water surface – best place to determine average velocity of water column in relatively shallow water) (m/s every 6.0 seconds).

Appendix – B3
Fish Life History Data Abbreviations and Codes

BC Label	Alberta Label	Common Name	Scientific Name	BC Label	Alberta Label	Common Name	Scientific Name
RB	RBTR	Rainbow trout	*Oncorhynchus mykiss*	BB	BURB	Burbot	*Lota lota*
GB	BNTR	Brown trout	*Salmo trutta*	CCG	SLSC	Slimy sculpin	*Cottus cognatus*
CT	CTTR	Cutthroat trout	*Oncorhynchus clarkii*	CRI	SPSC	Spoonhead sculpin	*Cottus ricei*
BT	BLTR	Bull trout	*Salvelinus confluentus*	CAS	PRSC	Prickly sculpin	*Cottus asper*
DV	DOVR	Dolly varden	*Salvelinus malma*	CAL	CSSC	Coastrange sculpin	*Cottus aleuticus*
LT	LKTR	Lake trout	*Salvelinus namaycush*	CCN	SHSC	Shorthead sculpin	*Cottus confusus*
AC	ARCH	Arctic char	*Salvelinus alpinus*	CLA	PSSC	Pacific staghorn sculpin	*Leptocottus armatus*
EB	BKTR	Brook trout	*Salvelinus fontinalis*	CBA	MTSC	Mottled sculpin	*Cottus bairdii*
GR	ARGR	Arctic grayling	*Thymallus arcticus*	CRH	TRSC	Torrent sculpin	*Cottus rhotheus*
MW	MNWH	Mountain whitefish	*Prosopium williamsoni*	BSB	BRST	Brook stickleback	*Culaea inconstans*
RW	RNWH	Round whitefish	*Prosopium cylindraceum*	NSB	NNST	Ninespine stickleback	*Pungitius pungitius*
PW	PGWH	Pygmy whitefish	*Prosopium coulterii*	TSB	THST	Threespine stickleback	*Gasterosteus aculeatus*
LW	LKWH	Lake whitefish	*Coregonus clupeaformis*	RSC	RDSH	Redside shiner	*Richardsonius balteatus*
KO	KOKA	Kokanee	*Oncorhynchus nerka*	NSC	NPMN	Northern pikeminnow	*Ptychocheilus oregonensis*
LSU	LNSC	Longnose sucker	*Catostomus catostomus*	PDC	PRDC	Pearl dace	*Margariscus margarita*
WSU	WHSC	White sucker	*Catostomus commersonii*	PCC	PEAM	Peamouth	*Mylocheilus caurinus*
CSU	LSSC	Largescale sucker	*Catostomus macrocheilus*	FHC	FLCH	Flathead chub	*Platygobio gracilis*
BSC	BRSC	Bridgelip sucker	*Catostomus columbianus*	LKC	LKCH	Lake chub	*Couesius plumbeus*
MSC	MNSC	Mountain sucker	*Catostomus platyrhynchus*	LNC	LNDC	Longnose dace	*Rhinichthys cataractae*
CMC	CHIS	Chiselmouth	*Acrocheilus alutaceus*	FDC	FNDC	Finescale dace	*Phoxinus neogaeus*
LSG	LKST	Lake sturgeon	*Acipenser fulvescens*	RDC	NRDC	Northern redbelly dace	*Phoxinus eos*
WSG	WHST	White sturgeon	*Acipenser transmontanus*	LDC	LPDC	Leopard dace	*Rhinichthys falcatus*
GE	GOLD	Goldeye	*Hiodon alosoides*	ESC	EMSH	Emerald shiner	*Notropis atherinoides*
NP	NRPK	Northern pike	*Esox lucius*	STC	SPSH	Spottail shiner	*Notropis hudsonius*
WP	WALL	Walleye	*Sander vitreus*	FM	FTMN	Fathead minnow	*Pimephales promelas*
	SAUG	Sauger	*Sander canadensis*	TP	TRPR	Trout-perch	*Percopsis omiscomaycus*
YP	YLPR	Yellow perch	*Perca flavescens*		IWDR	Iowa darter	*Etheostoma exile*

Sex and Maturity Descriptions

M	F	Class	Description
99		Immature A	Sex indeterminable due to small gonad size.
01	11	Immature B	Small gonad size; fish has never spawned and will not spawn during the coming spawning season.
02	12		Maturing but not ready to spawn; will spawn this year
06	16	Alternate	Small gonad size associated with large size; suggests alternate year spawner.
07	17	Gravid	Sexual organs fill cavity testes white, drops of milt fall with pressure; eggs completely round, some already translucent.
08	18	Ripe	Roe or milt are extruded by slight pressure on the belly.
09	19	Spent	Spawning completed; resorbtion of residual ovarian tissue is not yet complete.
10	20	External	Sex determined by external characteristics
97		Adult	Based on fish size; sex not determined.
98		Juvenile	Based on fish size; sex not determined.

Capture Method Codes

Code	Capture Method	Code	Capture Method
SL	Set line	ES	Boat electrofisher
DN	Dip net	EF	Backpack electrofisher
GN	Gill net	AL	Angling
BS	Beach seine	GE	Gee minnow trap
HN	Hoop net	RST	Rotary screw trap
TR	Trap		

Tag Codes

Code	Tag Code
Y, W, O	Color code for tag (Yellow, White, Orange)

Tag Type
PIT (Passive Integrated Transponder)
Radio (Radio transmitter tags)
Floy

Capture Codes

Code	Capture Code
0	First capture, released
1	First capture, mortality
2	Recapture, released
3	Recapture, mortality
5	Recapture, fin clip and lost tag

Age Structure Codes

Code	Age Structure	Code	Age Structure
SC	Scales	CL	Cleithra
OT	Otoliths	CS	Cleithra and scales
SO	Scales and otoliths	SF	Scales and fin rays
FR	Fin ray		

Identified to Family

BC/Alberta Label	Family
SU/SUCK	Catostomidae
CC/SCUL	Cottidae
MINN	Cyprinidae

Appendix – B4
Observed and Release-No-data Definitions

Small Fish Catch:	Count of small fish (≤ 200 mm fork length) caught and measured.
Total Catch:	Total count of fish caught and measured.
Adult Observed:	Adult fish (> 200 mm fork length) observed, but not caught.
Small Fish Observed:	Small fish observed, but not caught.
YOY Observed:	YOY (young-of-the-year) observed, but not caught.
All RND:	All age groups caught with (RND, released-no-data) no measurements taken.
Adult RND:	Adult fish caught with no measurements taken.
Small Fish RND:	Small fish caught with no measurements taken.
YOY RND:	YOY fish caught with no measurements taken.
Small Fish Number:	Count of small fish catch, small fish observed, YOY observed, small fish RND, and YOY RND.
Total Number:	Total count of all caught, observed and RND fish.

APPENDIX C
Water Quality Data

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Appendix C Table C1. Water quality information, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Site	Date	pH	Conductivity (µS/cm)	Clarity (cm)
HALFWAY RIVER						
	01					
		HBS1101	8/4/2010	8.23	424	210
		HBS1201	8/5/2010	7.77	427	210
		HBS1202	8/5/2010	7.95	423	210
		HBS1203	8/5/2010	7.76	428	210
		HEF1101	8/4/2010		414	210
		HEF1102	8/4/2010	8.10	446	210
		HEF1201	8/5/2010	8.12	430	210
		HEF1202	8/5/2010	7.93	423	210
		HEF1203	8/5/2010	8.22	422	210
		HEF1204	8/5/2010	8.10	417	210
		HEF1301	8/6/2010	8.23	421	210
		HEF1302	8/6/2010	8.18	423	210
		HEF1303	8/6/2010	8.10	428	210
		HSF0101	8/6/2010		413	
		HSF0103	8/6/2010		409	
		HSF0104	8/6/2010		406	
		HSF0106	8/6/2010		406	
		HSF0107	8/6/2010		411	
		HSF1101	8/4/2010	7.88	430	
		HSF1102	8/4/2010		410	
		HSF1103	8/4/2010		414	
		HSF1104	8/4/2010		412	
		HSF1201	8/5/2010		418	
		HSF1202	8/5/2010		418	
		HSF1203	8/5/2010		416	
		HSF1204	8/5/2010		415	
		HSF1205	8/5/2010		413	
		HSF1206	8/5/2010		412	
		HSF1207	8/5/2010		406	
	02					
		HBS0201	8/6/2010	7.72	445	210
		HEF0204	8/6/2010	7.68	470	210
		HEF0205	8/7/2010	8.17	426	210
		HEF1304	8/6/2010	8.17	419	210
		HEF1305	8/6/2010	8.17	420	210
		HSF0201	8/6/2010		408	
		HSF0202	8/6/2010		406	
		HSF0203	8/6/2010		412	
	03					
		HBS1401	8/7/2010	8.02	415	
		HEF1402	8/7/2010	8.09	388	210
		HEF1403	8/7/2010	7.92	451	210
		HEF1404	8/7/2010	8.16	399	210
		HEF1405	8/7/2010	7.81	406	210
		HSF0206	8/7/2010		397	
		HSF0301	8/7/2010		392	
		HSF0302	8/7/2010		392	

Appendix C Table C1. Water quality information, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Site	Date	pH	Conductivity (µS/cm)	Clarity (cm)
		HSF0303	8/7/2010		392	
		HSF0304	8/7/2010		394	
		HSF0305	8/7/2010		393	
		HSF0306	8/7/2010		392	
	04					
		HBS0402	8/8/2010	8.10	413	210
		HBS1501	8/8/2010	8.11	408	210
		HEF1501	8/8/2010	8.12	398	210
		HEF1502	8/8/2010	8.22	398	210
		HEF1503	8/8/2010	8.27	399	210
		HSF0401	8/8/2010		388	
		HSF0402	8/8/2010		389	
		HSF0403	8/8/2010		390	
		HSF0404	8/8/2010		389	
		HSF0405	8/8/2010		386	
		HSF0406	8/8/2010		384	
	05					
		HEF0506	8/9/2010	8.39	353	210
		HEF1504	8/9/2010	8.30	399	210
		HEF1505	8/9/2010	8.13	400	210
		HEF1506	8/9/2010	8.13	400	210
		HEF1507	8/9/2010	8.16	398	210
		HEF1508	8/9/2010	8.20	398	210
		HSF0501	8/9/2010		394	
		HSF0502	8/9/2010		391	
		HSF0503	8/9/2010		392	
		HSF0504	8/9/2010		390	
		HSF0505	8/9/2010		389	
		HSF0506	8/9/2010		389	
		HSF0507	8/9/2010		388	
	06					
		HBS1601	8/10/2010	7.63	422	210
		HEF0602	8/10/2010	7.96	399	210
		HEF0603	8/10/2010	8.05	402	210
		HEF0605	8/10/2010	7.97	424	210
		HEF1601	8/10/2010	7.84	395	210
		HSF0601	8/10/2010		390	
		HSF0602	8/10/2010		388	
		HSF0603	8/10/2010		390	
		HSF0605	8/10/2010		388	
		HSF0606	8/10/2010		391	
	07					
		HBS0701	8/10/2010	8.00	422	210
		HEF1602	8/10/2010	8.24	397	210
		HEF1701	8/11/2010	8.10	387	210
		HSF0701	8/10/2010		386	
		HSF0703	8/10/2010		398	
		HSF0705	8/11/2010		393	
	08					
		HBS0702	8/11/2010	8.09	410	26

Appendix C Table C1. Water quality information, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Site	Date	pH	Conductivity (µS/cm)	Clarity (cm)
		HBS1701	8/11/2010	8.08	436	
		HEF1702	8/11/2010	8.07	398	
		HEF1703	8/11/2010	7.95	413	145
		HEF1704	8/11/2010	8.01	403	
		HSF0706	8/11/2010		393	
		HSF0707	8/11/2010		393	
		HSF0802	8/11/2010		395	
		HSF0803	8/11/2010		394	
		HSF0804	8/11/2010		394	
		HSF0806	8/11/2010		383	
	09					
		HBS1901	8/12/2010	8.17	430	29
		HEF0901	8/12/2010	8.11	398	
		HEF0904	8/12/2010	8.32	385	
		HEF0905	8/12/2010	8.28	401	
		HEF1901	8/12/2010	7.65	444	85
		HEF1902	8/12/2010	8.01	420	
		HSF0901	8/12/2010		384	
		HSF0902	8/12/2010		390	
		HSF0903	8/12/2010		391	
		HSF0904	8/12/2010		391	
		HSF0905	8/12/2010		393	
		HSF0906	8/12/2010		391	
	10					
		HBS1902	8/12/2010	8.08	405	15
		HEF1003	8/13/2010	8.27	403	75
		HEF1005	8/13/2010	8.30	402	
		HEF1006	8/13/2010	8.38	402	
		HEF11001	8/13/2010	8.23	403	
		HEF11002	8/13/2010	8.19	405	
		HSF1001	8/13/2010		390	
		HSF1002	8/13/2010		391	
		HSF1003	8/13/2010		390	
		HSF1004	8/13/2010		392	
		HSF1005	8/13/2010		386	
		HSF1006	8/12/2010		387	
MOBERLY RIVER						
	01					
		MBS1101	8/7/2010	7.98	184	100
		MBS1102	8/8/2010	8.06	195	57
		MEF0101	8/7/2010	8.35	187	44
		MEF0102	8/7/2010	7.87	180	
		MEF1101	8/7/2010	7.80	189	100
	02					
		MBS0201	8/8/2010	7.97	184	27
		MBS0202	8/8/2010	7.91	188	
		MEF0201	8/8/2010	7.77	187	45
		MEF0202	8/8/2010	7.84	198	
		MEF0203	8/8/2010	7.94	193	25

Appendix C Table C1. Water quality information, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Site	Date	pH	Conductivity (µS/cm)	Clarity (cm)
		MEF0204	8/8/2010	7.93	182	210
	03					
		MBS0301	8/9/2010	7.85	187	210
		MBS1301	8/9/2010	7.94	193	210
		MEF0301	8/9/2010	8.00	190	210
		MEF0304	8/10/2010	8.18	192	210
		MEF1301	8/9/2010	7.86	190	210
		MEF1302	8/9/2010	8.05	190	210
	04					
		MBS0401	8/10/2010	8.02	195	100
		MBS0403	8/10/2010	8.34	189	100
		MEF0401	8/10/2010	8.09	188	210
		MEF0402	8/10/2010	8.25	197	210
		MEF1401	8/10/2010	8.09	190	210
		MEF1402	8/10/2010	8.09	199	210
	05					
		MEF0501	8/10/2010	8.11	198	210
		MEF0502	8/11/2010	8.18	196	210
		MEF1501	8/11/2010	8.33	191	210
		MEF1502	8/11/2010	8.41	197	210
		MEF1503	8/11/2010	8.41	200	210
	06					
		MBS1601	8/12/2010	8.17	201	210
		MEF0601	8/12/2010	8.30	205	210
		MEF0602	8/12/2010	8.00	198	210
		MEF1601	8/12/2010	8.23	200	210
		MEF1602	8/12/2010	8.16	195	40
	07					
		MEF1701	8/13/2010	8.14	191	210
		MEF1702	8/13/2010	7.49	261	210
		MEF1703	8/13/2010	8.36	176	210
		MEF1704	8/13/2010	8.11	222	210
		MEF1705	8/13/2010	8.11	240	210
	08					
		MEF0804	8/14/2010	7.88	267	210
		MEF1801	8/14/2010	8.31	256	210
		MEF1802	8/14/2010	8.36	251	210
		MEF1803	8/14/2010	8.17	266	210
		MEF1804	8/14/2010	8.30	262	210
		MEF1805	8/14/2010	8.38	259	210
		MEF1806	8/14/2010	8.29	257	210
	10					
		MEF1005	8/16/2010	7.74	560	210
		MEF11001	8/16/2010	8.23	275	210
		MEF11002	8/16/2010	8.31	277	210
		MEF11003	8/16/2010	8.31	273	210
		MEF11004	8/16/2010	8.33	286	100
		MEF11005	8/16/2010	8.15	284	210
		MEF1901	8/15/2010	8.15	437	210
		MEF1902	8/15/2010	8.06	485	210

Appendix C Table C1. Water quality information, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Site	Date	pH	Conductivity (µS/cm)	Clarity (cm)
		MEF1903	8/15/2010	8.33	259	210
		MEF1904	8/15/2010		278	210
		MEF1905	8/15/2010	8.44	245	210
		MEF1906	8/15/2010	8.31	275	210
	1A					
		MBS0001	8/6/2010	8.20	178	50
		MEF0001	8/6/2010	8.24	178	100
		MEF0002	8/6/2010	8.00	178	23
		MEF0003	8/6/2010	8.19	172	55

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APPENDIX D
Habitat Data

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Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody			Substrate (%)							D90			Cover (%)							Depth (m)			Velocity (m/s)		
Section	Site	Habitat	OM	Si	Sa	Gr	Co	Bo	Be	(cm)	Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Near	Mid	Far	Near	Mid	Far
HALFWAY RIVER																								
01																								
	HBS1101	BACKWATER	0	5	65	20	10	0	0	14	3	1	0	0	5	50	0	0	0.20	0.50	0.53	0.00	0.00	0.00
	HBS1201	BACKWATER	50	50	0	0	0	0	0				0	0	5	0	0	0	0.20	0.32	0.40	0.00	0.00	0.00
	HBS1202	SCFL	0	100	0	0	0	0	0				0	0	0	80	0	0	0.11	0.16	0.33	0.00	0.00	0.00
	HBS1203	BACKWATER	30	50	20	0	0	0	0				0	0	0	0	0	0	0.29	0.40	0.58	0.00	0.00	0.00
	HEF1101	POOL	20	0	20	0	60	0	0	18	3	2	0	30	15	5	0	0	0.35	0.72	0.43	0.00	0.00	0.00
	HEF1102	FLAT	0	0	50	10	35	5	0	20	3	2	0	20	0	0	0	0	0.20	0.27	0.34	0.00	0.00	0.00
	HEF1201	BACKWATER	0	0	10	35	25	30	0	30	1	3	0	30	0	0	0	0	0.28	0.30	0.31	0.00	0.00	0.00
	HEF1202	RUN	0	0	0	50	40	10	0	31	1	3	0	10	10	0	0	0	0.14	0.16	0.22	0.22	0.49	0.64
	HEF1203	RIFFLE	0	0	0	10	30	60	0	35	1	3	0	50	0	10	0	0	0.11	0.22	0.17	0.11	0.29	0.53
	HEF1204	RIFFLE	0	0	0	50	50	0	0	13	1	2	0	10	0	10	0	0	0.14	0.17	0.16	0.34	0.33	0.54
	HEF1301	FLAT	0	0	5	10	70	15	0	22	2	3	0	30	0	0	0	0	0.16	0.25	0.15	0.00	0.00	0.00
	HEF1302	FLAT	0	0	35	0	60	5	0	15	3	2	0	25	5	0	0	0	0.09	0.14	0.16	0.00	0.00	0.00
	HEF1303	RUN	0	0	10	70	20	0	0	15	2	1	0	20	5	5	0	0	0.13	0.29	0.24	0.14	0.19	0.08
02																								
	HBS0201	BACKWATER	20	50	0	0	30	0	0	14	3	2	0	0	0	0	0	0	0.28	0.40	0.31	0.00	0.00	0.00
	HEF0204	FLAT	0	0	20	30	40	10	0	23	3	2	0	30	0	0	0	0	0.10	0.40	0.15	0.00	0.00	0.00
	HEF0205	RUN	0	0	0	20	60	20	0	20	1	1	0	50	0	0	0	0	0.12	0.25	0.20	0.00	0.11	0.15
	HEF1304	FLAT	0	0	10	10	70	10	0	27	2	3	0	20	0	0	0	0	0.14	0.18	0.14	0.00	0.00	0.00
	HEF1305	RIFFLE	0	0	10	20	50	20	0	33	1	2	0	30	0	20	0	0	0.15	0.24	0.16	0.17	0.43	0.38
03																								
	HBS1401	BACKWATER	0	0	100	0	0	0	0				0	0	0	0	0	0	0.21	0.42	0.68	0.00	0.00	0.00

Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody			Substrate (%)							D90			Cover (%)							Depth (m)			Velocity (m/s)		
Section	Site	Habitat	OM	Si	Sa	Gr	Co	Bo	Be	(cm)	Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Near	Mid	Far	Near	Mid	Far
	HEF1402	POOL	0	0	65	5	30	0	0	13	3	2	0	5	0	0	0	0	0.10	0.20	0.25	0.00	0.00	0.00
	HEF1403	FLAT	70	0	0	0	20	10	0	29	3	2	0	5	0	10	0	0	0.22	0.18	0.08	0.00	0.00	0.00
	HEF1404	RIFFLE	5	0	0	10	75	10	0	28	1	1	0	5	0	10	0	0	0.13	0.16	0.15	0.03	0.42	0.36
	HEF1405	FLAT	10	0	40	10	40	0	0	9	2	2	0	5	5	0	0	0	0.08	0.15	0.25	0.00	0.00	0.00
04																								
	HBS0402	BACKWATER	0	0	100	0	0	0	0				0	0	0	20	0	0	0.08	0.11	0.21	0.00	0.00	0.00
	HBS1501	BACKWATER	0	0	100	0	0	0	0				0	0	5	15	0	0	0.20	0.37	0.44	0.00	0.00	0.00
	HEF1501	RIFFLE	0	0	0	0	80	20	0	25	1	2	0	30	0	0	0	0	0.16	0.17	0.14	0.14	0.28	0.59
	HEF1502	RUN	0	0	0	5	80	15	0	23	1	1	0	30	0	0	0	0	0.08	0.15	0.20	0.11	0.13	0.26
	HEF1503	RUN	0	0	0	80	20	0	0	13	1	3	0	10	0	0	0	0	0.17	0.12	0.13	0.22	0.26	0.29
05																								
	HEF0506	FLAT	0	0	30	55	10	5	0	28	3	2	0	0	0	40	0	0	0.06	0.10	0.08	0.00	0.00	0.00
	HEF1504	RIFFLE	0	0	0	50	50	0	0	20	1	3	0	5	0	0	0	0	0.13	0.17	0.15	0.27	0.48	0.16
	HEF1505	FLAT	0	0	20	40	40	0	0	16	2	2	0	0	50	0	0	0	0.08	0.11	0.18	0.08	0.14	0.01
	HEF1506	RIFFLE	0	0	0	30	50	20	0	23	1	2	5	0	20	5	0	0	0.16	0.20	0.25	0.45	0.80	0.52
	HEF1507	FLAT	0	0	0	70	30	0	0	17	2	2	0	20	0	0	0	0	0.26	0.27	0.24	0.04	0.13	0.20
	HEF1508	RUN	0	0	0	10	50	40	0	50	1	2	0	10	0	0	0	0	0.12	0.22	0.25	0.11	0.28	0.45
06																								
	HBS1601	BACKWATER	0	0	90	10	0	0	0				0	0	0	0	0	0	0.20	0.38	0.52	0.00	0.00	0.00
	HEF0602	RUN	0	0	0	80	20	0	0	16	2	2	0	10	0	0	0	0	0.04	0.08	0.08	0.08	0.38	0.31
	HEF0603	FLAT	0	0	20	40	40	0	0	20	2	2	0	10	0	0	0	0	0.16	0.14	0.17	0.00	0.00	0.00
	HEF0605	FLAT	0	0	20	40	40	0	0	15	3	2	0	10	0	0	0	0	0.20	0.31	0.34	0.00	0.00	0.00
	HEF1601	FLAT	0	0	40	20	40	0	0	21	3	2	0	0	0	0	0	0	0.08	0.21	0.25	0.00	0.00	0.00

Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody			Substrate (%)							D90			Cover (%)						Depth (m)			Velocity (m/s)		
Section	Site	Habitat	OM	Si	Sa	Gr	Co	Bo	Be	(cm)	Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Near	Mid	Far	Near	Mid	Far
07																								
	HBS0701	BACKWATER	0	0	100	0	0	0	0				0	0	0	0	0	0	0.20	0.40	0.31	0.00	0.00	0.00
	HEF1602	RIFFLE	0	0	0	80	20	0	0	13	2	2	0	0	0	0	0	0	0.03	0.07	0.08	0.30	0.11	0.32
	HEF1701	FLAT	0	0	50	40	5	5	0	17	3	2	0	0	5	0	0	0	0.11	0.28	0.33	0.00	0.00	0.00
08																								
	HBS0702	TCFL	0	0	0	95	5	0	0	14	3	1	0	0	0	0	0	0	0.11	0.26	0.21	0.00	0.07	0.05
	HBS1701	BACKWATER	5	0	95	0	0	0	0				0	0	0	10	0	0	0.10	0.22	0.20	0.00	0.00	0.00
	HEF1702	RIFFLE	0	0	0	60	40	0	0	15	2	2	0	0	0	0	0	0	0.11	0.11	0.11	0.33	0.49	0.35
	HEF1703	FLAT	0	0	30	50	20	0	0	19	3	2	0	0	0	0	0	0	0.14	0.28	0.33	0.00	0.00	0.00
	HEF1704	FLAT	0	0	0	0	100	0	0	12	1	2	0	10	0	0	0	0	0.17	0.27	0.32	0.00	0.00	0.00
09																								
	HBS1901	BACKWATER	0	100	0	0	0	0	0				0	0	0	10	0	0	0.38	0.42	0.48	0.00	0.00	0.00
	HEF0901	RUN	0	0	5	30	60	5	0	14	2	2	0	10	5	0	0	0	0.08	0.13	0.13	0.00	0.01	0.01
	HEF0904	FLAT	0	0	10	60	30	0	0	15	2	2	0	5	5	0	0	0	0.04	0.08	0.13	0.00	0.00	0.00
	HEF0905	BACKWATER	0	0	0	10	80	10	0	27	1	3	0	10	0	0	0	0	0.10	0.39	0.60	0.00	0.00	0.00
	HEF1901	BACKWATER	5	0	10	70	10	5	0	12	2	1	0	0	0	5	0	0	0.04	0.11	0.16	0.00	0.00	0.00
	HEF1902	FLAT	10	0	5	65	20	0	0	13	2	2	0	5	0	20	0	0	0.05	0.08	0.12	0.00	0.00	0.00
10																								
	HBS1902	BACKWATER	0	0	100	0	0	0	0				0	0	0	0	0	0	0.09	0.23	0.36	0.00	0.00	0.00
	HEF1003	FLAT	0	0	15	40	40	5	0	20	3	1	0	5	0	0	0	0	0.07	0.15	0.27	0.00	0.00	0.06
	HEF1005	RUN	0	0	0	30	50	20	0	36	2	2	0	30	0	0	0	0	0.17	0.18	0.18	0.00	0.05	0.19
	HEF1006	RUN	0	0	10	10	70	10	0	18	2	2	0	10	0	0	0	0	0.15	0.20	0.22	0.00	0.00	0.00
	HEF1100	RUN	0	0	10	40	40	10	0	18	3	2	0	10	0	0	0	0	0.10	0.20	0.24	0.00	0.03	0.05

Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Habitat	Substrate (%) OM	Si	Sa	Gr	Co	Bo	Be	D90 (cm)	Cover (%) Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Depth (m) Near	Mid	Far	Velocity (m/s) Near	Mid	Far
	HEF1100	BACKWATER	0	0	0	50	40	10	0	20	2	2	0	10	0	0	0	0	0.10	0.14	0.22	0.00	0.00	0.00
MOBERLY RIVER																								
01																								
	MBS110	FLAT	0	95	0	5	0	0	0				0	0	0	0	0	0	0.06	0.25	0.43	0.08	0.16	0.19
	MBS110	FLAT	0	5	15	80	0	0	0		2	1	0	10	0	5	0	0	0.25	0.43	0.57	0.18	0.16	0.27
	MEF010	BACKWATER	0	5	45	50	0	0	0				10	0	30	15	0	0	0.34	0.43	0.44	0.00	0.00	0.00
	MEF010	RUN	0	0	50	50	0	0	0		1	1	0	0	30	0	0	0	0.13	0.37	0.49	0.14	0.05	0.11
	MEF110	SC	0	85	5	10	0	0	0		3	2	5	0	20	5	0	0	0.06	0.16	0.20	0.00	0.00	0.00
02																								
	MBS020	FLAT	0	0	100	0	0	0	0				0	0	0	0	0	0	0.12	0.16	0.27	0.06	0.14	0.16
	MBS020	FLAT	10	30	60	0	0	0	0				0	0	5	0	0	0	0.24	0.34	0.75	0.01	0.00	0.04
	MEF020	FLAT	20	20	60	0	0	0	0				0	0	20	10	0	0	0.25	0.42	0.45	0.00	0.00	0.00
	MEF020	FLAT	10	10	80	0	0	0	0				0	0	10	5	0	0	0.14	0.30	0.46	0.00	0.00	0.10
	MEF020	RUN	0	0	5	0	80	15	0	41	2	3	0	90	0	0	0	0	0.19	0.19	0.25	0.00	0.06	0.10
	MEF020	RIFFLE	0	0	0	15	80	5	0	48	2	2	0	70	0	0	0	0	0.16	0.23	0.19	0.27	0.62	0.60
03																								
	MBS030	FLAT	0	0	0	90	10	0	0	7	2	2	0	5	0	0	0	0	0.10	0.19	0.23	0.03	0.28	0.30
	MBS130	FLAT	10	40	40	10	0	0	0				0	0	5	10	0	0	0.50	0.64	0.56	0.05	0.13	0.16
	MEF030	RIFFLE	0	0	0	30	70	0	0	20	1	2	0	30	0	0	0	0	0.20	0.23	0.13	0.65	0.84	0.66
	MEF030	RIFFLE	0	0	0	10	65	25	0	55	2	3	0	75	0	0	0	0	0.17	0.37	0.37	0.07	0.16	0.27
	MEF130	RIFFLE	0	0	0	5	90	5	0	25	1	1	0	20	35	0	0	0	0.13	0.17	0.21	0.12	0.40	0.52
	MEF130	FLAT	0	5	25	30	40	0	0	10	3	3	0	5	30	10	0	0	0.21	0.32	0.51	0.00	0.00	0.00

Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody			Substrate (%)							D90			Cover (%)							Depth (m)			Velocity (m/s)		
Section	Site	Habitat	OM	Si	Sa	Gr	Co	Bo	Be	(cm)	Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Near	Mid	Far	Near	Mid	Far
04																								
	MBS040	FLAT	15	10	75	0	0	0	0				0	0	5	20	0	0	0.25	0.46	0.47	0.00	0.09	0.11
	MBS040	SIDECHANNEL	30	60	10	0	0	0	0				0	0	0	50	0	0	0.23	0.25	0.21	0.00	0.00	0.00
	MEF040	FLAT	15	70	10	0	0	5	0	31	3	3	0	5	5	60	0	0	0.19	0.51	0.62	0.00	0.13	0.24
	MEF040	RIFFLE	0	0	10	10	70	10	0	31	2	3	0	75	0	0	0	0	0.10	0.24	0.23	0.00	0.16	0.29
	MEF140	FLAT	40	10	50	0	0	0	0				0	0	30	5	0	0	0.12	0.43	0.55	0.00	0.00	0.00
	MEF140	SC	0	40	40	20	0	0	0		2	2	5	0	60	5	0	0	0.21	0.25	0.33	0.00	0.00	0.11
05																								
	MEF050	RIFFLE	0	0	5	10	45	40	0	40	2	3	0	90	0	0	0	0	0.21	0.20	0.24	0.11	0.27	0.53
	MEF050	SCRF	0	0	15	30	50	5	0	19	3	3	0	15	30	0	0	0	0.16	0.18	0.15	0.10	0.31	0.39
	MEF150	RUN	0	0	5	25	40	30	0	31	3	3	0	35	0	0	0	0	0.62	0.76	0.68	0.24	0.17	0.27
	MEF150	SC	0	0	30	40	30	0	0	24	3	3	0	5	20	0	0	0	0.21	0.31	0.25	0.00	0.00	0.00
	MEF150	SC	0	0	20	70	10	0	0	20	2	1	0	10	0	0	0	0	0.09	0.09	0.08	0.07	0.18	0.09
06																								
	MBS160	FLAT	0	0	50	50	0	0	0		3	2	0	4	1	0	0	0	0.15	0.28	0.37	0.04	0.15	0.21
	MEF060	SCRF	0	0	10	70	20	0	0	19	2	1	0	15	0	0	0	0	0.05	0.12	0.13	0.00	0.07	0.12
	MEF060	RIFFLE	0	0	0	5	30	65	0	43	1	2	0	90	0	0	0	0	0.17	0.22	0.34	0.23	0.20	0.43
	MEF160	RUN	0	0	15	15	30	40	0		2	2	0	70	0	0	0	0	0.26	0.40	0.46	0.19	0.40	0.52
	MEF160	SC	0	40	40	20	0	0	0				0	0	15	0	0	0	0.04	0.34	0.26	0.00	0.00	0.00
07																								
	MEF170	SCRN	0	15	20	35	30	0	0		3	3	0	10	15	0	0	0	0.32	0.50	0.47	0.02	0.06	0.00
	MEF170	SCFL	0	70	20	10	0	0	0				5	0	15	0	0	0	0.24	0.31	0.17	0.00	0.01	0.00
	MEF170	SCRN	0	0	30	50	20	0	0	15	1	2	15	10	0	0	0	0	0.25	0.35	0.36	0.18	0.32	0.19

Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody			Substrate (%)							D90			Cover (%)							Depth (m)			Velocity (m/s)		
Section	Site	Habitat	OM	Si	Sa	Gr	Co	Bo	Be	(cm)	Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Near	Mid	Far	Near	Mid	Far
	MEF170	SCRF	0	0	5	55	40	0	0		1	1	0	10	0	40	0	0	0.06	0.07	0.06	0.67	0.62	0.33
	MEF170	SCRN	0	0	20	75	5	0	0	12	2	1	5	5	5	5	0	0	0.15	0.37	0.33	0.27	0.63	0.22
08																								
	MEF080	SCFL	0	60	15	20	5	0	0	18	3	3	5	5	0	0	0	0	0.12	0.15	0.10	0.00	0.01	0.00
	MEF180	SCRN	0	0	0	40	60	0	0	17	1	2	5	10	10	0	0	0	0.26	0.25	0.12	0.21	0.15	0.07
	MEF180	SCFL	0	35	35	15	15	0	0	13	3	2	40	0	40	0	0	0	0.34	0.57	0.67	0.03	0.08	0.00
	MEF180	RIFFLE	0	0	0	50	50	0	0	9	1	2	0	25	0	0	0	0	0.05	0.07	0.15	0.25	0.45	0.79
	MEF180	SCRN	0	10	10	40	40	0	0	16	2	3	10	5	15	0	0	0	0.61	0.26	0.26	0.00	0.53	0.53
	MEF180	SCRN	0	5	10	40	45	0	0	10	3	3	0	0	0	50	0	0	0.17	0.30	0.20	0.12	0.33	0.38
	MEF180	SCRN	0	10	20	30	30	10	0	41	3	3	30	30	30	0	0	0	0.17	0.21	0.20	0.13	0.21	0.14
10																								
	MEF100	SCFL	0	45	20	30	5	0	0	6	3	2	10	5	5	20	0	0	0.05	0.17	0.10	0.00	0.01	0.00
	MEF110	SCRF	0	0	0	35	60	5	0	26	1	2	5	50	5	0	0	0	0.15	0.21	0.21	0.38	0.29	0.43
	MEF110	SCRF	0	0	0	85	15	0	0	10	1	1	0	15	0	0	0	0	0.07	0.10	0.06	0.26	0.66	0.29
	MEF110	SCRF	0	0	0	50	50	0	0	16	1	2	15	45	0	0	0	0	0.10	0.18	0.18	0.30	0.43	0.56
	MEF110	SCRN	0	0	0	45	50	5	0	17	1	2	10	20	5	0	0	0	0.20	0.26	0.25	0.06	0.23	0.24
	MEF110	SCRN	0	20	20	40	20	0	0	23	3	2	10	25	5	0	0	0	0.58	0.61	0.41	0.06	0.11	0.00
	MEF190	SCFL	0	85	10	5	0	0	0				5	0	10	5	0	0	0.41	0.34	0.20	0.00	0.01	0.00
	MEF190	SCPL	0	60	10	30	0	0	0		3	3	5	0	5	20	0	0	0.07	0.34	0.30	0.00	0.00	0.01
	MEF190	SCRN	0	15	15	40	30	0	0	16	3	3	0	10	20	5	0	0	0.19	0.36	0.45	0.06	0.30	0.19
	MEF190	SCRN	0	0	0	68	30	2	0	22	2	2	5	15	0	0	0	0	0.22	0.35	0.22	0.21	0.59	0.34
	MEF190	SCPL	0	15	15	40	30	0	0	14	3	2	0	5	30	0	0	0	0.41	0.45	0.39	0.00	0.01	0.01
	MEF190	RIFFLE	0	0	0	25	70	5	0	20	1	2	0	60	0	0	0	0	0.14	0.13	0.17	0.86	0.94	0.99

Appendix D Table D1. Habitat characteristics information, 2010 Major Tributary Fish Inventory.

Waterbody			Substrate (%)							D90			Cover (%)							Depth (m)			Velocity (m/s)		
Section	Site	Habitat	OM	Si	Sa	Gr	Co	Bo	Be	(cm)	Emb.	Comp.	Ovh.	Rock	LOD	Subm.	Emer.	Algae	Near	Mid	Far	Near	Mid	Far
1A																								
	MBS000	BACKWATER	0	20	80	0	0	0	0				0	0	5	20	0	0	0.11	0.20	0.45	0.00	0.00	0.00
	MEF000	TCRF	0	0	0	10	80	10	0	22	2	1	0	60	0	0	0	0	0.10	0.15	0.22	0.03	0.18	0.36
	MEF000	SC	0	0	15	50	35	0	0	12	1	1	5	0	0	5	0	0	0.18	0.23	0.19	0.44	0.54	0.38
	MEF000	SC	85	0	0	0	10	5	0	7	2	2	0	5	80	10	0	0	0.20	0.35	0.55	0.00	0.00	0.00

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APPENDIX E
Fish Catch Data

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Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
HALFWAY RIVER											
01	HSF0101	8/6/2010	354	60	600	614					
							BT		3	3.33	8.33
							CCG	3	3	5.00	5.00
							GR	5	5	8.33	8.33
							LSU	1	2	1.67	3.33
							MW	9	12	58.33	63.33
							RB	2	3	3.33	5.00
01	HSF0103	8/6/2010	354	60	700	607					
							BT	3	6	5.71	10.00
							CCG	1	1	1.43	1.43
							GR	2	2	2.86	2.86
							LSU	2	2	2.86	2.86
							MW	12	18	44.29	52.86
							RB	1	2	1.43	2.86
01	HSF0104	8/6/2010	354	60	700	581					
							BT	2	5	4.29	8.57
							GR	3	5	4.29	7.14
							LSU		3	0.00	4.29
							MW	11	12	42.86	44.29
							RB		2	0.00	5.71
01	HSF0106	8/6/2010	354	60	500	331					
							CCG	1	1	2.00	2.00
							GR		1	0.00	2.00
							LSU		2	0.00	4.00
							MW	9	10	18.00	20.00
01	HSF0107	8/6/2010	354	60	340	340					
							BT		4	0.00	11.76
							GR	2	2	5.88	5.88
							LSU		1	0.00	2.94
							MW	4	5	11.76	14.71
							RB		1	0.00	2.94
01	HSF1101	8/4/2010	354	60	500	407					
							GR	2	2	4.00	4.00
							LNC	1	1	2.00	2.00
							LSU	2	6	20.00	28.00
							MW	11	14	22.00	28.00
01	HSF1102	8/4/2010	354	60	500	483					
							BT		1	0.00	2.00
							CCG	3	3	6.00	6.00
							GR	2	2	4.00	4.00
							LSU	2	4	4.00	8.00
							MW	8	11	52.00	58.00
							RB	1	1	2.00	2.00
01	HSF1103	8/4/2010	354	60	500	412					
							BT		1	0.00	2.00
							CCG	3	3	6.00	6.00
							GR	1	2	2.00	4.00
							LNC	2	2	4.00	4.00
							LSU	1	1	2.00	2.00

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							MW	11	13	58.00	62.00
01	HSF1104	8/4/2010	354	60	500	443					
							BT		2	6.00	12.00
							CCG	1	1	2.00	2.00
							GR	3	3	6.00	6.00
							LSU	5	5	10.00	10.00
							MW	10	14	38.00	46.00
							RB	1	2	8.00	10.00
01	HSF1201	8/5/2010	354	60	500	533					
							BT		1	0.00	4.00
							CCG	1	1	2.00	2.00
							GR	4	5	8.00	10.00
							LSU	5	6	10.00	12.00
							MW	9	10	110.00	112.00
							RB	2	2	4.00	4.00
01	HSF1202	8/5/2010	354	60	500	505					
							BT		1	0.00	2.00
							CCG	1	1	2.00	2.00
							GR	2	2	4.00	4.00
							LSU	7	7	14.00	14.00
							MW	12	12	58.00	58.00
01	HSF1203	8/5/2010	354	60	500	489					
							CCG	1	1	2.00	2.00
							GR	1	1	2.00	2.00
							LSU	3	4	6.00	8.00
							MW	7	14	40.00	54.00
01	HSF1204	8/5/2010	354	60	500	465					
							CCG	1	1	2.00	2.00
							GR	1	1	2.00	2.00
							LSU	4	5	8.00	10.00
							MW	13	14	26.00	28.00
01	HSF1205	8/5/2010	354	60	500	472					
							BT	1	2	2.00	4.00
							CCG	2	2	4.00	4.00
							GR	3	4	6.00	8.00
							LSU		1	0.00	2.00
							MW	4	10	50.00	62.00
01	HSF1206	8/5/2010	354	60	500	559					
							BT	2	6	4.00	12.00
							CCG	2	2	4.00	4.00
							GR	11	13	22.00	26.00
							LSU		2	0.00	4.00
							MW	11	13	70.00	74.00
							RB		1	0.00	2.00
01	HSF1207	8/5/2010	354	60	500	413					
							CCG	2	2	4.00	4.00
							GR	1	1	2.00	2.00
							LSU	1	3	2.00	6.00
							MW	8	10	36.00	40.00
							RB		1	0.00	2.00

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
02	HSF0201	8/6/2010	354	60	900	705					
							BT		4	1.11	5.56
							CCG	1	1	1.11	1.11
							CSU		1	0.00	1.11
							GR		1	0.00	1.11
							LSU	3	10	3.33	11.11
							MW	12	14	30.00	32.22
02	HSF0202	8/6/2010	354	60	900	670					
							BT	1	1	1.11	1.11
							LSU		5	0.00	5.56
							MW	8	12	18.89	23.33
							RB	1	4	1.11	4.44
02	HSF0203	8/6/2010	354	60	900	711					
							BB		1	0.00	1.11
							BT		2	0.00	2.22
							CCG	1	1	1.11	1.11
							CSU		1	0.00	1.11
							GR		1	1.11	2.22
							LSU		2	0.00	2.22
							MW	3	15	3.33	16.67
							RB	1	3	1.11	3.33
03	HSF0206	8/7/2010	354	60	900	738					
							BT	1	3	1.11	3.33
							CSU	1	1	1.11	1.11
							GR	2	2	2.22	2.22
							LSU	1	5	1.11	5.56
							MW	8	12	27.78	32.22
							RB	2	2	2.22	2.22
03	HSF0301	8/7/2010	354	60	1000	568					
							BT		6	0.00	6.00
							CCG	1	1	1.00	1.00
							GR	1	1	1.00	2.00
							LSU	1	1	1.00	1.00
							MW	7	10	29.00	32.00
							RB		1	0.00	1.00
03	HSF0302	8/7/2010	354	60	800	668					
							BT		1	0.00	1.25
							CCG	1	1	1.25	1.25
							GR	2	2	3.75	3.75
							LSU		1	0.00	1.25
							MW	7	15	48.75	58.75
							RSC	1	1	1.25	1.25
03	HSF0303	8/7/2010	354	60	900	618					
							GR	2	2	2.22	2.22
							LNC	1	1	1.11	1.11
							LSU		2	0.00	2.22
							MW	7	10	21.11	24.44
03	HSF0304	8/7/2010	354	60	1000	760					
							BT		2	0.00	2.00
							CCG	1	1	1.00	1.00

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							LNC	1	1	1.00	1.00
							LSU	1	1	1.00	1.00
							MW	7	10	14.00	17.00
							RB	1	2	1.00	2.00
03	HSF0305	8/7/2010	354	60	1000	771					
							BT		1	0.00	1.00
							GR	1	3	1.00	3.00
							LSU		2	0.00	2.00
							MW	9	10	15.00	19.00
							RB		2	1.00	3.00
03	HSF0306	8/7/2010	354	60	1000	652					
							BT		2	0.00	2.00
							GR		2	0.00	2.00
							LSU	2	2	2.00	2.00
							MW	10	13	18.00	21.00
							RB	1	3	1.00	3.00
04	HSF0401	8/8/2010	354	60	1000	774					
							CCG	3	3	3.00	3.00
							CSU		1	0.00	1.00
							GR	1	1	1.00	1.00
							LNC	2	2	2.00	2.00
							MW	8	10	18.00	20.00
							RB	1	1	1.00	1.00
04	HSF0402	8/8/2010	354	60	800	841					
							BT		1	0.00	1.25
							LKC	1	1	1.25	1.25
							LSU	2	2	2.50	2.50
							MW	10	12	12.50	15.00
							RB	1	1	1.25	1.25
04	HSF0403	8/8/2010	354	60	800	867					
							BT		2	0.00	2.50
							LNC	1	1	1.25	1.25
							LSU		1	0.00	1.25
							MW	8	14	10.00	17.50
04	HSF0404	8/8/2010	354	60	800	789					
							CCG	1	1	1.25	1.25
							GR	1	1	1.25	1.25
							LSU	2	3	2.50	3.75
							MW	11	15	30.00	35.00
							RB		2	0.00	2.50
04	HSF0405	8/8/2010	354	60	1000	797					
							BT	1	6	1.00	6.00
							GR	1	1	1.00	1.00
							LSU	2	9	2.00	9.00
							MW	10	14	18.00	22.00
							RB	4	6	4.00	6.00
04	HSF0406	8/8/2010	354	60	1000	625					
							BT	1	2	2.00	3.00
							GR	3	4	3.00	4.00
							MW	8	10	36.00	42.00

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							RB	1	1	1.00	1.00
05	HSF0501	8/9/2010	354	60	900	780					
							GR	1	2	1.11	2.22
							LNC	1	1	1.11	1.11
							MW	13	16	41.11	46.67
05	HSF0502	8/9/2010	354	60	950	677					
							BT		2	0.00	2.11
							CCG	1	1	1.05	1.05
							GR	1	2	1.05	2.11
							LNC	1	1	1.05	1.05
							MW	12	15	41.05	44.21
							RB	1	1	1.05	2.11
05	HSF0503	8/9/2010	354	60	900	588					
							CCG	1	1	1.11	1.11
							LNC	2	2	2.22	2.22
							MW	11	16	24.44	30.00
							RSC	1	1	1.11	1.11
05	HSF0504	8/9/2010	354	60	700	470					
							BT		1	0.00	1.43
							GR	1	1	1.43	1.43
							LSU	2	2	2.86	2.86
							MW	13	13	18.57	18.57
							RB		2	0.00	2.86
05	HSF0505	8/9/2010	354	60	500	259					
							GR	1	1	2.00	2.00
							MW	17	17	34.00	34.00
							RB		1	0.00	2.00
05	HSF0506	8/9/2010	354	60	550	328					
							LNC	1	1	1.82	1.82
							LSU	1	1	1.82	1.82
							MW	9	9	16.36	16.36
05	HSF0507	8/9/2010	354	60	950	694					
							BT		1	0.00	1.05
							CCG	4	4	4.21	4.21
							LNC	4	4	4.21	4.21
							LSU	3	3	3.16	3.16
							MW	8	12	20.00	24.21
							RB	2	3	2.11	5.26
06	HSF0601	8/10/2010	354	60	850	737					
							CCG	2	2	2.35	2.35
							GR	2	2	2.35	2.35
							LKC	1	1	1.18	1.18
							LNC	3	3	3.53	3.53
							LSU	2	2	2.35	2.35
							MW	10	10	49.41	49.41
							RB		1	0.00	2.35
							RSC	1	1	1.18	1.18
06	HSF0602	8/10/2010	354	60	950	655					
							BT		3	0.00	3.16
							GR	1	1	1.05	1.05

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							MW	11	13	16.84	18.95
06	HSF0603	8/10/2010	354	60	950	742					
							CCG	1	1	1.05	1.05
							LNC	3	3	3.16	3.16
							LSU	2	2	2.11	2.11
							MW	10	11	27.37	28.42
							RB		2	0.00	2.11
							RSC	1	1	1.05	1.05
06	HSF0605	8/10/2010	354	60	900	414					
							BT		2	1.11	3.33
							GR	1	1	1.11	1.11
							LNC	1	1	1.11	1.11
							LSU	1	1	1.11	1.11
							MW	10	11	54.44	55.56
							RB		1	0.00	1.11
06	HSF0606	8/10/2010	354	60	1000	714					
							CSU	1	1	1.00	1.00
							GR	1	1	1.00	1.00
							LNC	1	1	1.00	1.00
							LSU	1	2	1.00	2.00
							MW	11	11	11.00	11.00
							RB		2	0.00	2.00
							RSC	2	2	2.00	2.00
07	HSF0701	8/10/2010	354	60	800	533					
							BT		1	0.00	1.25
							GR	1	1	1.25	1.25
							LSU	4	4	5.00	5.00
							MW	16	16	20.00	20.00
							RSC	5	5	6.25	6.25
07	HSF0703	8/10/2010	354	60	800	650					
							BT		1	0.00	1.25
							CCG	1	1	1.25	1.25
							CSU	2	2	2.50	2.50
							GR	5	5	6.25	6.25
							LNC	3	3	3.75	3.75
							LSU	1	1	1.25	1.25
							MW	9	11	28.75	31.25
07	HSF0705	8/11/2010	354	60	850	780					
							CCG	5	5	5.88	5.88
							CRI	1	1	1.18	1.18
							CSU	1	1	1.18	1.18
							GR	1	1	32.94	32.94
							LNC	2	2	2.35	2.35
							LSU	7	7	8.24	8.24
							MW	11	11	12.94	12.94
							RSC	1	1	1.18	1.18
08	HSF0706	8/11/2010	354	60	800	532					
							CSU	1	1	1.25	1.25
							GR	3	3	3.75	3.75
							LNC	1	1	1.25	1.25

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							LSU	5	5	6.25	6.25
							MW	10	10	28.75	28.75
08	HSF0707	8/11/2010	354	60	800	637					
							BT	1	3	1.25	3.75
							GR	2	2	2.50	2.50
							LSU	8	8	10.00	10.00
							MW	13	13	16.25	16.25
							RSC	1	1	1.25	1.25
08	HSF0802	8/11/2010	354	60	950	799					
							CSU	3	4	3.16	4.21
							LNC	1	1	1.05	1.05
							LSU	11	11	11.58	11.58
							MW	10	10	25.26	25.26
							RSC	11	11	11.58	11.58
08	HSF0803	8/11/2010	354	60	850	861					
							CCG	2	2	2.35	2.35
							CSU	6	7	7.06	8.24
							LNC	4	4	4.71	4.71
							LSU	4	4	4.71	4.71
							MW	10	11	16.47	17.65
							NSC	1	1	1.18	1.18
							RSC	10	10	20.00	20.00
08	HSF0804	8/11/2010	354	60	850	742					
							CRI	1	1	1.18	1.18
							CSU	6	6	7.06	7.06
							LSU	7	7	8.24	8.24
							MW	9	9	16.47	16.47
							NSC	3	4	3.53	4.71
							RSC	8	8	9.41	9.41
08	HSF0806	8/11/2010	354	60	900	854					
							CSU	2	3	2.22	3.33
							GR	1	1	1.11	1.11
							LNC	3	3	3.33	3.33
							LSU	1	1	1.11	1.11
							MW	14	14	15.56	15.56
							NP		1	0.00	1.11
							RSC	8	8	8.89	8.89
09	HSF0901	8/12/2010	354	60	900	725					
							CCG	1	1	1.11	1.11
							CSU	13	13	18.89	18.89
							GR	1	1	1.11	1.11
							LKC	1	1	1.11	1.11
							LNC	3	3	3.33	3.33
							LSU	2	2	2.22	2.22
							MW	10	11	40.00	41.11
							NSC	4	4	4.44	4.44
							RSC	11	11	16.67	16.67
09	HSF0902	8/12/2010	354	60	870	777					
							BT		1	0.00	1.15
							CSU	9	10	13.79	14.94

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							LNC	2	2	2.30	2.30
							LSU	8	8	9.20	9.20
							MW	11	11	43.68	43.68
							NSC	7	7	9.20	9.20
							RSC	10	10	37.93	37.93
09	HSF0903	8/12/2010	354	60	950	830					
							BT		1	0.00	1.05
							CCG	1	1	1.05	1.05
							CSU	10	10	22.11	22.11
							KO		1	0.00	1.05
							LSU	10	11	22.11	23.16
							MW	8	11	21.05	24.21
							NP		1	0.00	1.05
							NSC	3	6	3.16	6.32
							RB		1	0.00	1.05
							RSC	10	10	16.84	16.84
09	HSF0904	8/12/2010	354	60	950	982					
							CCG	1	1	1.05	1.05
							CSU	5	6	5.26	6.32
							LSU	9	10	20.00	21.05
							MW	11	12	26.32	27.37
							NSC	3	4	3.16	4.21
							RSC	10	10	42.11	42.11
09	HSF0905	8/12/2010	354	60	950	665					
							CCG	2	2	2.11	2.11
							CSU	5	5	5.26	5.26
							LNC	4	4	4.21	4.21
							LSU	9	9	9.47	9.47
							MW	10	10	20.00	20.00
							NSC	3	4	3.16	4.21
							RSC	10	10	24.21	24.21
09	HSF0906	8/12/2010	354	60	1300	1035					
							CCG	3	3	2.31	2.31
							CSU	10	10	10.77	10.77
							LKC	2	2	1.54	1.54
							LNC	1	1	0.77	0.77
							LSU	9	10	9.23	10.00
							MW	10	10	23.85	23.85
							NSC	4	4	3.08	3.08
							RSC	11	11	49.23	49.23
10	HSF1001	8/13/2010	354	60	1000	850					
							BT	1	2	1.00	2.00
							CAS	1	1	1.00	1.00
							CCG	3	3	3.00	3.00
							CSU	10	10	17.00	17.00
							LKC	1	1	1.00	1.00
							LNC	5	5	5.00	5.00
							LSU	9	10	11.00	12.00
							MW	9	10	20.00	21.00
							NSC	3	3	3.00	3.00

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							RSC	2	2	2.00	2.00
10	HSF1002	8/13/2010	354	60	900	940					
							BT	1	1	1.11	1.11
							CCG	1	1	1.11	1.11
							CSU	9	10	31.11	32.22
							GR	1	1	1.11	1.11
							LKC	2	2	2.22	2.22
							LNC	1	1	1.11	1.11
							LSU	10	10	17.78	17.78
							MW	10	10	12.22	12.22
							NSC	3	3	3.33	3.33
							RSC	10	10	13.33	13.33
10	HSF1003	8/13/2010	354	60	850	886					
							CCG	4	4	4.71	4.71
							CSU	10	10	61.18	61.18
							LKC	1	1	1.18	1.18
							LNC	2	2	2.35	2.35
							LSU	8	10	12.94	15.29
							MW	9	9	15.29	15.29
							NSC	9	9	10.59	10.59
							RSC	12	12	38.82	38.82
							WP		1	0.00	1.18
10	HSF1004	8/13/2010	354	60	850	710					
							CSU	10	10	28.24	28.24
							LKC	1	1	1.18	1.18
							LNC	7	7	8.24	8.24
							LSU	9	10	12.94	14.12
							MW	10	10	24.71	24.71
							NSC	1	1	1.18	1.18
							RB	1	1	2.35	2.35
							RSC	10	10	17.65	17.65
10	HSF1005	8/13/2010	354	60	950	947					
							BB		1	0.00	1.05
							CCG	4	4	4.21	4.21
							CSU	10	10	33.68	33.68
							LNC	7	7	7.37	7.37
							LSU	10	11	16.84	17.89
							MW	10	10	17.89	17.89
							NSC	4	4	4.21	4.21
							RSC	10	10	28.42	28.42
10	HSF1006	8/12/2010	354	60	800	682					
							BB		2	0.00	2.50
							CCG	3	3	3.75	3.75
							CSU	11	12	32.50	33.75
							FHC	1	1	1.25	1.25
							GR	1	1	1.25	1.25
							LNC	5	5	6.25	6.25
							LSU	7	7	8.75	8.75
							MW	9	10	16.25	17.50
							NSC	5	5	6.25	6.25

Appendix E Table E1. Boat electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Total Catch	Small Fish CPUE (Fish/km)	All Fish CPUE (Fish/km)
							RSC	9	9	17.50	17.50

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
HALFWAY RIVER									
01	HEF1101	8/4/2010	250	60	110	348			
							CCG	4	3.64
							LSU	1	0.91
							MW	1	5.45
01	HEF1102	8/4/2010	250	60	100	263			
							CCG	6	6.00
							LKC	2	2.00
							LNC	10	620.00
							LSU	11	11.00
01	HEF1201	8/5/2010	250	60	100	408			
							CCG	2	2.00
							LKC	13	13.00
							LNC	12	22.00
							LSU	20	36.00
01	HEF1202	8/5/2010	250	60	100	291			
							BT	1	1.00
							CCG	9	9.00
							LNC	6	6.00
							MW	2	2.00
							RB	1	1.00
01	HEF1203	8/5/2010	250	60	100	374			
							CCG	10	10.00
							LNC	3	3.00
							MW	2	2.00
01	HEF1204	8/5/2010	250	60	100	286			
							CCG	12	12.00
							GR	1	1.00
							LNC	2	2.00
							MW	1	1.00
							RSC	1	1.00
01	HEF1301	8/6/2010	250	60	100	388			
							CCG	22	22.00
							LKC	1	1.00
							LNC	7	7.00
							LSU	22	22.00
							MW	1	1.00
01	HEF1302	8/6/2010	250	60	100	286			
							CCG	21	21.00
							LKC	5	5.00
							LNC	3	3.00
							LSU	5	5.00
01	HEF1303	8/6/2010	250	60	100	333			
							CCG	20	20.00
							LKC	10	10.00
							LNC	6	6.00
							LSU	11	11.00
02	HEF0204	8/6/2010	250	60	100	315			
							CCG	13	16.00
							LKC	12	17.00
							LNC	11	48.00

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							LSU	22	82.00
02	HEF0205	8/7/2010	250	60	100	488			
							CCG	28	28.00
							LKC	1	1.00
							LNC	7	7.00
							LSU	2	2.00
							MW	2	2.00
02	HEF1304	8/6/2010	250	60	100	260			
							CCG	7	7.00
							LKC	6	6.00
							LNC	3	3.00
							LSU	19	19.00
02	HEF1305	8/6/2010	250	60	100	293			
							CCG	2	2.00
							LNC	2	2.00
							LSU	2	2.00
							MW	2	3.00
03	HEF1402	8/7/2010	250	60	100	251			
							LNC	3	3.00
							LSU	8	8.00
03	HEF1403	8/7/2010	250	60	100	303			
							CCG	2	2.00
							LNC	16	16.00
							LSU	11	11.00
03	HEF1404	8/7/2010	250	60	100	198			
							CCG	14	14.00
							LNC	8	8.00
							LSU	13	13.00
03	HEF1405	8/7/2010	250	60	100	211			
							CCG	2	2.00
							LNC	2	2.00
							LSU	7	7.00
04	HEF1501	8/8/2010	250	60	100	245			
							CCG	2	2.00
							LNC	6	6.00
04	HEF1502	8/8/2010	250	60	100	279			
							CCG	17	17.00
							LSU	2	2.00
04	HEF1503	8/8/2010	250	60	100	239			
							CCG	2	2.00
							LNC	6	6.00
							LSU	3	3.00
05	HEF0506	8/9/2010	275	60	100	243			
							CSU	19	19.00
							LKC	10	26.00
							LNC	10	89.00
							LSU	13	46.00
							RSC	1	1.00
05	HEF1504	8/9/2010	250	60	75	383			
							CCG	8	24.00
							GR	2	2.67

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							LKC	4	5.33
							LNC	3	52.00
							LSU	3	26.67
							MW	1	1.33
05	HEF1505	8/9/2010	250	60	100	273			
							CCG	7	7.00
							LNC	3	3.00
							LSU	14	14.00
05	HEF1506	8/9/2010	250	60					
							CCG	4	4.00
							LNC	1	1.00
							LSU	2	2.00
							RB	2	2.00
05	HEF1507	8/9/2010	275	60	100	303			
							CCG	10	10.00
							LKC	3	3.00
							LNC	10	10.00
							LSU	24	24.00
							MW	11	11.00
							RSC	1	1.00
05	HEF1508	8/9/2010	250	60	100	303			
							CCG	1	1.00
							LSU	8	8.00
							RSC	1	1.00
06	HEF0602	8/10/2010	300	60	100	275			
							CCG	6	6.00
							CSU	2	2.00
							LKC	10	49.00
							LNC	9	9.00
							LSU	14	25.00
							MW	3	3.00
							RSC	1	1.00
06	HEF0603	8/10/2010	300	100	100	209			
							CCG	1	1.00
							CSU	3	3.00
							LKC	10	28.00
							LNC	3	3.00
							LSU	10	51.00
							MW	1	1.00
06	HEF0605	8/10/2010	300	100	100	197			
							CCG	6	6.00
							LNC	2	2.00
							LSU	4	4.00
							RSC	1	1.00
06	HEF1601	8/10/2010	275	60	100	273			
							CCG	1	1.00
							CSU	4	4.00
							LKC	4	4.00
							LNC	10	37.00
							LSU	20	27.00
							RSC	3	3.00

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
07	HEF1602	8/10/2010	300	100	75	151			
							CCG	1	1.33
							LKC	2	2.67
							LNC	2	2.67
							LSU	1	1.33
							MW	1	1.33
07	HEF1701	8/11/2010	300	60	100	220			
							LKC	1	1.00
							LNC	3	3.00
							LSU	3	3.00
							RSC	2	2.00
08	HEF1702	8/11/2010	300	60	100	223			
							CSU	5	5.00
							LKC	2	2.00
							LNC	4	4.00
							LSU	4	4.00
08	HEF1703	8/11/2010	300	60	75	172			
							CSU	14	120.00
							LKC	4	5.33
							LSU	2	2.67
							NSC	13	78.67
							RSC	6	8.00
08	HEF1704	8/11/2010	300	60	50	147			
							CSU	8	16.00
							LKC	5	10.00
							LSU	6	12.00
							NSC	1	2.00
							RSC	8	16.00
09	HEF0901	8/12/2010	250	60	100	352			
							CSU	10	23.00
							LKC	6	6.00
							LNC	11	15.00
							LSU	7	7.00
							NSC	2	2.00
							RSC	3	3.00
09	HEF0904	8/12/2010	250	60	100	359			
							CSU	12	14.00
							LKC	1	1.00
							LNC	10	30.00
							LSU	8	8.00
							NSC	3	3.00
							RSC	5	5.00
09	HEF0905	8/12/2010	250	60	100	284			
							CAS	1	1.00
							CCG	1	1.00
							CSU	12	12.00
							LNC	4	4.00
							LSU	2	2.00
							NSC	5	5.00
							RSC	10	21.00

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
09	HEF1901	8/12/2010	300	60	75	209			
							CSU	5	6.67
							LKC	1	1.33
							LNC	2	2.67
							LSU	1	1.33
09	HEF1902	8/12/2010	275	60	100	222			
							CCG	1	1.00
							CSU	7	7.00
							LKC	3	3.00
							LNC	5	5.00
							LSU	8	8.00
10	HEF1003	8/13/2010	250	60	100	289			
							CCG	1	1.00
							CSU	3	3.00
							LNC	10	16.00
							LSU	3	3.00
							RSC	1	1.00
10	HEF1005	8/13/2010	250	60	100	335			
							CCG	2	2.00
							CSU	2	2.00
							LNC	2	2.00
							LSU	2	2.00
							MW	4	4.00
							RSC	4	4.00
10	HEF1006	8/13/2010	275	80	100	266			
							CCG	1	1.00
							CSU	6	6.00
							LKC	10	17.00
							LNC	10	12.00
							LSU	6	6.00
							RSC	6	6.00
10	HEF11001	8/13/2010	250	80	100	301			
							CAS	1	1.00
							CCG	2	2.00
							CSU	4	4.00
							LNC	10	38.00
							LSU	3	3.00
							MW	1	1.00
							RSC	3	3.00
10	HEF11002	8/13/2010	250	60	100	212			
							CAS	3	3.00
							CSU	4	4.00
							LNC	5	5.00
							LSU	6	6.00
MOBERLY RIVER									
01	MEF0101	8/7/2010	400	60	50	266			
							BB	1	2.00
01	MEF0102	8/7/2010	400	60	50	147			
							BB	4	10.00
							CCG	2	4.00
							LKC	2	4.00

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							LNC	10	36.00
							LSU	11	22.00
							NP	1	2.00
							WSC	2	4.00
01	MEF1101	8/7/2010	400	60	100	257			
							BB	1	1.00
							LNC	11	11.00
							LSU	18	18.00
							NP	1	1.00
02	MEF0201	8/8/2010	400	60	110	262			
							LKC	1	0.91
							LNC	10	9.09
							LSU	3	2.73
02	MEF0202	8/8/2010	400	60	85	282			
							CCG	3	3.53
							LNC	8	11.76
							LSU	8	191.76
02	MEF0203	8/8/2010	500	60	50	357			
							BB	1	2.00
							CCG	5	10.00
							LNC	3	6.00
02	MEF0204	8/8/2010	500	60	100	347			
							BB	1	1.00
							CCG	11	11.00
							LNC	22	25.00
03	MEF0301	8/9/2010	500	60	100	316			
							CCG	11	11.00
							LNC	12	12.00
							LSU	3	3.00
03	MEF0304	8/10/2010	500	60	75	362			
							CCG	10	13.33
							LNC	10	13.33
							RSC	2	2.67
03	MEF1301	8/9/2010	500	60	50	320			
							BB	1	2.00
							CCG	5	10.00
							LNC	2	4.00
							LSU	1	2.00
03	MEF1302	8/9/2010	500	60	130	351			
							BB	2	1.54
							CCG	3	2.31
							RSC	10	7.69
04	MEF0401	8/10/2010	400	70	75	288			
							LNC	11	17.33
							LSU	1	1.33
							RSC	15	25.33
							WSC	3	4.00
04	MEF0402	8/10/2010	400	70	70	315			
							CCG	5	7.14
							LNC	14	37.14
							LSU	4	11.43

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							RSC	10	21.43
							WSC	10	14.29
04	MEF1401	8/10/2010	400	75	75	299			
							BB	1	1.33
							CCG	1	1.33
							RSC	12	16.00
							WSC	3	4.00
04	MEF1402	8/10/2010	400	75	50				
							BB	2	4.00
							CCG	10	20.00
							GR	1	2.00
							NP	1	2.00
							RSC	4	8.00
05	MEF0501	8/10/2010	500	70	75	363			
							BB	1	1.33
							CCG	12	16.00
							LNC	10	13.33
							LSU	7	9.33
							RSC	2	2.67
05	MEF0502	8/11/2010	500	70	110	298			
							BB	1	0.91
							CCG	6	5.45
							LNC	10	18.18
							LSU	8	7.27
							RSC	22	21.82
05	MEF1501	8/11/2010	400	60	75	388			
							BB		0.00
							CCG	10	13.33
							LNC	6	8.00
							RSC	2	2.67
05	MEF1502	8/11/2010	500	70	50	343			
							BB	2	4.00
							CCG	8	16.00
							LNC	3	6.00
							LSU	3	6.00
							NP	3	6.00
							RSC	3	6.00
05	MEF1503	8/11/2010	500	70	60	221			
							BB	1	1.67
							CCG	3	5.00
							GR	2	5.00
							LNC	11	63.33
							LSU	10	16.67
							RSC	4	6.67
06	MEF0601	8/12/2010	500	70	50	344			
							CCG	12	24.00
							LKC	1	2.00
							LNC	12	170.00
							LSU	7	14.00
							RSC	1	2.00
							WSC	5	10.00

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
06	MEF0602	8/12/2010	500	70	100	360			
							BB	2	3.00
							CCG	6	6.00
							LNC	12	24.00
							NP	1	1.00
06	MEF1601	8/12/2010	500	60	75	256			
							BB	2	2.67
							CCG	3	4.00
							LNC	12	16.00
							RSC	3	4.00
06	MEF1602	8/12/2010	400	60	75	204			
							BB	1	1.33
							LNC	7	9.33
							LSU	11	14.67
							RSC	5	6.67
							WSC	1	1.33
07	MEF1701	8/13/2010	500	60	50	431			
							BB	1	4.00
							CCG	1	2.00
							GR	3	10.00
							LNC	6	12.00
							LSU	9	18.00
							RSC	18	180.00
							TP	1	2.00
07	MEF1702	8/13/2010	500	70	100	338			
							CCG	6	6.00
							LSU	15	107.00
							NP	1	1.00
07	MEF1703	8/13/2010	500	70	30	221			
							CCG	4	13.33
							GR	3	20.00
							LNC	4	13.33
							LSU	1	3.33
							MW	4	36.67
							RSC	12	40.00
07	MEF1704	8/13/2010	500	70	75	213			
							CCG	3	4.00
							GR	6	8.00
							LNC	12	29.33
							LSU	8	10.67
							MW	3	6.67
07	MEF1705	8/13/2010	500	70	100	377			
							CCG	10	10.00
							GR	2	2.00
							LKC	1	1.00
							LNC	9	9.00
							LSU	9	9.00
							MW	2	2.00
							RSC	13	28.00
08	MEF0804	8/14/2010	500	70	75	208			
							CCG	2	2.67

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							LKC	13	18.67
							LNC	10	36.00
							LSU	19	269.33
							RSC	9	20.00
							WSC	3	4.00
08	MEF1801	8/14/2010	500	70	100	223			
							BB	1	1.00
							CCG	2	2.00
							GR	5	5.00
							LKC	10	13.00
							LNC	11	18.00
							LSU	7	7.00
							RSC	1	1.00
08	MEF1802	8/14/2010	500	70	75	401			
							CCG	1	1.33
							LKC	5	6.67
							LNC	10	32.00
							LSU	22	34.67
							RSC	9	29.33
							WSC	1	1.33
08	MEF1803	8/14/2010	500	70	50	278			
							GR	2	4.00
							LKC	3	6.00
							LNC	12	82.00
							LSU	4	8.00
							MW	2	4.00
08	MEF1804	8/14/2010	500	70	50	281			
							CCG	1	2.00
							LKC	3	6.00
							LNC	8	16.00
							LSU	2	4.00
							MW	1	2.00
							RSC	6	12.00
08	MEF1805	8/14/2010	500	70	80	269			
							CCG	7	8.75
							GR	2	2.50
							LNC	12	35.00
							LSU	11	13.75
							RSC	1	1.25
08	MEF1806	8/14/2010	500	70	100	270			
							BB	1	1.00
							CCG	1	1.00
							GR	2	2.00
							LKC	10	16.00
							LNC	11	19.00
							LSU	17	19.00
							MW	2	2.00
							RSC	8	8.00
10	MEF1005	8/16/2010	400	70	125	515			
							GR	7	5.60
							LKC	12	100.00

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							LNC	9	12.00
							LSU	11	240.80
							MW	7	5.60
							RSC	10	28.80
							WSC	13	10.40
10	MEF11001	8/16/2010	400	70	100	336			
							LKC	3	3.00
							LNC	11	20.00
							LSU	1	1.00
							RSC	8	8.00
10	MEF11002	8/16/2010	400	70	50	212			
							CCG	1	2.00
							GR	3	6.00
							LKC	7	14.00
							LNC	10	36.00
							LSU	7	14.00
							MW	1	2.00
10	MEF11003	8/16/2010	400	70	100	309			
							BB	5	5.00
							CCG	2	2.00
							GR	1	1.00
							LKC	1	1.00
							LNC	10	23.00
							LSU	8	8.00
							MW	2	2.00
							RSC	1	1.00
10	MEF11004	8/16/2010	400	70	100	376			
							LKC	4	4.00
							LNC	16	24.00
							LSU	10	10.00
							NSC	1	1.00
							RB	1	1.00
							RSC	9	9.00
10	MEF11005	8/16/2010	400	70	50	203			
							CAS	1	2.00
							LKC	1	2.00
							LNC	9	18.00
							LSU	1	2.00
							RSC	14	28.00
10	MEF1901	8/15/2010	400	70	60	213			
							LKC	5	8.33
							LSU	9	35.00
							RSC	10	25.00
							WSC	5	8.33
10	MEF1902	8/15/2010	300	70	50	203			
							CCG	3	6.00
							GR	1	2.00
							LSU	15	162.00
10	MEF1903	8/15/2010	400	70	90	305			
							CCG	1	1.11
							LKC	4	4.44

Appendix E Table E2. Backpack electrofisher effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Voltage	Freq. (Hz)	Effort (m)	Effort (s)	Species	Small Fish Catch	Small Fish CPUE (Fish/100m)
							LNC	11	21.11
							LSU	9	10.00
							NSC	2	2.22
							RSC	10	25.56
							WSC	2	2.22
10	MEF1904	8/15/2010	400	70	50	237			
							CCG	1	2.00
							LKC	1	2.00
							LNC	17	34.00
							LSU	1	2.00
							RSC	2	4.00
10	MEF1905	8/15/2010	500	70	80	328			
							BB	1	1.25
							LKC	2	2.50
							LNC	5	6.25
							LSU	2	2.50
							NSC	1	1.25
							RSC	23	53.75
10	MEF1906	8/15/2010	500	70	100	317			
							CCG	2	2.00
							LKC	1	1.00
							LNC	27	40.00
							RSC	3	3.00
							WSC	1	1.00
1A	MEF0001	8/6/2010	400	60	75	333			
							BB		0.00
							CCG	12	100.00
							LNC	10	17.33
							LSU	6	8.00
1A	MEF0002	8/6/2010	400	60	50	154			
							CCG	8	16.00
							LNC	5	10.00
							LSU	15	30.00
1A	MEF0003	8/6/2010	400	60	110	330			
							BB	2	1.82
							CCG	4	3.64
							LKC	2	1.82
							LSU	1	0.91
							NP	1	0.91

Appendix E Table E3. Beach seine effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Haul Dist. (m) 1	2	3	Effort $(m)^2$	Species	Small Fish Catch	Small Fish CPUE (Fish/100 m^2)
HALFWAY RIVER									
02	HBS0201	8/6/2010	25	25	25	300			
							CSU	8	2.67
							LKC	8	2.67
							LNC	10	7.33
							LSU	2	43.67
							MW	1	0.33
04	HBS0402	8/8/2010	25	25	25	300			
							LKC	13	27.00
							LNC	11	18.33
							LSU	32	83.33
							MW	1	0.33
							RSC	13	15.67
07	HBS0701	8/10/2010	25	25	25	300			
							CSU	10	3.33
							LNC	10	4.00
							RSC	9	3.00
08	HBS0702	8/11/2010	25	25	25	300			
							CSU	13	4.33
							LKC	3	1.00
							LNC	9	3.00
							LSU	2	0.67
							NSC	10	20.33
							RSC	7	2.33
							TP	1	0.33
01	HBS1101	8/4/2010	25	25	25	300			
							CCG	1	0.33
							LKC	11	16.00
							LNC	16	11.00
							LSU	11	83.67
01	HBS1201	8/5/2010	25	25	25	300			
							CCG	5	1.67
							LSU	12	38.00
01	HBS1202	8/5/2010	25	25	25	300			
							LKC	10	7.00
							LNC	2	0.67
							LSU	10	6.00
01	HBS1203	8/5/2010	25	25	25	300			
							CCG	9	3.00
							LKC	1	0.33
							LNC	11	8.00
							LSU	10	151.67
							MW	5	1.67
03	HBS1401	8/7/2010	25	20	25	300			
							CCG	1	0.36
							CSU	7	2.50
							LKC	8	11.07
							LNC	3	3.57
							LSU	33	54.29

Appendix E Table E3. Beach seine effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Haul Dist. (m) 1	2	3	Effort (m)^2	Species	Small Fish Catch	Small Fish CPUE (Fish/100 m)^2
04	HBS1501	8/8/2010	25	25	25	300			
							CCG	2	0.67
							CSU	27	29.67
							FHC	1	0.33
							LKC	4	1.33
							LNC	14	24.33
							LSU	13	14.33
							MW	1	0.33
							RSC	9	6.33
06	HBS1601	8/10/2010	25	25	25	300			
							CSU	10	3.33
							LNC	10	31.00
							LSU	1	44.33
							MW	1	0.33
08	HBS1701	8/11/2010	25	25	25	300			
							CSU	11	11.00
							LNC	2	1.33
							LSU	1	1.67
							MW	1	0.33
							NSC	4	1.67
							RSC	37	37.67
							TP	2	0.67
09	HBS1901	8/12/2010	25	25	25	300			
							CSU	14	12.33
							NSC	4	1.33
							RSC	10	84.33
10	HBS1902	8/12/2010	25	25	25	300			
							CSU	3	1.00
							LKC	1	0.33
							RSC	11	8.00
MOBERLY RIVER									
1A	MBS0001	8/6/2010	25			100			
							LKC	10	45.00
							LSU	10	10.00
02	MBS0201	8/8/2010	25	25	25	300			
							LKC	1	0.33
							LNC	2	0.67
							LSU	5	1.67
							TP	1	0.33
02	MBS0202	8/8/2010	25	25	25	300			
							LNC	9	3.00
							LSU	13	4.33
							NP		0.00
							RSC	10	3.33
							TP	1	0.33
03	MBS0301	8/9/2010	25	25	25	300			
							LNC	12	4.00
							LSU	1	0.33
							RSC	3	1.00

Appendix E Table E3. Beach seine effort, small fish catch (≤ 200 mm length), total catch, and catch-per-unit-effort, 2010 Major Tributary Fish Inventory.

Waterbody Section	Site	Date	Haul Dist. (m) 1	2	3	Effort $(m)^2$	Species	Small Fish Catch	Small Fish CPUE (Fish/100 $m)^2$
04	MBS0401	8/10/2010	25	25		200			
							RSC	18	38.50
							TP	1	0.50
							WSC	8	4.00
04	MBS0403	8/10/2010	25	25		200			
							CCG	1	0.50
							NP		0.00
							WSC	10	24.00
01	MBS1101	8/7/2010	25	25	25	300			
							CCG	1	0.33
							LKC	11	5.33
							LNC	10	22.00
							LSU	8	95.00
							RSC	2	0.67
							TP	5	1.67
							WSC	11	3.67
01	MBS1102	8/8/2010	25	25	25	300			
							LKC	10	67.00
							RSC	2	0.67
							WSC	10	3.33
03	MBS1301	8/9/2010	25	25	25	300			
							LSU	8	2.67
							RSC	5	1.67
06	MBS1601	8/12/2010	25	25	25	300			
							LNC	2	0.67
							LSU	10	15.33
							RSC	11	39.67

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Method	Site	Species	Observed YOY	Observed Juv	Observed Adult	RND YOY	RND Juv	RND Adult
HALFWAY RIVER										
	01									
		BACKPACK ELECTROFISH								
			HEF1101	MW	5	0	0	0	0	0
			HEF1102	LNC	0	600	0	0	10	0
			HEF1201	LNC	0	0	0	0	10	0
			HEF1201	LSU	0	0	0	2	14	0
		BEACH SEINE								
			HBS1101	LKC	0	0	0	0	37	0
			HBS1101	LNC	0	0	0	0	17	0
			HBS1101	LSU	0	0	0	240	0	0
			HBS1201	LSU	0	0	0	102	0	0
			HBS1202	LKC	0	0	0	0	11	0
			HBS1202	LSU	0	0	0	8	0	0
			HBS1203	LNC	0	0	0	0	13	0
			HBS1203	LSU	0	0	0	445	0	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0101	BT	0	1	0	0	1	0
			HSF0101	MW	0	0	0	0	26	0
			HSF0103	BT	0	1	0	0	0	0
			HSF0103	MW	0	0	0	0	19	0
			HSF0104	BT	0	1	0	0	0	0
			HSF0104	MW	0	0	0	0	19	0
			HSF0104	RB	0	0	2	0	0	0
			HSF1101	BT	0	0	3	0	0	0
			HSF1101	LSU	0	0	0	0	8	0
			HSF1102	MW	0	0	0	0	18	0
			HSF1103	MW	0	0	0	0	18	0
			HSF1104	BT	0	3	1	0	0	0
			HSF1104	MW	0	0	0	0	9	0
			HSF1104	RB	0	3	0	0	0	0
			HSF1201	BT	0	0	1	0	0	0
			HSF1201	MW	0	0	0	0	46	0
			HSF1202	MW	0	0	0	0	17	0
			HSF1203	MW	0	0	0	0	13	0
			HSF1205	MW	0	0	0	0	21	0
			HSF1206	MW	0	0	0	0	24	0
			HSF1207	MW	0	0	0	0	10	0
	02									
		BACKPACK ELECTROFISH								
			HEF0204	CCG	0	0	0	0	3	0
			HEF0204	LKC	0	0	0	0	5	0

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

					Observed			RND		
Waterbody	Section	Method	Site	Species	YOY	Juv	Adult	YOY	Juv	Adult
			HEF0204	LNC	0	0	0	0	37	0
			HEF0204	LSU	0	0	0	57	3	0
			HEF1305	MW	1	0	0	0	0	0
		BEACH SEINE								
			HBS0201	LNC	0	0	0	0	12	0
			HBS0201	LSU	0	0	0	129	0	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0201	BT	0	1	0	0	0	0
			HSF0201	MW	0	0	0	0	15	0
			HSF0202	GR	0	0	1	0	0	0
			HSF0202	MW	0	0	0	0	9	0
			HSF0203	GR	0	1	0	0	0	0
	03									
		BEACH SEINE								
			HBS1401	LKC	0	23	0	0	0	0
			HBS1401	LNC	0	7	0	0	0	0
			HBS1401	LSU	119	0	0	0	0	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0206	MW	0	0	0	0	17	0
			HSF0301	GR	0	0	1	0	0	0
			HSF0301	MW	0	0	0	0	22	0
			HSF0302	GR	0	1	0	0	0	0
			HSF0302	MW	0	0	0	0	32	0
			HSF0303	MW	0	0	0	0	12	0
			HSF0304	MW	0	0	0	0	7	0
			HSF0305	MW	0	0	0	0	6	3
			HSF0305	RB	0	1	0	0	0	0
			HSF0306	MW	0	0	0	0	8	0
	04									
		BEACH SEINE								
			HBS0402	LKC	0	0	0	0	68	0
			HBS0402	LNC	0	0	0	0	44	0
			HBS0402	LSU	0	0	0	212	6	0
			HBS0402	RSC	0	0	0	0	34	0
			HBS1501	CSU	62	0	0	0	0	0
			HBS1501	LNC	0	59	0	0	0	0
			HBS1501	LSU	30	0	0	0	0	0
			HBS1501	RSC	0	10	0	0	0	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0401	MW	0	0	0	0	10	0
			HSF0404	MW	0	0	0	0	13	0
			HSF0405	MW	0	0	0	0	8	0

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

					Observed			RND		
Waterbody	Section	Method	Site	Species	YOY	Juv	Adult	YOY	Juv	Adult
			HSF0406	BT	0	1	0	0	0	0
			HSF0406	MW	0	0	0	0	28	4
	05									
		BACKPACK ELECTROFISH								
			HEF0506	LKC	0	0	0	0	16	0
			HEF0506	LNC	0	0	0	0	79	0
			HEF0506	LSU	0	0	0	23	10	0
			HEF1504	CCG	0	0	0	0	10	0
			HEF1504	LNC	0	0	0	0	36	0
			HEF1504	LSU	0	0	0	14	3	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0501	MW	0	0	0	0	24	2
			HSF0501	RB	0	0	2	0	0	0
			HSF0502	MW	0	0	0	0	27	0
			HSF0502	RB	0	0	1	0	0	0
			HSF0503	MW	0	0	0	0	11	0
			HSF0507	MW	0	0	0	2	9	0
			HSF0507	RB	0	0	2	0	0	0
	06									
		BACKPACK ELECTROFISH								
			HEF0602	LKC	0	0	0	0	39	0
			HEF0602	LSU	0	0	0	0	11	0
			HEF0603	LKC	0	0	0	0	18	0
			HEF0603	LSU	0	0	0	0	41	0
			HEF1601	LNC	0	0	0	0	27	0
			HEF1601	LSU	0	0	0	0	7	0
		BEACH SEINE								
			HBS1601	LNC	0	0	0	0	83	0
			HBS1601	LSU	0	0	0	132	0	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0601	MW	0	0	0	14	18	0
			HSF0601	RB	0	0	1	0	0	0
			HSF0602	MW	0	0	0	0	5	0
			HSF0603	BT	0	1	0	0	0	0
			HSF0603	MW	0	0	0	12	4	0
			HSF0605	BT	0	1	0	0	0	0
			HSF0605	MW	0	0	0	20	19	0
	07									
		BEACH SEINE								
			HBS0701	LNC	0	0	0	0	2	0
			HBS0701	LSU	0	0	0	52	0	0
		SMALL FISH BOAT ELECTROFISH								

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Method	Site	Species	Observed			RND		
					YOY	Juv	Adult	YOY	Juv	Adult
			HSF0703	MW	0	0	0	10	4	0
			HSF0705	GR	0	0	0	22	5	0
	08									
		BACKPACK ELECTROFISH								
			HEF1703	CSU	0	0	0	0	76	0
			HEF1703	NSC	0	0	0	0	46	0
		BEACH SEINE								
			HBS0702	NSC	0	0	0	0	51	0
			HBS1701	CSU	0	22	0	0	0	0
			HBS1701	LNC	0	2	0	0	0	0
			HBS1701	LSU	0	4	0	0	0	0
			HBS1701	NSC	0	1	0	0	0	0
			HBS1701	RSC	0	76	0	0	0	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0706	MW	0	0	0	7	6	0
			HSF0802	MW	0	0	0	11	3	0
			HSF0803	MW	0	0	0	4	0	0
			HSF0803	RSC	0	0	0	0	7	0
			HSF0804	BT	0	0	1	0	0	0
			HSF0804	MW	0	0	0	0	5	0
	09									
		BACKPACK ELECTROFISH								
			HEF0901	CSU	0	0	0	0	13	0
			HEF0901	LNC	0	0	0	0	4	0
			HEF0904	CSU	0	0	0	0	2	0
			HEF0904	LNC	0	0	0	0	20	0
			HEF0905	RSC	0	0	0	0	11	0
		BEACH SEINE								
			HBS1901	CSU	0	0	0	0	23	0
			HBS1901	RSC	0	0	0	0	243	0
		SMALL FISH BOAT ELECTROFISH								
			HSF0901	CSU	0	0	0	0	4	0
			HSF0901	MW	0	0	0	18	8	0
			HSF0901	RSC	0	0	0	0	4	0
			HSF0902	CSU	0	0	0	0	3	0
			HSF0902	MW	0	0	0	20	7	0
			HSF0902	NSC	0	0	0	0	1	0
			HSF0902	RSC	0	0	0	0	23	0
			HSF0903	BB	0	0	1	0	0	0
			HSF0903	CSU	0	0	0	0	11	0
			HSF0903	LSU	0	0	0	0	11	0
			HSF0903	MW	0	0	0	5	7	0

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

					Observed			RND		
Waterbody	Section	Method	Site	Species	YOY	Juv	Adult	YOY	Juv	Adult
			HSF0903	RSC	0	0	0	0	6	0
			HSF0904	LSU	0	0	0	0	10	0
			HSF0904	MW	0	0	0	7	7	0
			HSF0904	RSC	0	0	0	0	30	0
			HSF0905	MW	0	0	0	5	4	0
			HSF0905	RSC	0	0	0	0	13	0
			HSF0906	CSU	0	0	0	0	4	0
			HSF0906	LSU	0	0	0	0	3	0
			HSF0906	MW	0	0	0	17	4	0
			HSF0906	RSC	0	0	0	0	53	0
	10									
		BACKPACK ELECTROFISH								
			HEF1003	LNC	0	0	0	0	6	0
			HEF1006	LKC	0	0	0	0	7	0
			HEF1006	LNC	0	0	0	0	2	0
			HEF1100	LNC	0	0	0	0	28	0
		BEACH SEINE								
			HBS1902	RSC	0	0	0	0	13	0
		SMALL FISH BOAT ELECTROFISH								
			HSF1001	CSU	0	0	0	0	7	0
			HSF1001	LSU	0	0	0	0	2	0
			HSF1001	MW	0	0	0	5	6	0
			HSF1002	CSU	0	0	0	0	19	0
			HSF1002	LSU	0	0	0	0	6	0
			HSF1002	MW	0	0	0	1	0	0
			HSF1002	RSC	0	0	0	0	2	0
			HSF1003	CSU	0	0	0	0	42	0
			HSF1003	LSU	0	0	0	0	3	0
			HSF1003	MW	0	0	0	2	2	0
			HSF1003	RSC	0	0	0	0	21	0
			HSF1004	BB	0	0	1	0	0	0
			HSF1004	CSU	0	0	0	0	14	0
			HSF1004	LSU	0	0	0	0	2	0
			HSF1004	MW	0	0	0	3	8	0
			HSF1004	RB	0	1	0	0	0	0
			HSF1004	RSC	0	0	0	0	5	0
			HSF1005	CSU	0	0	0	0	22	0
			HSF1005	LSU	0	0	0	0	6	0
			HSF1005	MW	0	0	0	5	2	0
			HSF1005	NP	0	0	1	0	0	0
			HSF1005	RSC	0	0	0	0	17	0
			HSF1006	CSU	0	0	0	0	15	0

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

					Observed			RND		
Waterbody	Section	Method	Site	Species	YOY	Juv	Adult	YOY	Juv	Adult
			HSF1006	MW	0	0	0	2	2	0
			HSF1006	RSC	0	0	0	0	5	0
MOBERLY RIVE										
	01									
		BACKPACK ELECTROFISH								
			MEF0101	NP	2	0	0	0	0	0
			MEF0102	BB	0	0	0	0	1	0
			MEF0102	LNC	0	0	0	0	8	0
		BEACH SEINE								
			MBS1101	BB	0	1	0	0	0	0
			MBS1101	LKC	0	0	0	0	5	0
			MBS1101	LNC	0	0	0	0	56	0
			MBS1101	LSU	0	0	0	277	0	0
			MBS1102	LKC	0	0	0	0	191	0
			MBS1102	LSU	0	0	0	3	0	0
	02									
		BACKPACK ELECTROFISH								
			MEF0201	GR	0	1	0	0	0	0
			MEF0202	LNC	0	0	0	0	2	0
			MEF0202	LSU	0	0	0	155	0	0
			MEF0204	LNC	0	0	0	0	3	0
	04									
		BACKPACK ELECTROFISH								
			MEF0401	LNC	0	0	0	0	2	0
			MEF0401	RSC	0	0	0	0	4	0
			MEF0402	LNC	0	0	0	0	12	0
			MEF0402	LSU	0	0	0	4	0	0
			MEF0402	RSC	0	0	0	0	5	0
		BEACH SEINE								
			MBS0401	RSC	0	0	0	0	59	0
			MBS0403	LSU	0	0	0	81	0	0
			MBS0403	WSC	0	0	0	38	0	0
	05									
		BACKPACK ELECTROFISH								
			MEF0501	MW	0	0	0	1	0	0
			MEF0502	LNC	0	0	0	0	10	0
			MEF0502	RSC	0	0	0	0	2	0
			MEF1503	GR	1	0	0	0	0	0
			MEF1503	LNC	0	0	0	0	27	0
	06									
		BACKPACK ELECTROFISH								
			MEF0601	LNC	0	0	0	0	73	0
			MEF0602	BB	0	1	0	0	0	0

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Method	Site	Species	Observed YOY	Observed Juv	Observed Adult	RND YOY	RND Juv	RND Adult
			MEF0602	LNC	0	0	0	0	12	0
		BEACH SEINE								
			MBS1601	LSU	0	0	0	0	36	0
			MBS1601	RSC	0	0	0	0	108	0
	07									
		BACKPACK ELECTROFISH								
			MEF1701	BB	0	1	0	0	0	0
			MEF1701	GR	2	0	0	0	0	0
			MEF1701	RSC	0	0	0	0	72	0
			MEF1702	GR	1	0	0	0	0	0
			MEF1702	LSU	0	1	0	91	0	0
			MEF1703	GR	3	0	0	0	0	0
			MEF1703	MW	7	0	0	0	0	0
			MEF1703	NP	0	1	0	0	0	0
			MEF1704	LNC	0	0	0	0	10	0
			MEF1704	MW	2	0	0	0	0	0
			MEF1705	RSC	0	0	0	0	15	0
	08									
		BACKPACK ELECTROFISH								
			MEF0804	LKC	0	0	0	0	1	0
			MEF0804	LNC	0	0	0	0	17	0
			MEF0804	LSU	0	0	0	173	10	0
			MEF0804	RSC	0	0	0	0	6	0
			MEF1801	LKC	0	0	0	0	3	0
			MEF1801	LNC	0	0	0	0	7	0
			MEF1802	LNC	0	0	0	0	14	0
			MEF1802	LSU	0	0	0	0	4	0
			MEF1802	RSC	0	0	0	0	13	0
			MEF1803	LNC	0	0	0	0	29	0
			MEF1805	LNC	0	0	0	0	16	0
			MEF1806	LKC	0	0	0	0	6	0
			MEF1806	LNC	0	0	0	0	8	0
			MEF1806	LSU	0	0	0	2	0	0
	10									
		BACKPACK ELECTROFISH								
			MEF1005	LKC	0	0	0	0	113	0
			MEF1005	LNC	0	0	0	0	6	0
			MEF1005	LSU	0	0	0	290	0	0
			MEF1005	RSC	0	0	0	0	26	0
			MEF1100	LNC	0	0	0	0	9	0
			MEF1100	LNC	0	0	0	0	8	0
			MEF1100	LNC	0	0	0	0	13	0

Appendix E Table E4. Numbers of fish observed and/or captured but released with no data that were used as part of the catch rate calculations, 2010 Major Tributary Fish Inventory.

Waterbody	Section	Method	Site	Species	Observed			RND		
					YOY	Juv	Adult	YOY	Juv	Adult
			MEF1100	LNC	0	0	0	0	8	0
			MEF1901	LSU	0	0	0	12	0	0
			MEF1901	RSC	0	0	0	0	5	0
			MEF1902	LSU	0	0	0	66	0	0
			MEF1903	LNC	0	0	0	0	8	0
			MEF1903	RSC	0	0	0	0	13	0
			MEF1905	RSC	0	0	0	0	20	0
			MEF1906	LNC	0	0	0	0	13	0
	1A									
		BACKPACK ELECTROFISH								
			MEF0001	CCG	0	0	0	0	63	0
			MEF0001	LNC	0	0	0	0	3	0
			MEF0001	MW	0	7	0	0	0	0
		BEACH SEINE								
			MBS0001	LKC	0	0	0	0	35	0

APPENDIX F
Fish Biological Data

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
01											
	HBS1101	619	LNC	22							
	HBS1101	620	LNC	17							
	HBS1101	621	LNC	27							
	HBS1101	622	LNC	22							
	HBS1101	623	LNC	22							
	HBS1101	624	LNC	27							
	HBS1101	625	LNC	17							
	HBS1101	626	LNC	18							
	HBS1101	627	LNC	22							
	HBS1101	628	LNC	23							
	HBS1101	629	LNC	19							
	HBS1101	630	LNC	24							
	HBS1101	631	LNC	23							
	HBS1101	632	LNC	24							
	HBS1101	633	LNC	47							
	HBS1101	634	LNC	49							
	HBS1101	1494	LSU	48							
	HBS1101	3476	LKC	32							
	HBS1101	3477	LKC	29							
	HBS1101	3478	LKC	29							
	HBS1101	3479	LKC	24							
	HBS1101	3480	LKC	26							
	HBS1101	3481	LKC	31							
	HBS1101	3482	LKC	24							
	HBS1101	3483	LKC	21							
	HBS1101	3484	LKC	20							
	HBS1101	3485	LKC	35							
	HBS1101	3486	LKC	53							
	HBS1101	4171	CCG	22							
	HBS1101	4743	LSU	28							
	HBS1101	4744	LSU	24							
	HBS1101	4745	LSU	27							
	HBS1101	4746	LSU	28							
	HBS1101	4747	LSU	25							
	HBS1101	4748	LSU	26							
	HBS1101	4749	LSU	27							
	HBS1101	4750	LSU	24							
	HBS1101	4751	LSU	22							
	HBS1101	4752	LSU	26							
	HBS1201	1495	LSU	48							
	HBS1201	1496	LSU	54							
	HBS1201	4172	CCG	27							
	HBS1201	4173	CCG	27							
	HBS1201	4174	CCG	22							
	HBS1201	4175	CCG	24							
	HBS1201	4176	CCG	23							
	HBS1201	4753	LSU	25							
	HBS1201	4754	LSU	24							
	HBS1201	4755	LSU	22							
	HBS1201	4756	LSU	23							
	HBS1201	4757	LSU	24							
	HBS1201	4758	LSU	19							
	HBS1201	4759	LSU	22							
	HBS1201	4760	LSU	23							
	HBS1201	4761	LSU	22							
	HBS1201	4762	LSU	20							
	HBS1202	300	LKC	28							
	HBS1202	301	LKC	25							
	HBS1202	302	LKC	25							
	HBS1202	303	LKC	28							
	HBS1202	304	LKC	30							
	HBS1202	305	LKC	23							
	HBS1202	306	LKC	26							
	HBS1202	307	LKC	36							
	HBS1202	308	LKC	27							
	HBS1202	309	LKC	23							
	HBS1202	635	LNC	27							
	HBS1202	636	LNC	25							
	HBS1202	4763	LSU	24							
	HBS1202	4764	LSU	22							
	HBS1202	4765	LSU	21							
	HBS1202	4766	LSU	23							
	HBS1202	4767	LSU	20							
	HBS1202	4768	LSU	21							
	HBS1202	4769	LSU	19							
	HBS1202	4770	LSU	17							
	HBS1202	4771	LSU	21							
	HBS1202	4772	LSU	22							
	HBS1203	310	LKC	64							
	HBS1203	637	LNC	20							
	HBS1203	638	LNC	19							
	HBS1203	639	LNC	20							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS1203	640	LNC	18							
	HBS1203	641	LNC	23							
	HBS1203	642	LNC	18							
	HBS1203	643	LNC	19							
	HBS1203	644	LNC	19							
	HBS1203	645	LNC	23							
	HBS1203	646	LNC	27							
	HBS1203	647	LNC	18							
	HBS1203	2485	MW	53							
	HBS1203	2486	MW	56							
	HBS1203	2487	MW	54							
	HBS1203	2488	MW	53							
	HBS1203	2489	MW	62							
	HBS1203	4177	CCG	27							
	HBS1203	4178	CCG	24							
	HBS1203	4179	CCG	23							
	HBS1203	4180	CCG	23							
	HBS1203	4181	CCG	23							
	HBS1203	4182	CCG	19							
	HBS1203	4183	CCG	22							
	HBS1203	4184	CCG	23							
	HBS1203	4185	CCG	20							
	HBS1203	4773	LSU	21							
	HBS1203	4774	LSU	22							
	HBS1203	4775	LSU	26							
	HBS1203	4776	LSU	21							
	HBS1203	4777	LSU	25							
	HBS1203	4778	LSU	27							
	HBS1203	4779	LSU	24							
	HBS1203	4780	LSU	21							
	HBS1203	4781	LSU	22							
	HBS1203	4782	LSU	25							
	HEF1101	1586	LSU	81							
	HEF1101	2504	MW	56							
	HEF1101	4314	CCG	85							
	HEF1101	4315	CCG	87							
	HEF1101	4316	CCG	78							
	HEF1101	4317	CCG	78							
	HEF1102	781	LNC	18							
	HEF1102	782	LNC	53							
	HEF1102	783	LNC	22							
	HEF1102	784	LNC	21							
	HEF1102	785	LNC	47							
	HEF1102	786	LNC	21							
	HEF1102	787	LNC	22							
	HEF1102	788	LNC	42							
	HEF1102	789	LNC	24							
	HEF1102	790	LNC	43							
	HEF1102	1587	LSU	48							
	HEF1102	1588	LSU	126							
	HEF1102	1589	LSU	131							
	HEF1102	1590	LSU	129							
	HEF1102	1591	LSU	89							
	HEF1102	1592	LSU	76							
	HEF1102	1593	LSU	47							
	HEF1102	1594	LSU	71							
	HEF1102	1595	LSU	65							
	HEF1102	1596	LSU	66							
	HEF1102	1597	LSU	102							
	HEF1102	3487	LKC	68							
	HEF1102	3488	LKC	56							
	HEF1102	4201	CCG	22							
	HEF1102	4318	CCG	69							
	HEF1102	4319	CCG	53							
	HEF1102	4320	CCG	48							
	HEF1102	4321	CCG	69							
	HEF1102	4322	CCG	54							
	HEF1201	384	LKC	48							
	HEF1201	385	LKC	49							
	HEF1201	386	LKC	69							
	HEF1201	387	LKC	55							
	HEF1201	388	LKC	59							
	HEF1201	389	LKC	67							
	HEF1201	390	LKC	55							
	HEF1201	391	LKC	54							
	HEF1201	392	LKC	57							
	HEF1201	393	LKC	54							
	HEF1201	394	LKC	51							
	HEF1201	791	LNC	46							
	HEF1201	792	LNC	16							
	HEF1201	793	LNC	46							
	HEF1201	794	LNC	21							
	HEF1201	795	LNC	19							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1201	796	LNC	22							
	HEF1201	797	LNC	21							
	HEF1201	798	LNC	45							
	HEF1201	799	LNC	46							
	HEF1201	800	LNC	43							
	HEF1201	801	LNC	26							
	HEF1201	802	LNC	71							
	HEF1201	1598	LSU	66							
	HEF1201	1599	LSU	32							
	HEF1201	1600	LSU	62							
	HEF1201	1601	LSU	98							
	HEF1201	1602	LSU	98							
	HEF1201	1603	LSU	102							
	HEF1201	1604	LSU	65							
	HEF1201	1605	LSU	56							
	HEF1201	1606	LSU	54							
	HEF1201	1607	LSU	74							
	HEF1201	3489	LKC	59							
	HEF1201	3490	LKC	17							
	HEF1201	4202	CCG	27							
	HEF1201	4203	CCG	24							
	HEF1201	4893	LSU	24							
	HEF1201	4894	LSU	27							
	HEF1201	4895	LSU	24							
	HEF1201	4896	LSU	27							
	HEF1201	4897	LSU	26							
	HEF1201	4898	LSU	26							
	HEF1201	4899	LSU	17							
	HEF1201	4900	LSU	25							
	HEF1201	4901	LSU	23							
	HEF1201	4902	LSU	28							
	HEF1202	143	BT	165			SC				
	HEF1202	803	LNC	43							
	HEF1202	804	LNC	53							
	HEF1202	805	LNC	69							
	HEF1202	806	LNC	55							
	HEF1202	807	LNC	68							
	HEF1202	808	LNC	70							
	HEF1202	2505	MW	72							
	HEF1202	2506	MW	52							
	HEF1202	4109	RB	154			SC				
	HEF1202	4204	CCG	23							
	HEF1202	4205	CCG	24							
	HEF1202	4323	CCG	85							
	HEF1202	4324	CCG	87							
	HEF1202	4325	CCG	70							
	HEF1202	4326	CCG	87							
	HEF1202	4327	CCG	75							
	HEF1202	4328	CCG	78							
	HEF1202	4329	CCG	69							
	HEF1203	809	LNC	43							
	HEF1203	810	LNC	24							
	HEF1203	811	LNC	63							
	HEF1203	2507	MW	64							
	HEF1203	2508	MW	48							
	HEF1203	4206	CCG	24							
	HEF1203	4330	CCG	52							
	HEF1203	4331	CCG	58							
	HEF1203	4332	CCG	59							
	HEF1203	4333	CCG	58							
	HEF1203	4334	CCG	53							
	HEF1203	4335	CCG	56							
	HEF1203	4336	CCG	53							
	HEF1203	4337	CCG	60							
	HEF1203	4338	CCG	84							
	HEF1204	1	GR	60			SC				
	HEF1204	812	LNC	70							
	HEF1204	813	LNC	69							
	HEF1204	2509	MW	68							
	HEF1204	3629	RSC	83							
	HEF1204	4207	CCG	30							
	HEF1204	4339	CCG	82							
	HEF1204	4340	CCG	80							
	HEF1204	4341	CCG	61							
	HEF1204	4342	CCG	61							
	HEF1204	4343	CCG	67							
	HEF1204	4344	CCG	77							
	HEF1204	4345	CCG	52							
	HEF1204	4346	CCG	65							
	HEF1204	4347	CCG	52							
	HEF1204	4348	CCG	63							
	HEF1204	4349	CCG	54							
	HEF1301	395	LKC	70							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1301	814	LNC	46							
	HEF1301	815	LNC	23							
	HEF1301	816	LNC	18							
	HEF1301	817	LNC	47							
	HEF1301	818	LNC	43							
	HEF1301	819	LNC	44							
	HEF1301	820	LNC	47							
	HEF1301	1608	LSU	67							
	HEF1301	1609	LSU	53							
	HEF1301	1610	LSU	54							
	HEF1301	1611	LSU	54							
	HEF1301	1612	LSU	70							
	HEF1301	1613	LSU	58							
	HEF1301	1614	LSU	60							
	HEF1301	1615	LSU	67							
	HEF1301	1616	LSU	52							
	HEF1301	1617	LSU	61							
	HEF1301	1618	LSU	68							
	HEF1301	1619	LSU	77							
	HEF1301	1620	LSU	77							
	HEF1301	2510	MW	48							
	HEF1301	4208	CCG	27							
	HEF1301	4209	CCG	26							
	HEF1301	4210	CCG	25							
	HEF1301	4211	CCG	26							
	HEF1301	4212	CCG	30							
	HEF1301	4213	CCG	27							
	HEF1301	4214	CCG	25							
	HEF1301	4215	CCG	33							
	HEF1301	4216	CCG	30							
	HEF1301	4217	CCG	27							
	HEF1301	4218	CCG	25							
	HEF1301	4219	CCG	29							
	HEF1301	4220	CCG	26							
	HEF1301	4221	CCG	24							
	HEF1301	4350	CCG	67							
	HEF1301	4351	CCG	75							
	HEF1301	4352	CCG	80							
	HEF1301	4353	CCG	75							
	HEF1301	4354	CCG	56							
	HEF1301	4355	CCG	52							
	HEF1301	4356	CCG	79							
	HEF1301	4357	CCG	82							
	HEF1301	4903	LSU	24							
	HEF1301	4904	LSU	26							
	HEF1301	4905	LSU	21							
	HEF1301	4906	LSU	22							
	HEF1301	4907	LSU	27							
	HEF1301	4908	LSU	27							
	HEF1301	4909	LSU	23							
	HEF1301	4910	LSU	21							
	HEF1301	4911	LSU	22							
	HEF1302	396	LKC	54							
	HEF1302	397	LKC	78							
	HEF1302	398	LKC	59							
	HEF1302	399	LKC	55							
	HEF1302	400	LKC	63							
	HEF1302	821	LNC	29							
	HEF1302	822	LNC	17							
	HEF1302	823	LNC	54							
	HEF1302	1621	LSU	131							
	HEF1302	1622	LSU	101							
	HEF1302	1623	LSU	57							
	HEF1302	1624	LSU	65							
	HEF1302	4222	CCG	26							
	HEF1302	4223	CCG	22							
	HEF1302	4224	CCG	26							
	HEF1302	4225	CCG	23							
	HEF1302	4226	CCG	27							
	HEF1302	4227	CCG	28							
	HEF1302	4228	CCG	24							
	HEF1302	4229	CCG	25							
	HEF1302	4230	CCG	22							
	HEF1302	4231	CCG	22							
	HEF1302	4232	CCG	25							
	HEF1302	4233	CCG	28							
	HEF1302	4234	CCG	23							
	HEF1302	4235	CCG	29							
	HEF1302	4358	CCG	78							
	HEF1302	4359	CCG	79							
	HEF1302	4360	CCG	80							
	HEF1302	4361	CCG	83							
	HEF1302	4362	CCG	89							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1302	4363	CCG	73							
	HEF1302	4364	CCG	81							
	HEF1302	4912	LSU	24							
	HEF1303	401	LKC	53							
	HEF1303	402	LKC	81							
	HEF1303	403	LKC	72							
	HEF1303	404	LKC	48							
	HEF1303	405	LKC	73							
	HEF1303	406	LKC	63							
	HEF1303	407	LKC	62							
	HEF1303	408	LKC	76							
	HEF1303	409	LKC	70							
	HEF1303	410	LKC	88							
	HEF1303	824	LNC	44							
	HEF1303	825	LNC	22							
	HEF1303	826	LNC	43							
	HEF1303	827	LNC	44							
	HEF1303	828	LNC	69							
	HEF1303	829	LNC	58							
	HEF1303	1625	LSU	100							
	HEF1303	1626	LSU	42							
	HEF1303	1627	LSU	108							
	HEF1303	1628	LSU	65							
	HEF1303	1629	LSU	72							
	HEF1303	1630	LSU	66							
	HEF1303	1631	LSU	48							
	HEF1303	1632	LSU	103							
	HEF1303	1633	LSU	78							
	HEF1303	1634	LSU	80							
	HEF1303	1635	LSU	86							
	HEF1303	4236	CCG	25							
	HEF1303	4237	CCG	23							
	HEF1303	4238	CCG	21							
	HEF1303	4239	CCG	33							
	HEF1303	4240	CCG	24							
	HEF1303	4241	CCG	22							
	HEF1303	4242	CCG	24							
	HEF1303	4243	CCG	24							
	HEF1303	4365	CCG	78							
	HEF1303	4366	CCG	94							
	HEF1303	4367	CCG	80							
	HEF1303	4368	CCG	61							
	HEF1303	4369	CCG	52							
	HEF1303	4370	CCG	84							
	HEF1303	4371	CCG	57							
	HEF1303	4372	CCG	59							
	HEF1303	4373	CCG	57							
	HEF1303	4374	CCG	83							
	HEF1303	4375	CCG	57							
	HEF1303	4376	CCG	63							
	HSF0101	4	GR	148			SC				
	HSF0101	5	GR	128							
	HSF0101	6	GR	138							
	HSF0101	7	GR	142							
	HSF0101	8	GR	188			OT				
	HSF0101	144	BT	291							
	HSF0101	145	BT	253							
	HSF0101	146	BT	249			SC				
	HSF0101	1743	LSU	264							
	HSF0101	1744	LSU	132							
	HSF0101	2526	MW	310		12	OT				
	HSF0101	2527	MW	130							
	HSF0101	2528	MW	229							
	HSF0101	2529	MW	114							
	HSF0101	2530	MW	121							
	HSF0101	2531	MW	124							
	HSF0101	2532	MW	249							
	HSF0101	2533	MW	131							
	HSF0101	2534	MW	124							
	HSF0101	2535	MW	74							
	HSF0101	2536	MW	126							
	HSF0101	2537	MW	64							
	HSF0101	4112	RB	203			SC				
	HSF0101	4113	RB	132			SC				
	HSF0101	4114	RB	138							
	HSF0101	4441	CCG	85							
	HSF0101	4442	CCG	78							
	HSF0101	4443	CCG	57							
	HSF0103	9	GR	149							
	HSF0103	10	GR	141							
	HSF0103	147	BT	293			FR				
	HSF0103	148	BT	352			FR				
	HSF0103	149	BT	210			SC				

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0103	150	BT	165			SC				
	HSF0103	151	BT	143			SC				
	HSF0103	152	BT	144							
	HSF0103	1745	LSU	130							
	HSF0103	1746	LSU	129							
	HSF0103	2538	MW	290							
	HSF0103	2539	MW	298							
	HSF0103	2540	MW	275							
	HSF0103	2541	MW	248		2	OT				
	HSF0103	2542	MW	135							
	HSF0103	2543	MW	122							
	HSF0103	2544	MW	124							
	HSF0103	2545	MW	123							
	HSF0103	2546	MW	119							
	HSF0103	2547	MW	78							
	HSF0103	2548	MW	129							
	HSF0103	2549	MW	120							
	HSF0103	2550	MW	144							
	HSF0103	2551	MW	126							
	HSF0103	2552	MW	117							
	HSF0103	2553	MW	163							
	HSF0103	2554	MW	225							
	HSF0103	2555	MW	202							
	HSF0103	4115	RB	128			SC				
	HSF0103	4116	RB	203			SC				
	HSF0103	4444	CCG	74							
	HSF0104	11	GR	129			SC				
	HSF0104	12	GR	198		98	SC/OT				
	HSF0104	13	GR	200							
	HSF0104	14	GR	221		98	SC/OT				
	HSF0104	15	GR	221							
	HSF0104	153	BT	381							
	HSF0104	154	BT	224							
	HSF0104	155	BT	216							
	HSF0104	156	BT	153			SC				
	HSF0104	157	BT	134			SC				
	HSF0104	1747	LSU	373							
	HSF0104	1748	LSU	314							
	HSF0104	1749	LSU	324							
	HSF0104	2556	MW	122							
	HSF0104	2557	MW	174							
	HSF0104	2558	MW	118							
	HSF0104	2559	MW	224							
	HSF0104	2560	MW	114							
	HSF0104	2561	MW	192							
	HSF0104	2562	MW	134							
	HSF0104	2563	MW	124							
	HSF0104	2564	MW	130							
	HSF0104	2565	MW	172							
	HSF0104	2566	MW	118							
	HSF0104	2567	MW	79							
	HSF0104	4117	RB	246			SC				
	HSF0104	4118	RB	226							
	HSF0106	16	GR	217		98	SC/OT				
	HSF0106	1750	LSU	340							
	HSF0106	1751	LSU	283							
	HSF0106	2568	MW	134							
	HSF0106	2569	MW	120							
	HSF0106	2570	MW	128							
	HSF0106	2571	MW	134							
	HSF0106	2572	MW	124							
	HSF0106	2573	MW	169							
	HSF0106	2574	MW	124							
	HSF0106	2575	MW	174							
	HSF0106	2576	MW	195		1	SC/OT				
	HSF0106	2577	MW	240							
	HSF0106	4445	CCG	69							
	HSF0107	17	GR	171							
	HSF0107	18	GR	146							
	HSF0107	158	BT	487			FR				
	HSF0107	159	BT	385							
	HSF0107	160	BT	333							
	HSF0107	161	BT	290							
	HSF0107	1752	LSU	350							
	HSF0107	2578	MW	164							
	HSF0107	2579	MW	154							
	HSF0107	2580	MW	115							
	HSF0107	2581	MW	109							
	HSF0107	2582	MW	211		98	SC/OT				
	HSF0107	4119	RB	279			SC				
	HSF1101	67	GR	178			SC				
	HSF1101	68	GR	133			SC				
	HSF1101	992	LNC	64							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1101	1968	LSU	395							
	HSF1101	1969	LSU	230							
	HSF1101	1970	LSU	225							
	HSF1101	1971	LSU	208							
	HSF1101	1972	LSU	189							
	HSF1101	1973	LSU	185							
	HSF1101	3162	MW	245							
	HSF1101	3163	MW	238							
	HSF1101	3164	MW	264							
	HSF1101	3165	MW	192							
	HSF1101	3166	MW	186							
	HSF1101	3167	MW	166							
	HSF1101	3168	MW	103							
	HSF1101	3169	MW	184							
	HSF1101	3170	MW	146							
	HSF1101	3171	MW	112							
	HSF1101	3172	MW	96							
	HSF1101	3173	MW	109							
	HSF1101	3174	MW	113							
	HSF1101	3175	MW	94							
	HSF1102	69	GR	140			SC				
	HSF1102	70	GR	132			SC				
	HSF1102	214	BT	271			FR				
	HSF1102	1974	LSU	376							
	HSF1102	1975	LSU	343							
	HSF1102	1976	LSU	156							
	HSF1102	1977	LSU	117							
	HSF1102	3176	MW	164			OT				
	HSF1102	3177	MW	265							
	HSF1102	3178	MW	350							
	HSF1102	3179	MW	205							
	HSF1102	3180	MW	104							
	HSF1102	3181	MW	166							
	HSF1102	3182	MW	193							
	HSF1102	3183	MW	113							
	HSF1102	3184	MW	131							
	HSF1102	3185	MW	91							
	HSF1102	3186	MW	118							
	HSF1102	4163	RB	176			SC				
	HSF1102	4495	CCG	82							
	HSF1102	4496	CCG	52							
	HSF1102	4497	CCG	70							
	HSF1103	71	GR	138			SC				
	HSF1103	72	GR	229			OT				
	HSF1103	215	BT	261			FR				
	HSF1103	993	LNC	66							
	HSF1103	994	LNC	87							
	HSF1103	1978	LSU	124							
	HSF1103	3187	MW	210							
	HSF1103	3188	MW	219							
	HSF1103	3189	MW	117							
	HSF1103	3190	MW	112							
	HSF1103	3191	MW	142							
	HSF1103	3192	MW	112							
	HSF1103	3193	MW	163							
	HSF1103	3194	MW	120							
	HSF1103	3195	MW	106							
	HSF1103	3196	MW	128							
	HSF1103	3197	MW	125							
	HSF1103	3198	MW	63							
	HSF1103	3199	MW	68							
	HSF1103	4498	CCG	77							
	HSF1103	4499	CCG	71							
	HSF1103	4500	CCG	70							
	HSF1104	73	GR	137			SC				
	HSF1104	74	GR	148			SC				
	HSF1104	75	GR	125			SC				
	HSF1104	216	BT	468							
	HSF1104	217	BT	285							
	HSF1104	1979	LSU	163							
	HSF1104	1980	LSU	144							
	HSF1104	1981	LSU	108							
	HSF1104	1982	LSU	147							
	HSF1104	1983	LSU	106							
	HSF1104	3200	MW	226							
	HSF1104	3201	MW	228							
	HSF1104	3202	MW	172							
	HSF1104	3203	MW	60							
	HSF1104	3204	MW	117							
	HSF1104	3205	MW	135							
	HSF1104	3206	MW	204							
	HSF1104	3207	MW	129							
	HSF1104	3208	MW	203							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1104	3209	MW	180							
	HSF1104	3210	MW	160							
	HSF1104	3211	MW	109							
	HSF1104	3212	MW	153							
	HSF1104	3213	MW	190			OT				
	HSF1104	4164	RB	245			SC				
	HSF1104	4165	RB	146			SC				
	HSF1104	4501	CCG	70							
	HSF1201	76	GR	152							
	HSF1201	77	GR	145							
	HSF1201	78	GR	144							
	HSF1201	79	GR	195			SC				
	HSF1201	80	GR	211			OT				
	HSF1201	218	BT	208			SC				
	HSF1201	1984	LSU	233							
	HSF1201	1985	LSU	161							
	HSF1201	1986	LSU	131							
	HSF1201	1987	LSU	147							
	HSF1201	1988	LSU	134							
	HSF1201	1989	LSU	118							
	HSF1201	3214	MW	170							
	HSF1201	3215	MW	107							
	HSF1201	3216	MW	110							
	HSF1201	3217	MW	200							
	HSF1201	3218	MW	135							
	HSF1201	3219	MW	131							
	HSF1201	3220	MW	65							
	HSF1201	3221	MW	117							
	HSF1201	3222	MW	110							
	HSF1201	3223	MW	280							
	HSF1201	4166	RB	181			SC				
	HSF1201	4167	RB	172			SC				
	HSF1201	4502	CCG	68							
	HSF1202	81	GR	138			SC				
	HSF1202	82	GR	150							
	HSF1202	219	BT	273			FR				
	HSF1202	1990	LSU	154							
	HSF1202	1991	LSU	158							
	HSF1202	1992	LSU	138							
	HSF1202	1993	LSU	179							
	HSF1202	1994	LSU	193							
	HSF1202	1995	LSU	156							
	HSF1202	1996	LSU	149							
	HSF1202	3224	MW	121							
	HSF1202	3225	MW	130							
	HSF1202	3226	MW	122							
	HSF1202	3227	MW	188							
	HSF1202	3228	MW	102							
	HSF1202	3229	MW	185							
	HSF1202	3230	MW	170							
	HSF1202	3231	MW	161							
	HSF1202	3232	MW	136							
	HSF1202	3233	MW	130							
	HSF1202	3234	MW	120							
	HSF1202	3235	MW	130							
	HSF1202	4503	CCG	81							
	HSF1203	83	GR	155							
	HSF1203	1997	LSU	377							
	HSF1203	1998	LSU	188							
	HSF1203	1999	LSU	124							
	HSF1203	2000	LSU	133							
	HSF1203	3236	MW	283		2	OT				
	HSF1203	3237	MW	230							
	HSF1203	3238	MW	275							
	HSF1203	3239	MW	237							
	HSF1203	3240	MW	249							
	HSF1203	3241	MW	275							
	HSF1203	3242	MW	239							
	HSF1203	3243	MW	128							
	HSF1203	3244	MW	164							
	HSF1203	3245	MW	121							
	HSF1203	3246	MW	118							
	HSF1203	3247	MW	162							
	HSF1203	3248	MW	194							
	HSF1203	3249	MW	130							
	HSF1203	4504	CCG	74							
	HSF1204	84	GR	129			SC				
	HSF1204	2001	LSU	261							
	HSF1204	2002	LSU	164							
	HSF1204	2003	LSU	198							
	HSF1204	2004	LSU	176							
	HSF1204	2005	LSU	155							
	HSF1204	3250	MW	206							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1204	3251	MW	157							
	HSF1204	3252	MW	182							
	HSF1204	3253	MW	77							
	HSF1204	3254	MW	70							
	HSF1204	3255	MW	114							
	HSF1204	3256	MW	175							
	HSF1204	3257	MW	179							
	HSF1204	3258	MW	120							
	HSF1204	3259	MW	113							
	HSF1204	3260	MW	106							
	HSF1204	3261	MW	130							
	HSF1204	3262	MW	108							
	HSF1204	3263	MW	114							
	HSF1204	4505	CCG	79							
	HSF1205	85	GR	151							
	HSF1205	86	GR	138							
	HSF1205	87	GR	110			SC				
	HSF1205	88	GR	214		98	OT				
	HSF1205	220	BT	225			SC				
	HSF1205	221	BT	198			SC				
	HSF1205	2006	LSU	247							
	HSF1205	3264	MW	326							
	HSF1205	3265	MW	272							
	HSF1205	3266	MW	265							
	HSF1205	3267	MW	210		11	OT				
	HSF1205	3268	MW	232							
	HSF1205	3269	MW	214							
	HSF1205	3270	MW	171							
	HSF1205	3271	MW	148							
	HSF1205	3272	MW	125							
	HSF1205	3273	MW	112							
	HSF1205	4506	CCG	75							
	HSF1205	4507	CCG	83							
	HSF1206	89	GR	160			SC				
	HSF1206	90	GR	206			SC				
	HSF1206	91	GR	153							
	HSF1206	92	GR	128							
	HSF1206	93	GR	142							
	HSF1206	94	GR	156							
	HSF1206	95	GR	138							
	HSF1206	96	GR	107							
	HSF1206	97	GR	141							
	HSF1206	98	GR	150							
	HSF1206	99	GR	154							
	HSF1206	100	GR	144							
	HSF1206	101	GR	215		98	OT				
	HSF1206	222	BT	297			FR				
	HSF1206	223	BT	264			FR				
	HSF1206	224	BT	272							
	HSF1206	225	BT	218							
	HSF1206	226	BT	184			SC				
	HSF1206	227	BT	170			SC				
	HSF1206	2007	LSU	364							
	HSF1206	2008	LSU	352							
	HSF1206	3274	MW	100							
	HSF1206	3275	MW	294							
	HSF1206	3276	MW	172							
	HSF1206	3277	MW	112							
	HSF1206	3278	MW	120							
	HSF1206	3279	MW	107							
	HSF1206	3280	MW	122							
	HSF1206	3281	MW	170							
	HSF1206	3282	MW	70							
	HSF1206	3283	MW	118							
	HSF1206	3284	MW	120							
	HSF1206	3285	MW	123							
	HSF1206	3286	MW	279		11	OT				
	HSF1206	4168	RB	266			SC				
	HSF1206	4508	CCG	83							
	HSF1206	4509	CCG	82							
	HSF1207	102	GR	124							
	HSF1207	2009	LSU	272							
	HSF1207	2010	LSU	243							
	HSF1207	2011	LSU	125							
	HSF1207	3287	MW	274							
	HSF1207	3288	MW	173							
	HSF1207	3289	MW	185							
	HSF1207	3290	MW	130							
	HSF1207	3291	MW	175							
	HSF1207	3292	MW	134							
	HSF1207	3293	MW	204							
	HSF1207	3294	MW	170							
	HSF1207	3295	MW	127							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1207	3296	MW	145							
	HSF1207	4169	RB	225			SC				
	HSF1207	4510	CCG	75							
	HSF1207	4511	CCG	62							
	MBS1101	467	LKC	25							
	MBS1101	468	LKC	18							
	MBS1101	469	LKC	23							
	MBS1101	470	LKC	22							
	MBS1101	471	LKC	22							
	MBS1101	472	LKC	23							
	MBS1101	473	LKC	24							
	MBS1101	474	LKC	18							
	MBS1101	475	LKC	22							
	MBS1101	476	LKC	18							
	MBS1101	477	LKC	20							
	MBS1101	1018	LNC	21							
	MBS1101	1019	LNC	17							
	MBS1101	1020	LNC	25							
	MBS1101	1021	LNC	20							
	MBS1101	1022	LNC	21							
	MBS1101	1023	LNC	26							
	MBS1101	1024	LNC	21							
	MBS1101	1025	LNC	19							
	MBS1101	1026	LNC	21							
	MBS1101	1027	LNC	22							
	MBS1101	2016	LSU	34							
	MBS1101	2017	LSU	36							
	MBS1101	2018	LSU	30							
	MBS1101	2019	LSU	34							
	MBS1101	2020	LSU	34							
	MBS1101	2021	LSU	37							
	MBS1101	2022	LSU	35							
	MBS1101	2023	LSU	36							
	MBS1101	4261	CCG	21							
	MBS1101	5010	WSC	22							
	MBS1101	5011	WSC	21							
	MBS1101	5012	WSC	28							
	MBS1101	5013	WSC	25							
	MBS1101	5014	WSC	20							
	MBS1101	5015	WSC	22							
	MBS1101	5016	WSC	23							
	MBS1101	5017	WSC	24							
	MBS1101	5018	WSC	23							
	MBS1101	5019	WSC	21							
	MBS1101	5020	WSC	23							
	MBS1101	5247	TP	26							
	MBS1101	5248	TP	16							
	MBS1101	5249	TP	32							
	MBS1101	5250	TP	21							
	MBS1101	5251	TP	22							
	MBS1101	5257	RSC	19							
	MBS1101	5258	RSC	15							
	MBS1102	478	LKC	23							
	MBS1102	479	LKC	22							
	MBS1102	480	LKC	20							
	MBS1102	481	LKC	20							
	MBS1102	482	LKC	25							
	MBS1102	483	LKC	26							
	MBS1102	484	LKC	21							
	MBS1102	485	LKC	22							
	MBS1102	486	LKC	24							
	MBS1102	487	LKC	28							
	MBS1102	3837	RSC	58							
	MBS1102	5021	WSC	17							
	MBS1102	5022	WSC	23							
	MBS1102	5023	WSC	19							
	MBS1102	5024	WSC	21							
	MBS1102	5025	WSC	20							
	MBS1102	5026	WSC	23							
	MBS1102	5027	WSC	24							
	MBS1102	5028	WSC	27							
	MBS1102	5029	WSC	20							
	MBS1102	5030	WSC	20							
	MBS1102	5259	RSC	14							
	MEF0101	235	BB	155							
	MEF0102	236	BB	123							
	MEF0102	237	BB	135							
	MEF0102	238	BB	183							
	MEF0102	239	BB	164							
	MEF0102	490	LKC	18							
	MEF0102	491	LKC	24							
	MEF0102	1045	LNC	19							
	MEF0102	1046	LNC	17							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0102	1047	LNC	18							
	MEF0102	1048	LNC	19							
	MEF0102	1049	LNC	25							
	MEF0102	1050	LNC	23							
	MEF0102	1051	LNC	20							
	MEF0102	1052	LNC	17							
	MEF0102	1053	LNC	21							
	MEF0102	1054	LNC	21							
	MEF0102	3466	NP	180							
	MEF0102	4537	CCG	24							
	MEF0102	4538	CCG	88							
	MEF0102	5056	WSC	29							
	MEF0102	5057	LSU	31							
	MEF0102	5058	LSU	31							
	MEF0102	5059	LSU	27							
	MEF0102	5060	LSU	28							
	MEF0102	5061	LSU	23							
	MEF0102	5062	LSU	27							
	MEF0102	5063	LSU	20							
	MEF0102	5064	LSU	27							
	MEF0102	5065	LSU	27							
	MEF0102	5066	LSU	28							
	MEF0102	5067	LSU	22							
	MEF0102	5279	WSC	144							
	MEF1101	253	BB	72							
	MEF1101	1264	LNC	20							
	MEF1101	1265	LNC	21							
	MEF1101	1266	LNC	28							
	MEF1101	1267	LNC	21							
	MEF1101	1268	LNC	24							
	MEF1101	1269	LNC	22							
	MEF1101	1270	LNC	26							
	MEF1101	1271	LNC	22							
	MEF1101	1272	LNC	23							
	MEF1101	1273	LNC	19							
	MEF1101	1274	LNC	18							
	MEF1101	2100	LSU	42							
	MEF1101	2101	LSU	35							
	MEF1101	2102	LSU	43							
	MEF1101	2103	LSU	40							
	MEF1101	2104	LSU	35							
	MEF1101	2105	LSU	34							
	MEF1101	3468	NP	135							
	MEF1101	5134	LSU	28							
	MEF1101	5135	LSU	26							
	MEF1101	5136	LSU	25							
	MEF1101	5137	LSU	27							
	MEF1101	5138	LSU	23							
	MEF1101	5139	LSU	23							
	MEF1101	5140	LSU	22							
	MEF1101	5141	LSU	25							
	MEF1101	5142	LSU	26							
	MEF1101	5143	LSU	24							
	MEF1101	5144	LSU	28							
	MEF1101	5145	LSU	24							
02											
	HBS0201	276	LKC	33							
	HBS0201	277	LKC	24							
	HBS0201	278	LKC	31							
	HBS0201	279	LKC	32							
	HBS0201	280	LKC	24							
	HBS0201	281	LKC	31							
	HBS0201	282	LKC	30							
	HBS0201	283	LKC	31							
	HBS0201	579	LNC	23							
	HBS0201	580	LNC	21							
	HBS0201	581	LNC	19							
	HBS0201	582	LNC	18							
	HBS0201	583	LNC	19							
	HBS0201	584	LNC	19							
	HBS0201	585	LNC	22							
	HBS0201	586	LNC	23							
	HBS0201	587	LNC	20							
	HBS0201	588	LNC	22							
	HBS0201	2483	MW	48							
	HBS0201	4710	CSU	25							
	HBS0201	4711	CSU	27							
	HBS0201	4712	CSU	23							
	HBS0201	4713	CSU	24							
	HBS0201	4714	CSU	26							
	HBS0201	4715	CSU	22							
	HBS0201	4716	CSU	20							
	HBS0201	4717	CSU	23							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS0201	4718	LSU	23							
	HBS0201	4719	LSU	20							
	HEF0204	324	LKC	28							
	HEF0204	325	LKC	26							
	HEF0204	326	LKC	27							
	HEF0204	327	LKC	35							
	HEF0204	328	LKC	29							
	HEF0204	329	LKC	50							
	HEF0204	330	LKC	26							
	HEF0204	331	LKC	26							
	HEF0204	332	LKC	25							
	HEF0204	333	LKC	26							
	HEF0204	334	LKC	31							
	HEF0204	335	LKC	30							
	HEF0204	677	LNC	16							
	HEF0204	678	LNC	21							
	HEF0204	679	LNC	21							
	HEF0204	680	LNC	23							
	HEF0204	681	LNC	17							
	HEF0204	682	LNC	21							
	HEF0204	683	LNC	21							
	HEF0204	684	LNC	18							
	HEF0204	685	LNC	19							
	HEF0204	686	LNC	17							
	HEF0204	687	LNC	16							
	HEF0204	1505	LSU	62							
	HEF0204	1506	LSU	68							
	HEF0204	1507	LSU	57							
	HEF0204	1508	LSU	65							
	HEF0204	1509	LSU	58							
	HEF0204	1510	LSU	64							
	HEF0204	1511	LSU	61							
	HEF0204	1512	LSU	60							
	HEF0204	1513	LSU	61							
	HEF0204	1514	LSU	54							
	HEF0204	1515	LSU	66							
	HEF0204	1516	LSU	69							
	HEF0204	4189	CCG	22							
	HEF0204	4265	CCG	76							
	HEF0204	4266	CCG	63							
	HEF0204	4267	CCG	47							
	HEF0204	4268	CCG	67							
	HEF0204	4269	CCG	74							
	HEF0204	4270	CCG	59							
	HEF0204	4271	CCG	67							
	HEF0204	4272	CCG	80							
	HEF0204	4273	CCG	82							
	HEF0204	4274	CCG	66							
	HEF0204	4275	CCG	91							
	HEF0204	4276	CCG	56							
	HEF0204	4858	LSU	25							
	HEF0204	4859	LSU	22							
	HEF0204	4860	LSU	22							
	HEF0204	4861	LSU	24							
	HEF0204	4862	LSU	23							
	HEF0204	4863	LSU	24							
	HEF0204	4864	LSU	20							
	HEF0204	4865	LSU	28							
	HEF0204	4866	LSU	19							
	HEF0204	4867	LSU	23							
	HEF0205	336	LKC	92							
	HEF0205	688	LNC	54							
	HEF0205	689	LNC	46							
	HEF0205	690	LNC	44							
	HEF0205	691	LNC	40							
	HEF0205	692	LNC	44							
	HEF0205	693	LNC	77							
	HEF0205	694	LNC	44							
	HEF0205	1517	LSU	88							
	HEF0205	1518	LSU	108							
	HEF0205	2493	MW	55							
	HEF0205	2494	MW	60							
	HEF0205	4190	CCG	25							
	HEF0205	4191	CCG	27							
	HEF0205	4192	CCG	22							
	HEF0205	4193	CCG	31							
	HEF0205	4194	CCG	33							
	HEF0205	4195	CCG	28							
	HEF0205	4196	CCG	25							
	HEF0205	4197	CCG	36							
	HEF0205	4198	CCG	24							
	HEF0205	4199	CCG	26							
	HEF0205	4200	CCG	30							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF0205	4277	CCG	77							
	HEF0205	4278	CCG	84							
	HEF0205	4279	CCG	101							
	HEF0205	4280	CCG	61							
	HEF0205	4281	CCG	65							
	HEF0205	4282	CCG	91							
	HEF0205	4283	CCG	55							
	HEF0205	4284	CCG	54							
	HEF0205	4285	CCG	88							
	HEF0205	4286	CCG	67							
	HEF0205	4287	CCG	80							
	HEF0205	4288	CCG	63							
	HEF0205	4289	CCG	60							
	HEF0205	4290	CCG	62							
	HEF0205	4291	CCG	91							
	HEF0205	4292	CCG	90							
	HEF0205	4293	CCG	66							
	HEF1304	411	LKC	68							
	HEF1304	412	LKC	50							
	HEF1304	413	LKC	61							
	HEF1304	414	LKC	74							
	HEF1304	415	LKC	60							
	HEF1304	416	LKC	92							
	HEF1304	830	LNC	13							
	HEF1304	831	LNC	12							
	HEF1304	832	LNC	42							
	HEF1304	1636	LSU	67							
	HEF1304	1637	LSU	65							
	HEF1304	1638	LSU	48							
	HEF1304	1639	LSU	61							
	HEF1304	1640	LSU	77							
	HEF1304	1641	LSU	96							
	HEF1304	1642	LSU	76							
	HEF1304	1643	LSU	57							
	HEF1304	1644	LSU	73							
	HEF1304	1645	LSU	58							
	HEF1304	1646	LSU	77							
	HEF1304	1647	LSU	56							
	HEF1304	1648	LSU	76							
	HEF1304	1649	LSU	58							
	HEF1304	1650	LSU	56							
	HEF1304	1651	LSU	65							
	HEF1304	1652	LSU	57							
	HEF1304	4244	CCG	29							
	HEF1304	4245	CCG	29							
	HEF1304	4246	CCG	32							
	HEF1304	4247	CCG	28							
	HEF1304	4248	CCG	33							
	HEF1304	4249	CCG	37							
	HEF1304	4377	CCG	85							
	HEF1304	4913	LSU	23							
	HEF1304	4914	LSU	19							
	HEF1305	833	LNC	47							
	HEF1305	834	LNC	24							
	HEF1305	1653	LSU	92							
	HEF1305	1654	LSU	63							
	HEF1305	2511	MW	66							
	HEF1305	2512	MW	56							
	HEF1305	4250	CCG	27							
	HEF1305	4378	CCG	76							
	HSF0201	19	GR	217		98	SC/OT				
	HSF0201	162	BT	422							
	HSF0201	163	BT	277							
	HSF0201	164	BT	233							
	HSF0201	165	BT	207							
	HSF0201	1753	LSU	384							
	HSF0201	1754	LSU	386							
	HSF0201	1755	LSU	323							
	HSF0201	1756	LSU	244							
	HSF0201	1757	LSU	298							
	HSF0201	1758	LSU	223							
	HSF0201	1759	LSU	249							
	HSF0201	1760	LSU	192							
	HSF0201	1761	LSU	172							
	HSF0201	1762	LSU	124							
	HSF0201	2338	CSU	425							
	HSF0201	2583	MW	234							
	HSF0201	2584	MW	144							
	HSF0201	2585	MW	77							
	HSF0201	2586	MW	124							
	HSF0201	2587	MW	148							
	HSF0201	2588	MW	135							
	HSF0201	2589	MW	65							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0201	2590	MW	127							
	HSF0201	2591	MW	129							
	HSF0201	2592	MW	133							
	HSF0201	2593	MW	130							
	HSF0201	2594	MW	197							
	HSF0201	2595	MW	76							
	HSF0201	2596	MW	320			SC/OT				
	HSF0201	4446	CCG	92							
	HSF0202	166	BT	169							
	HSF0202	1763	LSU	344							
	HSF0202	1764	LSU	280							
	HSF0202	1765	LSU	295							
	HSF0202	1766	LSU	306							
	HSF0202	1767	LSU	223							
	HSF0202	2597	MW	314							
	HSF0202	2598	MW	292							
	HSF0202	2599	MW	250							
	HSF0202	2600	MW	257							
	HSF0202	2601	MW	182							
	HSF0202	2602	MW	182							
	HSF0202	2603	MW	175							
	HSF0202	2604	MW	189							
	HSF0202	2605	MW	144							
	HSF0202	2606	MW	177							
	HSF0202	2607	MW	139							
	HSF0202	2608	MW	115							
	HSF0202	4120	RB	318			SC				
	HSF0202	4121	RB	315			SC				
	HSF0202	4122	RB	245			SC				
	HSF0202	4123	RB	172			SC				
	HSF0203	20	GR	339							
	HSF0203	167	BT	277							
	HSF0203	168	BT	222							
	HSF0203	228	BB	627							
	HSF0203	1768	LSU	308							
	HSF0203	1769	LSU	225							
	HSF0203	2339	CSU	440							
	HSF0203	2609	MW	375							
	HSF0203	2610	MW	295							
	HSF0203	2611	MW	250							
	HSF0203	2612	MW	313							
	HSF0203	2613	MW	299							
	HSF0203	2614	MW	402							
	HSF0203	2615	MW	333							
	HSF0203	2616	MW	292							
	HSF0203	2617	MW	282							
	HSF0203	2618	MW	204							
	HSF0203	2619	MW	225							
	HSF0203	2620	MW	198							
	HSF0203	2621	MW	279							
	HSF0203	2622	MW	137							
	HSF0203	2623	MW	186							
	HSF0203	4124	RB	242							
	HSF0203	4125	RB	214							
	HSF0203	4126	RB	180							
	HSF0203	4447	CCG	83							
	MBS0201	466	LKC	21							
	MBS0201	995	LNC	26							
	MBS0201	996	LNC	29							
	MBS0201	2012	LSU	37							
	MBS0201	2013	LSU	30							
	MBS0201	4977	LSU	35							
	MBS0201	4978	LSU	33							
	MBS0201	4979	LSU	30							
	MBS0201	5244	TP	37							
	MBS0202	997	LNC	20							
	MBS0202	998	LNC	22							
	MBS0202	999	LNC	24							
	MBS0202	1000	LNC	22							
	MBS0202	1001	LNC	18							
	MBS0202	1002	LNC	21							
	MBS0202	1003	LNC	21							
	MBS0202	1004	LNC	23							
	MBS0202	1005	LNC	20							
	MBS0202	2014	LSU	32							
	MBS0202	2015	LSU	35							
	MBS0202	3463	NP	228			SC				
	MBS0202	4980	LSU	30							
	MBS0202	4981	LSU	25							
	MBS0202	4982	LSU	30							
	MBS0202	4983	LSU	21							
	MBS0202	4984	LSU	21							
	MBS0202	4985	LSU	23							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MBS0202	4986	LSU	26							
	MBS0202	4987	LSU	23							
	MBS0202	4988	LSU	21							
	MBS0202	4989	LSU	25							
	MBS0202	4990	LSU	22							
	MBS0202	5245	TP	30							
	MBS0202	5261	RSC	27							
	MBS0202	5262	RSC	27							
	MBS0202	5263	RSC	27							
	MBS0202	5264	RSC	27							
	MBS0202	5265	RSC	28							
	MBS0202	5266	RSC	28							
	MBS0202	5267	RSC	25							
	MBS0202	5268	RSC	25							
	MBS0202	5269	RSC	23							
	MBS0202	5270	RSC	22							
	MEF0201	1055	LNC	16							
	MEF0201	1056	LNC	29							
	MEF0201	1057	LNC	22							
	MEF0201	1058	LNC	23							
	MEF0201	1059	LNC	21							
	MEF0201	1060	LNC	21							
	MEF0201	1061	LNC	16							
	MEF0201	1062	LNC	16							
	MEF0201	1063	LNC	18							
	MEF0201	1064	LNC	18							
	MEF0201	2039	LSU	35							
	MEF0201	2040	LSU	39							
	MEF0201	5068	LSU	18							
	MEF0201	5260	LKC	12							
	MEF0202	1065	LNC	18							
	MEF0202	1066	LNC	17							
	MEF0202	1067	LNC	21							
	MEF0202	1068	LNC	27							
	MEF0202	1069	LNC	20							
	MEF0202	1070	LNC	25							
	MEF0202	1071	LNC	23							
	MEF0202	1072	LNC	21							
	MEF0202	2041	LSU	41							
	MEF0202	4539	CCG	71							
	MEF0202	4540	CCG	77							
	MEF0202	4541	CCG	83							
	MEF0202	5069	LSU	27							
	MEF0202	5070	LSU	34							
	MEF0202	5071	LSU	34							
	MEF0202	5072	LSU	22							
	MEF0202	5073	LSU	32							
	MEF0202	5074	LSU	28							
	MEF0202	5075	LSU	15							
	MEF0203	240	BB	133							
	MEF0203	1073	LNC	30							
	MEF0203	1074	LNC	45							
	MEF0203	1075	LNC	24							
	MEF0203	4542	CCG	71							
	MEF0203	4543	CCG	58							
	MEF0203	4544	CCG	67							
	MEF0203	4545	CCG	58							
	MEF0203	4546	CCG	67							
	MEF0204	241	BB	122							
	MEF0204	242	BB	210							
	MEF0204	1076	LNC	33							
	MEF0204	1077	LNC	68							
	MEF0204	1078	LNC	63							
	MEF0204	1079	LNC	77							
	MEF0204	1080	LNC	29							
	MEF0204	1081	LNC	22							
	MEF0204	1082	LNC	32							
	MEF0204	1083	LNC	77							
	MEF0204	1084	LNC	113							
	MEF0204	1085	LNC	75							
	MEF0204	1086	LNC	106							
	MEF0204	1087	LNC	66							
	MEF0204	1088	LNC	88							
	MEF0204	1089	LNC	72							
	MEF0204	1090	LNC	30							
	MEF0204	1091	LNC	28							
	MEF0204	1092	LNC	27							
	MEF0204	1093	LNC	102							
	MEF0204	1094	LNC	71							
	MEF0204	1095	LNC	49							
	MEF0204	1096	LNC	74							
	MEF0204	1097	LNC	22							
	MEF0204	4547	CCG	69							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0204	4548	CCG	69							
	MEF0204	4549	CCG	67							
	MEF0204	4550	CCG	88							
	MEF0204	4551	CCG	85							
	MEF0204	4552	CCG	82							
	MEF0204	4553	CCG	82							
	MEF0204	4554	CCG	69							
	MEF0204	4555	CCG	71							
	MEF0204	4556	CCG	68							
	MEF0204	4557	CCG	56							
03											
	HBS1401	311	LKC	36							
	HBS1401	312	LKC	38							
	HBS1401	313	LKC	33							
	HBS1401	314	LKC	34							
	HBS1401	315	LKC	33							
	HBS1401	316	LKC	37							
	HBS1401	317	LKC	33							
	HBS1401	318	LKC	30							
	HBS1401	648	LNC	34							
	HBS1401	649	LNC	33							
	HBS1401	650	LNC	19							
	HBS1401	1497	LSU	31							
	HBS1401	4186	CCG	26							
	HBS1401	4783	CSU	25							
	HBS1401	4784	CSU	28							
	HBS1401	4785	CSU	23							
	HBS1401	4786	CSU	23							
	HBS1401	4787	CSU	26							
	HBS1401	4788	CSU	23							
	HBS1401	4789	CSU	25							
	HBS1401	4790	LSU	27							
	HBS1401	4791	LSU	29							
	HBS1401	4792	LSU	24							
	HBS1401	4793	LSU	24							
	HBS1401	4794	LSU	27							
	HBS1401	4795	LSU	24							
	HBS1401	4796	LSU	28							
	HBS1401	4797	LSU	26							
	HBS1401	4798	LSU	24							
	HBS1401	4799	LSU	26							
	HBS1401	4800	LSU	23							
	HBS1401	4801	LSU	29							
	HBS1401	4802	LSU	30							
	HBS1401	4803	LSU	23							
	HBS1401	4804	LSU	27							
	HBS1401	4805	LSU	22							
	HBS1401	4806	LSU	24							
	HBS1401	4807	LSU	27							
	HBS1401	4808	LSU	26							
	HBS1401	4809	LSU	28							
	HBS1401	4810	LSU	28							
	HBS1401	4811	LSU	23							
	HBS1401	4812	LSU	24							
	HBS1401	4813	LSU	24							
	HBS1401	4814	LSU	24							
	HBS1401	4815	LSU	25							
	HBS1401	4816	LSU	28							
	HBS1401	4817	LSU	24							
	HBS1401	4818	LSU	22							
	HBS1401	4819	LSU	28							
	HBS1401	4820	LSU	25							
	HBS1401	4821	LSU	27							
	HEF1402	835	LNC	26							
	HEF1402	836	LNC	26							
	HEF1402	837	LNC	18							
	HEF1402	4915	LSU	23							
	HEF1402	4916	LSU	19							
	HEF1402	4917	LSU	22							
	HEF1402	4918	LSU	24							
	HEF1402	4919	LSU	18							
	HEF1402	4920	LSU	17							
	HEF1402	4921	LSU	22							
	HEF1402	4922	LSU	19							
	HEF1403	838	LNC	18							
	HEF1403	839	LNC	21							
	HEF1403	840	LNC	20							
	HEF1403	841	LNC	22							
	HEF1403	842	LNC	18							
	HEF1403	843	LNC	30							
	HEF1403	844	LNC	19							
	HEF1403	845	LNC	23							
	HEF1403	846	LNC	19							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1403	847	LNC	17							
	HEF1403	848	LNC	24							
	HEF1403	849	LNC	18							
	HEF1403	850	LNC	23							
	HEF1403	851	LNC	18							
	HEF1403	852	LNC	24							
	HEF1403	853	LNC	22							
	HEF1403	1655	LSU	108							
	HEF1403	1656	LSU	75							
	HEF1403	1657	LSU	38							
	HEF1403	1658	LSU	35							
	HEF1403	1659	LSU	137							
	HEF1403	1660	LSU	125							
	HEF1403	1661	LSU	76							
	HEF1403	1662	LSU	92							
	HEF1403	4379	CCG	79							
	HEF1403	4380	CCG	72							
	HEF1403	4923	LSU	28							
	HEF1403	4924	LSU	19							
	HEF1403	4925	LSU	29							
	HEF1404	854	LNC	19							
	HEF1404	855	LNC	22							
	HEF1404	856	LNC	46							
	HEF1404	857	LNC	46							
	HEF1404	858	LNC	31							
	HEF1404	859	LNC	55							
	HEF1404	860	LNC	61							
	HEF1404	861	LNC	38							
	HEF1404	1663	LSU	67							
	HEF1404	4251	CCG	24							
	HEF1404	4252	CCG	28							
	HEF1404	4253	CCG	27							
	HEF1404	4254	CCG	33							
	HEF1404	4255	CCG	31							
	HEF1404	4256	CCG	28							
	HEF1404	4257	CCG	26							
	HEF1404	4258	CCG	36							
	HEF1404	4381	CCG	54							
	HEF1404	4382	CCG	57							
	HEF1404	4383	CCG	55							
	HEF1404	4384	CCG	66							
	HEF1404	4385	CCG	60							
	HEF1404	4386	CCG	56							
	HEF1404	4926	LSU	21							
	HEF1404	4927	LSU	20							
	HEF1404	4928	LSU	23							
	HEF1404	4929	LSU	18							
	HEF1404	4930	LSU	23							
	HEF1404	4931	LSU	19							
	HEF1404	4932	LSU	24							
	HEF1404	4933	LSU	29							
	HEF1404	4934	LSU	20							
	HEF1404	4935	LSU	21							
	HEF1404	4936	LSU	23							
	HEF1404	4937	LSU	24							
	HEF1405	862	LNC	26							
	HEF1405	863	LNC	17							
	HEF1405	1664	LSU	48							
	HEF1405	4387	CCG	82							
	HEF1405	4388	CCG	82							
	HEF1405	4938	LSU	28							
	HEF1405	4939	LSU	30							
	HEF1405	4940	LSU	18							
	HEF1405	4941	LSU	29							
	HEF1405	4942	LSU	19							
	HEF1405	4943	LSU	24							
	HSF0206	21	GR	156			SC/OT				
	HSF0206	22	GR	141							
	HSF0206	169	BT	312			FR				
	HSF0206	170	BT	284							
	HSF0206	171	BT	175							
	HSF0206	1770	LSU	351							
	HSF0206	1771	LSU	302							
	HSF0206	1772	LSU	329							
	HSF0206	1773	LSU	252							
	HSF0206	1774	LSU	155							
	HSF0206	2340	CSU	128							
	HSF0206	2624	MW	264							
	HSF0206	2625	MW	218							
	HSF0206	2626	MW	257							
	HSF0206	2627	MW	228							
	HSF0206	2628	MW	190							
	HSF0206	2629	MW	169							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0206	2630	MW	183							
	HSF0206	2631	MW	130							
	HSF0206	2632	MW	64							
	HSF0206	2633	MW	196							
	HSF0206	2634	MW	131							
	HSF0206	2635	MW	140							
	HSF0206	4127	RB	172			SC				
	HSF0206	4128	RB	176							
	HSF0301	23	GR	175							
	HSF0301	172	BT	435			FR				
	HSF0301	173	BT	333							
	HSF0301	174	BT	337			FR				
	HSF0301	175	BT	313							
	HSF0301	176	BT	308							
	HSF0301	177	BT	221							
	HSF0301	1775	LSU	72							
	HSF0301	2636	MW	302		2	SC/OT				
	HSF0301	2637	MW	224							
	HSF0301	2638	MW	238							
	HSF0301	2639	MW	135							
	HSF0301	2640	MW	181							
	HSF0301	2641	MW	145							
	HSF0301	2642	MW	120							
	HSF0301	2643	MW	116							
	HSF0301	2644	MW	189							
	HSF0301	2645	MW	148							
	HSF0301	4129	RB	240			SC				
	HSF0301	4448	CCG	70							
	HSF0302	24	GR	120			SC				
	HSF0302	25	GR	158							
	HSF0302	178	BT	430							
	HSF0302	1776	LSU	225							
	HSF0302	2646	MW	283							
	HSF0302	2647	MW	283							
	HSF0302	2648	MW	253							
	HSF0302	2649	MW	241							
	HSF0302	2650	MW	241							
	HSF0302	2651	MW	256							
	HSF0302	2652	MW	129							
	HSF0302	2653	MW	137							
	HSF0302	2654	MW	71							
	HSF0302	2655	MW	112							
	HSF0302	2656	MW	184							
	HSF0302	2657	MW	122							
	HSF0302	2658	MW	77							
	HSF0302	2659	MW	224							
	HSF0302	2660	MW	243							
	HSF0302	3651	RSC	89							
	HSF0302	4449	CCG	83							
	HSF0303	26	GR	120			SC				
	HSF0303	27	GR	200			SC/OT				
	HSF0303	919	LNC	97							
	HSF0303	1777	LSU	381							
	HSF0303	1778	LSU	377							
	HSF0303	2661	MW	302							
	HSF0303	2662	MW	276							
	HSF0303	2663	MW	214							
	HSF0303	2664	MW	118							
	HSF0303	2665	MW	185							
	HSF0303	2666	MW	140							
	HSF0303	2667	MW	147							
	HSF0303	2668	MW	136							
	HSF0303	2669	MW	143							
	HSF0303	2670	MW	198			SC/OT				
	HSF0304	179	BT	479							
	HSF0304	180	BT	375							
	HSF0304	920	LNC	96							
	HSF0304	1779	LSU	121							
	HSF0304	2671	MW	357							
	HSF0304	2672	MW	246							
	HSF0304	2673	MW	233							
	HSF0304	2674	MW	197							
	HSF0304	2675	MW	175							
	HSF0304	2676	MW	187							
	HSF0304	2677	MW	75							
	HSF0304	2678	MW	136							
	HSF0304	2679	MW	144							
	HSF0304	2680	MW	144							
	HSF0304	4130	RB	137			SC				
	HSF0304	4131	RB	213			SC				
	HSF0304	4450	CCG	82							
	HSF0305	28	GR	168							
	HSF0305	29	GR	208		98	SC/OT				

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0305	30	GR	233		2	SC/OT				
	HSF0305	181	BT	279			FR				
	HSF0305	1780	LSU	328							
	HSF0305	1781	LSU	288							
	HSF0305	2681	MW	267							
	HSF0305	2682	MW	177							
	HSF0305	2683	MW	138							
	HSF0305	2684	MW	142							
	HSF0305	2685	MW	137							
	HSF0305	2686	MW	142							
	HSF0305	2687	MW	184							
	HSF0305	2688	MW	130							
	HSF0305	2689	MW	132							
	HSF0305	2690	MW	137							
	HSF0305	4132	RB	291							
	HSF0305	4133	RB	244			SC				
	HSF0306	31	GR	235			SC				
	HSF0306	32	GR	239							
	HSF0306	182	BT	505							
	HSF0306	183	BT	243							
	HSF0306	1782	LSU	115							
	HSF0306	1783	LSU	134							
	HSF0306	2691	MW	295							
	HSF0306	2692	MW	191							
	HSF0306	2693	MW	190							
	HSF0306	2694	MW	128							
	HSF0306	2695	MW	133							
	HSF0306	2696	MW	153							
	HSF0306	2697	MW	78							
	HSF0306	2698	MW	68							
	HSF0306	2699	MW	137							
	HSF0306	2700	MW	154							
	HSF0306	2701	MW	77							
	HSF0306	2702	MW	204		2	SC/OT				
	HSF0306	2703	MW	269		2	SC/OT				
	HSF0306	4134	RB	208			SC				
	HSF0306	4135	RB	215							
	HSF0306	4136	RB	173							
	MBS0301	1006	LNC	27							
	MBS0301	1007	LNC	25							
	MBS0301	1008	LNC	27							
	MBS0301	1009	LNC	24							
	MBS0301	1010	LNC	25							
	MBS0301	1011	LNC	23							
	MBS0301	1012	LNC	25							
	MBS0301	1013	LNC	30							
	MBS0301	1014	LNC	20							
	MBS0301	1015	LNC	26							
	MBS0301	1016	LNC	24							
	MBS0301	1017	LNC	27							
	MBS0301	3816	RSC	37							
	MBS0301	3817	RSC	21							
	MBS0301	3818	RSC	22							
	MBS0301	4991	LSU	27							
	MBS1301	5031	LSU	19							
	MBS1301	5032	LSU	22							
	MBS1301	5033	LSU	20							
	MBS1301	5034	LSU	21							
	MBS1301	5035	LSU	18							
	MBS1301	5036	LSU	18							
	MBS1301	5037	LSU	22							
	MBS1301	5038	LSU	22							
	MBS1301	5271	RSC	22							
	MBS1301	5272	RSC	20			PR				
	MBS1301	5273	RSC	22			PR				
	MBS1301	5274	RSC	20			FR				
	MBS1301	5275	RSC	16							
	MEF0301	1098	LNC	30							
	MEF0301	1099	LNC	73							
	MEF0301	1100	LNC	22							
	MEF0301	1101	LNC	62							
	MEF0301	1102	LNC	78							
	MEF0301	1103	LNC	23							
	MEF0301	1104	LNC	42							
	MEF0301	1105	LNC	71							
	MEF0301	1106	LNC	63							
	MEF0301	1107	LNC	75							
	MEF0301	1108	LNC	65							
	MEF0301	1109	LNC	41							
	MEF0301	4558	CCG	75							
	MEF0301	4559	CCG	27							
	MEF0301	4560	CCG	29							
	MEF0301	4561	CCG	55							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0301	4562	CCG	32							
	MEF0301	4563	CCG	32							
	MEF0301	4564	CCG	56							
	MEF0301	4565	CCG	30							
	MEF0301	4566	CCG	56							
	MEF0301	4567	CCG	56							
	MEF0301	4568	CCG	31							
	MEF0301	5076	LSU	28							
	MEF0301	5077	LSU	27							
	MEF0301	5078	LSU	35							
	MEF0304	1110	LNC	121							
	MEF0304	1111	LNC	29							
	MEF0304	1112	LNC	27							
	MEF0304	1113	LNC	84							
	MEF0304	1114	LNC	64							
	MEF0304	1115	LNC	85							
	MEF0304	1116	LNC	31							
	MEF0304	1117	LNC	26							
	MEF0304	1118	LNC	28							
	MEF0304	1119	LNC	57							
	MEF0304	3849	RSC	92							
	MEF0304	3850	RSC	29							
	MEF0304	4262	CCG	20							
	MEF0304	4569	CCG	69							
	MEF0304	4570	CCG	56							
	MEF0304	4571	CCG	59							
	MEF0304	4572	CCG	64							
	MEF0304	4573	CCG	69							
	MEF0304	4574	CCG	61							
	MEF0304	4575	CCG	32							
	MEF0304	4576	CCG	33							
	MEF0304	4577	CCG	35							
	MEF1301	254	BB	171							
	MEF1301	1275	LNC	30							
	MEF1301	1276	LNC	67							
	MEF1301	2106	LSU	165							
	MEF1301	4622	CCG	31							
	MEF1301	4623	CCG	67							
	MEF1301	4624	CCG	68							
	MEF1301	4625	CCG	56							
	MEF1301	4626	CCG	28							
	MEF1302	255	BB	170							
	MEF1302	256	BB	172							
	MEF1302	3950	RSC	52							
	MEF1302	3951	RSC	50							
	MEF1302	3952	RSC	53							
	MEF1302	3953	RSC	57							
	MEF1302	3954	RSC	63							
	MEF1302	3955	RSC	46							
	MEF1302	3956	RSC	57							
	MEF1302	3957	RSC	58							
	MEF1302	3958	RSC	54							
	MEF1302	3959	RSC	58							
	MEF1302	4627	CCG	72							
	MEF1302	4628	CCG	67							
	MEF1302	4629	CCG	62							
04											
	HBS0402	284	LKC	36							
	HBS0402	285	LKC	38							
	HBS0402	286	LKC	35							
	HBS0402	287	LKC	32							
	HBS0402	288	LKC	35							
	HBS0402	289	LKC	35							
	HBS0402	290	LKC	33							
	HBS0402	291	LKC	31							
	HBS0402	292	LKC	34							
	HBS0402	293	LKC	30							
	HBS0402	294	LKC	33							
	HBS0402	295	LKC	33							
	HBS0402	296	LKC	80							
	HBS0402	589	LNC	24							
	HBS0402	590	LNC	16							
	HBS0402	591	LNC	18							
	HBS0402	592	LNC	23							
	HBS0402	593	LNC	21							
	HBS0402	594	LNC	23							
	HBS0402	595	LNC	21							
	HBS0402	596	LNC	20							
	HBS0402	597	LNC	17							
	HBS0402	598	LNC	22							
	HBS0402	599	LNC	18							
	HBS0402	1471	LSU	34							
	HBS0402	1472	LSU	36							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS0402	1473	LSU	33							
	HBS0402	1474	LSU	55							
	HBS0402	1475	LSU	33							
	HBS0402	1476	LSU	33							
	HBS0402	1477	LSU	49							
	HBS0402	1478	LSU	57							
	HBS0402	1479	LSU	32							
	HBS0402	1480	LSU	63							
	HBS0402	1481	LSU	61							
	HBS0402	1482	LSU	36							
	HBS0402	1483	LSU	67							
	HBS0402	1484	LSU	63							
	HBS0402	1485	LSU	50							
	HBS0402	1486	LSU	61							
	HBS0402	1487	LSU	55							
	HBS0402	1488	LSU	54							
	HBS0402	1489	LSU	63							
	HBS0402	1490	LSU	62							
	HBS0402	1491	LSU	59							
	HBS0402	1492	LSU	55							
	HBS0402	2484	MW	53							
	HBS0402	3498	RSC	25							
	HBS0402	3499	RSC	23							
	HBS0402	3500	RSC	25							
	HBS0402	3501	RSC	25							
	HBS0402	3502	RSC	22							
	HBS0402	3503	RSC	23							
	HBS0402	3504	RSC	20							
	HBS0402	3505	RSC	26							
	HBS0402	3506	RSC	21							
	HBS0402	3507	RSC	21							
	HBS0402	3508	RSC	50							
	HBS0402	3509	RSC	47							
	HBS0402	3510	RSC	70							
	HBS0402	4720	LSU	20							
	HBS0402	4721	LSU	24							
	HBS0402	4722	LSU	22							
	HBS0402	4723	LSU	23							
	HBS0402	4724	LSU	24							
	HBS0402	4725	LSU	21							
	HBS0402	4726	LSU	29							
	HBS0402	4727	LSU	24							
	HBS0402	4728	LSU	27							
	HBS0402	4729	LSU	22							
	HBS1501	273	FHC	55							
	HBS1501	319	LKC	21							
	HBS1501	320	LKC	83							
	HBS1501	321	LKC	61							
	HBS1501	322	LKC	80							
	HBS1501	651	LNC	28							
	HBS1501	652	LNC	26							
	HBS1501	653	LNC	28							
	HBS1501	654	LNC	22							
	HBS1501	655	LNC	31							
	HBS1501	656	LNC	18							
	HBS1501	657	LNC	18							
	HBS1501	658	LNC	27							
	HBS1501	659	LNC	22							
	HBS1501	660	LNC	24							
	HBS1501	661	LNC	20							
	HBS1501	662	LNC	23							
	HBS1501	663	LNC	23							
	HBS1501	664	LNC	20							
	HBS1501	1498	LSU	31							
	HBS1501	1499	LSU	33							
	HBS1501	1500	LSU	32							
	HBS1501	1501	LSU	185							
	HBS1501	1502	LSU	128							
	HBS1501	2195	CSU	60							
	HBS1501	2196	CSU	34							
	HBS1501	2197	CSU	37							
	HBS1501	2198	CSU	57							
	HBS1501	2199	CSU	53							
	HBS1501	2200	CSU	116							
	HBS1501	2201	CSU	77							
	HBS1501	2202	CSU	122							
	HBS1501	2203	CSU	146							
	HBS1501	2490	MW	65							
	HBS1501	3527	RSC	72							
	HBS1501	3528	RSC	64							
	HBS1501	3529	RSC	48							
	HBS1501	3530	RSC	30							
	HBS1501	3531	RSC	43							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS1501	3532	RSC	89							
	HBS1501	3533	RSC	80							
	HBS1501	3534	RSC	74							
	HBS1501	3535	RSC	73							
	HBS1501	4187	CCG	37							
	HBS1501	4188	CCG	33							
	HBS1501	4822	LSU	28							
	HBS1501	4823	LSU	25							
	HBS1501	4824	LSU	29							
	HBS1501	4825	CSU	22							
	HBS1501	4826	CSU	29							
	HBS1501	4827	CSU	30							
	HBS1501	4828	CSU	30							
	HBS1501	4829	CSU	25							
	HBS1501	4830	CSU	28							
	HBS1501	4831	CSU	30							
	HBS1501	4832	CSU	26							
	HBS1501	4833	CSU	23							
	HBS1501	4834	CSU	22							
	HBS1501	4835	CSU	24							
	HBS1501	4836	CSU	20							
	HBS1501	4837	CSU	29							
	HBS1501	4838	CSU	22							
	HBS1501	4839	CSU	21							
	HBS1501	4840	CSU	28							
	HBS1501	4841	CSU	28							
	HBS1501	4842	CSU	27							
	HBS1501	4843	LSU	22							
	HBS1501	4844	LSU	20							
	HBS1501	4845	LSU	23							
	HBS1501	4846	LSU	28							
	HBS1501	4847	LSU	28							
	HEF1501	864	LNC	68							
	HEF1501	865	LNC	71							
	HEF1501	866	LNC	43							
	HEF1501	867	LNC	33							
	HEF1501	868	LNC	18							
	HEF1501	869	LNC	80							
	HEF1501	4389	CCG	60							
	HEF1501	4390	CCG	83							
	HEF1502	1665	LSU	47							
	HEF1502	1666	LSU	86							
	HEF1502	4259	CCG	33							
	HEF1502	4391	CCG	87							
	HEF1502	4392	CCG	55							
	HEF1502	4393	CCG	71							
	HEF1502	4394	CCG	72							
	HEF1502	4395	CCG	83							
	HEF1502	4396	CCG	69							
	HEF1502	4397	CCG	59							
	HEF1502	4398	CCG	72							
	HEF1502	4399	CCG	69							
	HEF1502	4400	CCG	65							
	HEF1502	4401	CCG	58							
	HEF1502	4402	CCG	55							
	HEF1502	4403	CCG	66							
	HEF1502	4404	CCG	75							
	HEF1502	4405	CCG	56							
	HEF1502	4406	CCG	52							
	HEF1503	870	LNC	68							
	HEF1503	871	LNC	73							
	HEF1503	872	LNC	61							
	HEF1503	873	LNC	64							
	HEF1503	874	LNC	57							
	HEF1503	875	LNC	23							
	HEF1503	1667	LSU	61							
	HEF1503	1668	LSU	64							
	HEF1503	1669	LSU	46							
	HEF1503	4407	CCG	37							
	HEF1503	4408	CCG	31							
	HSF0401	33	GR	155			SC/OT				
	HSF0401	921	LNC	67							
	HSF0401	922	LNC	63							
	HSF0401	2341	CSU	446							
	HSF0401	2704	MW	285							
	HSF0401	2705	MW	261							
	HSF0401	2706	MW	131							
	HSF0401	2707	MW	138							
	HSF0401	2708	MW	132			SC				
	HSF0401	2709	MW	113							
	HSF0401	2710	MW	103			SC				
	HSF0401	2711	MW	119							
	HSF0401	2712	MW	136							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0401	2713	MW	144							
	HSF0401	4137	RB	189			SC				
	HSF0401	4451	CCG	80							
	HSF0401	4452	CCG	69							
	HSF0401	4453	CCG	84							
	HSF0402	184	BT	330							
	HSF0402	446	LKC	105							
	HSF0402	1784	LSU	107							
	HSF0402	1785	LSU	67							
	HSF0402	2714	MW	270							
	HSF0402	2715	MW	205							
	HSF0402	2716	MW	142							
	HSF0402	2717	MW	180							
	HSF0402	2718	MW	142							
	HSF0402	2719	MW	182		98	SC/OT				
	HSF0402	2720	MW	130							
	HSF0402	2721	MW	135							
	HSF0402	2722	MW	141							
	HSF0402	2723	MW	134							
	HSF0402	2724	MW	177							
	HSF0402	2725	MW	144							
	HSF0402	4138	RB	158			SC				
	HSF0403	185	BT	354							
	HSF0403	186	BT	415							
	HSF0403	923	LNC	71							
	HSF0403	1786	LSU	344							
	HSF0403	2726	MW	123							
	HSF0403	2727	MW	266							
	HSF0403	2728	MW	231							
	HSF0403	2729	MW	289							
	HSF0403	2730	MW	252							
	HSF0403	2731	MW	189							
	HSF0403	2732	MW	60			SC				
	HSF0403	2733	MW	75							
	HSF0403	2734	MW	243							
	HSF0403	2735	MW	181							
	HSF0403	2736	MW	177							
	HSF0403	2737	MW	127							
	HSF0403	2738	MW	193							
	HSF0403	2739	MW	220							
	HSF0404	34	GR	162			SC/OT				
	HSF0404	1787	LSU	374							
	HSF0404	1788	LSU	98							
	HSF0404	1789	LSU	67							
	HSF0404	2740	MW	234							
	HSF0404	2741	MW	287							
	HSF0404	2742	MW	245							
	HSF0404	2743	MW	254							
	HSF0404	2744	MW	116							
	HSF0404	2745	MW	133							
	HSF0404	2746	MW	60							
	HSF0404	2747	MW	77							
	HSF0404	2748	MW	128							
	HSF0404	2749	MW	193							
	HSF0404	2750	MW	187							
	HSF0404	2751	MW	65							
	HSF0404	2752	MW	81							
	HSF0404	2753	MW	67							
	HSF0404	2754	MW	70							
	HSF0404	4139	RB	267			SC				
	HSF0404	4140	RB	251			SC				
	HSF0404	4454	CCG	53							
	HSF0405	35	GR	143							
	HSF0405	187	BT	402							
	HSF0405	188	BT	331							
	HSF0405	189	BT	354							
	HSF0405	190	BT	243							
	HSF0405	191	BT	245							
	HSF0405	192	BT	174							
	HSF0405	1790	LSU	380							
	HSF0405	1791	LSU	344							
	HSF0405	1792	LSU	314							
	HSF0405	1793	LSU	335							
	HSF0405	1794	LSU	262							
	HSF0405	1795	LSU	237							
	HSF0405	1796	LSU	232							
	HSF0405	1797	LSU	167							
	HSF0405	1798	LSU	141							
	HSF0405	2755	MW	300							
	HSF0405	2756	MW	248							
	HSF0405	2757	MW	264							
	HSF0405	2758	MW	245							
	HSF0405	2759	MW	139							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0405	2760	MW	125							
	HSF0405	2761	MW	138							
	HSF0405	2762	MW	141							
	HSF0405	2763	MW	82							
	HSF0405	2764	MW	120							
	HSF0405	2765	MW	163							
	HSF0405	2766	MW	131							
	HSF0405	2767	MW	137							
	HSF0405	2768	MW	130							
	HSF0405	4141	RB	240							
	HSF0405	4142	RB	181							
	HSF0405	4143	RB	179							
	HSF0405	4144	RB	183							
	HSF0405	4145	RB	199							
	HSF0405	4146	RB	220							
	HSF0406	36	GR	151							
	HSF0406	37	GR	158							
	HSF0406	38	GR	221							
	HSF0406	39	GR	195							
	HSF0406	193	BT	160							
	HSF0406	194	BT	346							
	HSF0406	2769	MW	134							
	HSF0406	2770	MW	187							
	HSF0406	2771	MW	127							
	HSF0406	2772	MW	143							
	HSF0406	2773	MW	139							
	HSF0406	2774	MW	76							
	HSF0406	2775	MW	133							
	HSF0406	2776	MW	77							
	HSF0406	2777	MW	290							
	HSF0406	2778	MW	249							
	HSF0406	4147	RB	168							
	MBS0401	3819	RSC	28							
	MBS0401	3820	RSC	30							
	MBS0401	3821	RSC	26							
	MBS0401	3822	RSC	27							
	MBS0401	3823	RSC	23							
	MBS0401	3824	RSC	23							
	MBS0401	3825	RSC	24							
	MBS0401	3826	RSC	28							
	MBS0401	3827	RSC	26							
	MBS0401	3828	RSC	29							
	MBS0401	3829	RSC	23							
	MBS0401	3830	RSC	20							
	MBS0401	3831	RSC	22							
	MBS0401	3832	RSC	21							
	MBS0401	3833	RSC	23							
	MBS0401	3834	RSC	23							
	MBS0401	3835	RSC	22							
	MBS0401	3836	RSC	22							
	MBS0401	4992	WSC	18							
	MBS0401	4993	WSC	21							
	MBS0401	4994	WSC	21							
	MBS0401	4995	WSC	20							
	MBS0401	4996	WSC	19							
	MBS0401	4997	WSC	20							
	MBS0401	4998	WSC	21							
	MBS0401	4999	WSC	20							
	MBS0401	5246	TP	26							
	MBS0403	3464	NP	223			SC				
	MBS0403	4512	CCG	32							
	MBS0403	5000	WSC	19							
	MBS0403	5001	WSC	22							
	MBS0403	5002	WSC	18							
	MBS0403	5003	WSC	23							
	MBS0403	5004	WSC	19							
	MBS0403	5005	WSC	27							
	MBS0403	5006	WSC	29							
	MBS0403	5007	WSC	26							
	MBS0403	5008	WSC	28							
	MBS0403	5009	WSC	22							
	MEF0401	1120	LNC	23							
	MEF0401	1121	LNC	29							
	MEF0401	1122	LNC	21							
	MEF0401	1123	LNC	24							
	MEF0401	1124	LNC	26							
	MEF0401	1125	LNC	23							
	MEF0401	1126	LNC	21							
	MEF0401	1127	LNC	24							
	MEF0401	1128	LNC	24							
	MEF0401	1129	LNC	22							
	MEF0401	1130	LNC	22							
	MEF0401	2042	LSU	81							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0401	3851	RSC	23							
	MEF0401	3852	RSC	21							
	MEF0401	3853	RSC	20							
	MEF0401	3854	RSC	26							
	MEF0401	3855	RSC	26							
	MEF0401	3856	RSC	26							
	MEF0401	3857	RSC	19							
	MEF0401	3858	RSC	27							
	MEF0401	3859	RSC	20							
	MEF0401	3860	RSC	21							
	MEF0401	3861	RSC	16							
	MEF0401	3862	RSC	21							
	MEF0401	3863	RSC	23							
	MEF0401	5276	RSC	15							
	MEF0401	5277	RSC	13							
	MEF0401	5280	WSC	94							
	MEF0401	5281	WSC	81							
	MEF0401	5282	WSC	78							
	MEF0402	1131	LNC	85							
	MEF0402	1132	LNC	65							
	MEF0402	1133	LNC	22							
	MEF0402	1134	LNC	21							
	MEF0402	1135	LNC	23							
	MEF0402	1136	LNC	26							
	MEF0402	1137	LNC	33							
	MEF0402	1138	LNC	31							
	MEF0402	1139	LNC	23							
	MEF0402	1140	LNC	31							
	MEF0402	1141	LNC	25							
	MEF0402	1142	LNC	65							
	MEF0402	1143	LNC	47							
	MEF0402	1144	LNC	68							
	MEF0402	2043	LSU	40							
	MEF0402	2044	LSU	44							
	MEF0402	2045	LSU	38							
	MEF0402	2046	LSU	45							
	MEF0402	3864	RSC	24							
	MEF0402	3865	RSC	22							
	MEF0402	3866	RSC	23							
	MEF0402	3867	RSC	21							
	MEF0402	3868	RSC	29							
	MEF0402	3869	RSC	20							
	MEF0402	3870	RSC	74							
	MEF0402	3871	RSC	20							
	MEF0402	3872	RSC	21							
	MEF0402	3873	RSC	23							
	MEF0402	4263	CCG	25							
	MEF0402	4264	CCG	25							
	MEF0402	4578	CCG	32							
	MEF0402	4579	CCG	65							
	MEF0402	4580	CCG	57							
	MEF0402	5079	WSC	23							
	MEF0402	5080	WSC	28							
	MEF0402	5081	WSC	27							
	MEF0402	5082	WSC	25							
	MEF0402	5083	WSC	32							
	MEF0402	5084	WSC	26							
	MEF0402	5085	WSC	27							
	MEF0402	5086	WSC	22							
	MEF0402	5087	WSC	26							
	MEF0402	5088	WSC	32							
	MEF1401	257	BB	130							
	MEF1401	3960	RSC	21							
	MEF1401	3961	RSC	19							
	MEF1401	3962	RSC	18							
	MEF1401	3963	RSC	24							
	MEF1401	3964	RSC	20							
	MEF1401	3965	RSC	25							
	MEF1401	3966	RSC	15							
	MEF1401	3967	RSC	16							
	MEF1401	3968	RSC	23							
	MEF1401	3969	RSC	24							
	MEF1401	3970	RSC	27							
	MEF1401	3971	RSC	20							
	MEF1401	4630	CCG	72							
	MEF1401	5146	WSC	17							
	MEF1401	5147	WSC	19							
	MEF1401	5285	WSC	141							
	MEF1402	114	GR	73			SC				
	MEF1402	258	BB	175							
	MEF1402	259	BB	129							
	MEF1402	3469	NP	158			SC				
	MEF1402	3972	RSC	74							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1402	3973	RSC	89							
	MEF1402	3974	RSC	95							
	MEF1402	3975	RSC	80							
	MEF1402	4631	CCG	74							
	MEF1402	4632	CCG	62							
	MEF1402	4633	CCG	58							
	MEF1402	4634	CCG	32							
	MEF1402	4635	CCG	72							
	MEF1402	4636	CCG	74							
	MEF1402	4637	CCG	30							
	MEF1402	4638	CCG	25							
	MEF1402	4639	CCG	62							
	MEF1402	4640	CCG	35							
05											
	HEF0506	337	LKC	35							
	HEF0506	338	LKC	40							
	HEF0506	339	LKC	43							
	HEF0506	340	LKC	34							
	HEF0506	341	LKC	40							
	HEF0506	342	LKC	38							
	HEF0506	343	LKC	29							
	HEF0506	344	LKC	47							
	HEF0506	345	LKC	39							
	HEF0506	346	LKC	38							
	HEF0506	695	LNC	24							
	HEF0506	696	LNC	27							
	HEF0506	697	LNC	27							
	HEF0506	698	LNC	32							
	HEF0506	699	LNC	33							
	HEF0506	700	LNC	28							
	HEF0506	701	LNC	26							
	HEF0506	702	LNC	29							
	HEF0506	703	LNC	23							
	HEF0506	704	LNC	23							
	HEF0506	1519	LSU	58							
	HEF0506	1520	LSU	68							
	HEF0506	1521	LSU	69							
	HEF0506	1522	LSU	65							
	HEF0506	1523	LSU	58							
	HEF0506	1524	LSU	63							
	HEF0506	1525	LSU	63							
	HEF0506	1526	LSU	60							
	HEF0506	1527	LSU	63							
	HEF0506	1528	LSU	61							
	HEF0506	1529	LSU	137							
	HEF0506	2232	CSU	33							
	HEF0506	2233	CSU	61							
	HEF0506	2234	CSU	71							
	HEF0506	2235	CSU	52							
	HEF0506	2236	CSU	36							
	HEF0506	2237	CSU	50							
	HEF0506	2238	CSU	63							
	HEF0506	2239	CSU	37							
	HEF0506	2240	CSU	63							
	HEF0506	2241	CSU	58							
	HEF0506	2242	CSU	48							
	HEF0506	3594	RSC	46							
	HEF0506	4868	CSU	28							
	HEF0506	4869	CSU	28							
	HEF0506	4870	CSU	20							
	HEF0506	4871	CSU	31							
	HEF0506	4872	CSU	23							
	HEF0506	4873	CSU	26							
	HEF0506	4874	CSU	24							
	HEF0506	4875	CSU	27							
	HEF0506	4876	LSU	19							
	HEF0506	4877	LSU	26							
	HEF1504	2	GR	74			SC				
	HEF1504	3	GR	74							
	HEF1504	417	LKC	72							
	HEF1504	418	LKC	57							
	HEF1504	419	LKC	80							
	HEF1504	420	LKC	75							
	HEF1504	876	LNC	63							
	HEF1504	877	LNC	55							
	HEF1504	878	LNC	82							
	HEF1504	1670	LSU	70							
	HEF1504	1671	LSU	68							
	HEF1504	1672	LSU	33							
	HEF1504	2513	MW	61							
	HEF1504	4409	CCG	68							
	HEF1504	4410	CCG	75							
	HEF1504	4411	CCG	77							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1504	4412	CCG	58							
	HEF1504	4413	CCG	63							
	HEF1504	4414	CCG	52							
	HEF1504	4415	CCG	27							
	HEF1504	4416	CCG	75							
	HEF1505	879	LNC	53							
	HEF1505	880	LNC	52							
	HEF1505	881	LNC	64							
	HEF1505	1673	LSU	110							
	HEF1505	1674	LSU	54							
	HEF1505	1675	LSU	110							
	HEF1505	1676	LSU	33							
	HEF1505	1677	LSU	30							
	HEF1505	1678	LSU	33							
	HEF1505	1679	LSU	30							
	HEF1505	1680	LSU	37							
	HEF1505	1681	LSU	30							
	HEF1505	1682	LSU	63							
	HEF1505	1683	LSU	45							
	HEF1505	1684	LSU	28							
	HEF1505	1685	LSU	32							
	HEF1505	1686	LSU	32							
	HEF1505	4417	CCG	77							
	HEF1505	4418	CCG	35							
	HEF1505	4419	CCG	32							
	HEF1505	4420	CCG	37							
	HEF1505	4421	CCG	30							
	HEF1505	4422	CCG	32							
	HEF1505	4423	CCG	31							
	HEF1506	882	LNC	88							
	HEF1506	1687	LSU	92							
	HEF1506	1688	LSU	66							
	HEF1506	4110	RB	49			SC				
	HEF1506	4111	RB	46							
	HEF1506	4260	CCG	29							
	HEF1506	4424	CCG	73							
	HEF1506	4425	CCG	59							
	HEF1506	4426	CCG	70							
	HEF1507	421	LKC	61							
	HEF1507	422	LKC	61							
	HEF1507	423	LKC	32							
	HEF1507	883	LNC	23							
	HEF1507	884	LNC	20							
	HEF1507	885	LNC	25							
	HEF1507	886	LNC	24							
	HEF1507	887	LNC	13							
	HEF1507	888	LNC	22							
	HEF1507	889	LNC	18							
	HEF1507	890	LNC	23							
	HEF1507	891	LNC	21							
	HEF1507	892	LNC	20							
	HEF1507	1689	LSU	43							
	HEF1507	1690	LSU	69							
	HEF1507	1691	LSU	39							
	HEF1507	1692	LSU	33							
	HEF1507	1693	LSU	33							
	HEF1507	1694	LSU	42							
	HEF1507	1695	LSU	109							
	HEF1507	1696	LSU	34							
	HEF1507	1697	LSU	72							
	HEF1507	1698	LSU	67							
	HEF1507	1699	LSU	84							
	HEF1507	1700	LSU	81							
	HEF1507	1701	LSU	92							
	HEF1507	2514	MW	63							
	HEF1507	2515	MW	58							
	HEF1507	2516	MW	62							
	HEF1507	2517	MW	53							
	HEF1507	2518	MW	56							
	HEF1507	2519	MW	64							
	HEF1507	2520	MW	57							
	HEF1507	2521	MW	54							
	HEF1507	2522	MW	53							
	HEF1507	2523	MW	68							
	HEF1507	2524	MW	59							
	HEF1507	3630	RSC	46							
	HEF1507	4427	CCG	83							
	HEF1507	4428	CCG	79							
	HEF1507	4429	CCG	77							
	HEF1507	4430	CCG	55							
	HEF1507	4431	CCG	82							
	HEF1507	4432	CCG	71							
	HEF1507	4433	CCG	66							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1507	4434	CCG	66							
	HEF1507	4435	CCG	27							
	HEF1507	4436	CCG	77							
	HEF1507	4944	LSU	28							
	HEF1507	4945	LSU	19							
	HEF1507	4946	LSU	30							
	HEF1507	4947	LSU	18							
	HEF1507	4948	LSU	28							
	HEF1507	4949	LSU	30							
	HEF1507	4950	LSU	22							
	HEF1507	4951	LSU	22							
	HEF1507	4952	LSU	23							
	HEF1507	4953	LSU	19							
	HEF1507	4954	LSU	23							
	HEF1508	1702	LSU	128							
	HEF1508	1703	LSU	106							
	HEF1508	1704	LSU	69							
	HEF1508	1705	LSU	31							
	HEF1508	1706	LSU	77							
	HEF1508	1707	LSU	63							
	HEF1508	1708	LSU	70							
	HEF1508	1709	LSU	63							
	HEF1508	3631	RSC	84							
	HEF1508	4437	CCG	84							
	HSF0501	40	GR	156			SC				
	HSF0501	41	GR	254		12	SC/OT				
	HSF0501	924	LNC	64							
	HSF0501	2779	MW	224							
	HSF0501	2780	MW	222							
	HSF0501	2781	MW	190							
	HSF0501	2782	MW	133							
	HSF0501	2783	MW	126							
	HSF0501	2784	MW	139							
	HSF0501	2785	MW	129							
	HSF0501	2786	MW	82							
	HSF0501	2787	MW	80							
	HSF0501	2788	MW	127							
	HSF0501	2789	MW	122							
	HSF0501	2790	MW	139							
	HSF0501	2791	MW	133							
	HSF0501	2792	MW	73							
	HSF0501	2793	MW	78							
	HSF0501	2794	MW	255		2	SC/OT				
	HSF0502	42	GR	191		11	SC/OT				
	HSF0502	43	GR	285		2	SC/OT				
	HSF0502	195	BT	290			FR				
	HSF0502	196	BT	261			FR				
	HSF0502	925	LNC	63							
	HSF0502	2795	MW	254							
	HSF0502	2796	MW	276							
	HSF0502	2797	MW	292							
	HSF0502	2798	MW	194							
	HSF0502	2799	MW	194							
	HSF0502	2800	MW	135							
	HSF0502	2801	MW	134							
	HSF0502	2802	MW	134							
	HSF0502	2803	MW	128							
	HSF0502	2804	MW	156							
	HSF0502	2805	MW	77							
	HSF0502	2806	MW	75							
	HSF0502	2807	MW	80							
	HSF0502	2808	MW	73							
	HSF0502	2809	MW	80							
	HSF0502	4148	RB	178			SC				
	HSF0502	4455	CCG	67							
	HSF0503	926	LNC	44							
	HSF0503	927	LNC	48							
	HSF0503	2810	MW	74							
	HSF0503	2811	MW	75							
	HSF0503	2812	MW	133							
	HSF0503	2813	MW	74							
	HSF0503	2814	MW	75							
	HSF0503	2815	MW	134							
	HSF0503	2816	MW	133							
	HSF0503	2817	MW	76							
	HSF0503	2818	MW	72							
	HSF0503	2819	MW	120							
	HSF0503	2820	MW	134							
	HSF0503	2821	MW	313							
	HSF0503	2822	MW	251							
	HSF0503	2823	MW	280							
	HSF0503	2824	MW	211							
	HSF0503	2825	MW	322		12	SC/OT				

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0503	3652	RSC	83							
	HSF0503	4456	CCG	70							
	HSF0504	44	GR	65			SC				
	HSF0504	197	BT	265			FR				
	HSF0504	1799	LSU	57							
	HSF0504	1800	LSU	101							
	HSF0504	2826	MW	131							
	HSF0504	2827	MW	74							
	HSF0504	2828	MW	83							
	HSF0504	2829	MW	129							
	HSF0504	2830	MW	126							
	HSF0504	2831	MW	70							
	HSF0504	2832	MW	130							
	HSF0504	2833	MW	134							
	HSF0504	2834	MW	131							
	HSF0504	2835	MW	133							
	HSF0504	2836	MW	148							
	HSF0504	2837	MW	137							
	HSF0504	2838	MW	75							
	HSF0504	4149	RB	231			SC				
	HSF0504	4150	RB	232			SC				
	HSF0505	45	GR	78			SC				
	HSF0505	2839	MW	143							
	HSF0505	2840	MW	124							
	HSF0505	2841	MW	138							
	HSF0505	2842	MW	141							
	HSF0505	2843	MW	124							
	HSF0505	2844	MW	78							
	HSF0505	2845	MW	76							
	HSF0505	2846	MW	123							
	HSF0505	2847	MW	119							
	HSF0505	2848	MW	71							
	HSF0505	2849	MW	86							
	HSF0505	2850	MW	140							
	HSF0505	2851	MW	136							
	HSF0505	2852	MW	78							
	HSF0505	2853	MW	130							
	HSF0505	2854	MW	130							
	HSF0505	2855	MW	132							
	HSF0505	4151	RB	228			SC				
	HSF0506	928	LNC	79							
	HSF0506	1801	LSU	101							
	HSF0506	2856	MW	72							
	HSF0506	2857	MW	174							
	HSF0506	2858	MW	133							
	HSF0506	2859	MW	138							
	HSF0506	2860	MW	192							
	HSF0506	2861	MW	134							
	HSF0506	2862	MW	130							
	HSF0506	2863	MW	149							
	HSF0506	2864	MW	81							
	HSF0507	198	BT	207			SC				
	HSF0507	929	LNC	75							
	HSF0507	930	LNC	69							
	HSF0507	931	LNC	95							
	HSF0507	932	LNC	59							
	HSF0507	1802	LSU	110							
	HSF0507	1803	LSU	91							
	HSF0507	1804	LSU	108							
	HSF0507	2865	MW	347							
	HSF0507	2866	MW	266							
	HSF0507	2867	MW	262							
	HSF0507	2868	MW	273							
	HSF0507	2869	MW	168							
	HSF0507	2870	MW	138							
	HSF0507	2871	MW	120							
	HSF0507	2872	MW	73							
	HSF0507	2873	MW	130							
	HSF0507	2874	MW	61							
	HSF0507	2875	MW	73							
	HSF0507	2876	MW	74							
	HSF0507	4152	RB	275			SC				
	HSF0507	4153	RB	184			SC				
	HSF0507	4154	RB	177			SC				
	HSF0507	4457	CCG	82							
	HSF0507	4458	CCG	78							
	HSF0507	4459	CCG	88							
	HSF0507	4460	CCG	80							
	MEF0501	243	BB	169							
	MEF0501	1145	LNC	71							
	MEF0501	1146	LNC	17							
	MEF0501	1147	LNC	28							
	MEF0501	1148	LNC	57							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0501	1149	LNC	14							
	MEF0501	1150	LNC	71							
	MEF0501	1151	LNC	24							
	MEF0501	1152	LNC	33							
	MEF0501	1153	LNC	33							
	MEF0501	1154	LNC	31							
	MEF0501	2047	LSU	197							
	MEF0501	2048	LSU	174							
	MEF0501	2049	LSU	200							
	MEF0501	2050	LSU	194							
	MEF0501	2051	LSU	172							
	MEF0501	2052	LSU	163							
	MEF0501	2053	LSU	174							
	MEF0501	3874	RSC	73							
	MEF0501	3875	RSC	73							
	MEF0501	4581	CCG	70							
	MEF0501	4582	CCG	76							
	MEF0501	4583	CCG	71							
	MEF0501	4584	CCG	76							
	MEF0501	4585	CCG	75							
	MEF0501	4586	CCG	61							
	MEF0501	4587	CCG	73							
	MEF0501	4588	CCG	65							
	MEF0501	4589	CCG	71							
	MEF0501	4590	CCG	71							
	MEF0501	4591	CCG	61							
	MEF0501	4592	CCG	59							
	MEF0502	244	BB	220							
	MEF0502	245	BB	143							
	MEF0502	1155	LNC	32							
	MEF0502	1156	LNC	22							
	MEF0502	1157	LNC	27							
	MEF0502	1158	LNC	18							
	MEF0502	1159	LNC	28							
	MEF0502	1160	LNC	28							
	MEF0502	1161	LNC	28							
	MEF0502	1162	LNC	26							
	MEF0502	1163	LNC	27							
	MEF0502	1164	LNC	26							
	MEF0502	2054	LSU	36							
	MEF0502	2055	LSU	35							
	MEF0502	3876	RSC	104							
	MEF0502	3877	RSC	101							
	MEF0502	3878	RSC	82							
	MEF0502	3879	RSC	79							
	MEF0502	3880	RSC	100							
	MEF0502	3881	RSC	92							
	MEF0502	3882	RSC	19							
	MEF0502	3883	RSC	27							
	MEF0502	3884	RSC	20							
	MEF0502	3885	RSC	24							
	MEF0502	3886	RSC	18							
	MEF0502	3887	RSC	22							
	MEF0502	3888	RSC	18							
	MEF0502	3889	RSC	20							
	MEF0502	3890	RSC	99							
	MEF0502	3891	RSC	23							
	MEF0502	3892	RSC	53							
	MEF0502	3893	RSC	55							
	MEF0502	3894	RSC	102							
	MEF0502	3895	RSC	22							
	MEF0502	3896	RSC	83							
	MEF0502	3897	RSC	93							
	MEF0502	4593	CCG	55							
	MEF0502	4594	CCG	35							
	MEF0502	4595	CCG	72							
	MEF0502	4596	CCG	60							
	MEF0502	4597	CCG	32							
	MEF0502	4598	CCG	30							
	MEF0502	5089	LSU	33							
	MEF0502	5090	LSU	22							
	MEF0502	5091	LSU	25							
	MEF0502	5092	LSU	29							
	MEF0502	5093	LSU	23							
	MEF0502	5094	LSU	24							
	MEF1501	260	BB	205							
	MEF1501	1277	LNC	28							
	MEF1501	1278	LNC	33							
	MEF1501	1279	LNC	68							
	MEF1501	1280	LNC	60							
	MEF1501	1281	LNC	26							
	MEF1501	1282	LNC	31							
	MEF1501	3976	RSC	32							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1501	3977	RSC	25							
	MEF1501	4641	CCG	20							
	MEF1501	4642	CCG	66							
	MEF1501	4643	CCG	78							
	MEF1501	4644	CCG	36							
	MEF1501	4645	CCG	35							
	MEF1501	4646	CCG	57							
	MEF1501	4647	CCG	33							
	MEF1501	4648	CCG	32							
	MEF1501	4649	CCG	62							
	MEF1501	4650	CCG	34							
	MEF1502	261	BB	123							
	MEF1502	262	BB	132							
	MEF1502	1283	LNC	82							
	MEF1502	1284	LNC	28							
	MEF1502	1285	LNC	32							
	MEF1502	3470	NP	155			SC				
	MEF1502	3471	NP	132			SC				
	MEF1502	3472	NP	123			SC				
	MEF1502	3978	RSC	26							
	MEF1502	3979	RSC	17							
	MEF1502	3980	RSC	18							
	MEF1502	4651	CCG	71							
	MEF1502	4652	CCG	29							
	MEF1502	4653	CCG	68							
	MEF1502	4654	CCG	55							
	MEF1502	4655	CCG	54							
	MEF1502	4656	CCG	64							
	MEF1502	4657	CCG	67							
	MEF1502	4658	CCG	32							
	MEF1502	5148	LSU	23							
	MEF1502	5149	LSU	22							
	MEF1502	5150	LSU	26							
	MEF1503	115	GR	68			SC				
	MEF1503	116	GR	74			SC				
	MEF1503	263	BB	142							
	MEF1503	1286	LNC	23							
	MEF1503	1287	LNC	25							
	MEF1503	1288	LNC	26							
	MEF1503	1289	LNC	18							
	MEF1503	1290	LNC	23							
	MEF1503	1291	LNC	24							
	MEF1503	1292	LNC	27							
	MEF1503	1293	LNC	15							
	MEF1503	1294	LNC	25							
	MEF1503	1295	LNC	14							
	MEF1503	1296	LNC	17							
	MEF1503	2107	LSU	40							
	MEF1503	2108	LSU	42							
	MEF1503	2109	LSU	42							
	MEF1503	3981	RSC	22							
	MEF1503	3982	RSC	22							
	MEF1503	3983	RSC	22							
	MEF1503	3984	RSC	23							
	MEF1503	4659	CCG	64							
	MEF1503	4660	CCG	81							
	MEF1503	4661	CCG	30							
	MEF1503	5151	LSU	23							
	MEF1503	5152	LSU	26							
	MEF1503	5153	LSU	28							
	MEF1503	5154	LSU	27							
	MEF1503	5155	LSU	33							
	MEF1503	5156	LSU	27							
	MEF1503	5157	LSU	30							
06											
	HBS1601	665	LNC	24							
	HBS1601	666	LNC	18							
	HBS1601	667	LNC	22							
	HBS1601	668	LNC	15							
	HBS1601	669	LNC	20							
	HBS1601	670	LNC	23							
	HBS1601	671	LNC	19							
	HBS1601	672	LNC	23							
	HBS1601	673	LNC	22							
	HBS1601	674	LNC	21							
	HBS1601	1503	LSU	31							
	HBS1601	2491	MW	78							
	HBS1601	4848	CSU	20							
	HBS1601	4849	CSU	29							
	HBS1601	4850	CSU	23							
	HBS1601	4851	CSU	22							
	HBS1601	4852	CSU	23							
	HBS1601	4853	CSU	21							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS1601	4854	CSU	22							
	HBS1601	4855	CSU	25							
	HBS1601	4856	CSU	29							
	HBS1601	4857	CSU	18							
	HEF0602	347	LKC	77							
	HEF0602	348	LKC	66							
	HEF0602	349	LKC	74							
	HEF0602	350	LKC	86							
	HEF0602	351	LKC	63							
	HEF0602	352	LKC	66							
	HEF0602	353	LKC	79							
	HEF0602	354	LKC	65							
	HEF0602	355	LKC	49							
	HEF0602	356	LKC	44							
	HEF0602	705	LNC	43							
	HEF0602	706	LNC	24							
	HEF0602	707	LNC	22							
	HEF0602	708	LNC	48							
	HEF0602	709	LNC	24							
	HEF0602	710	LNC	69							
	HEF0602	711	LNC	54							
	HEF0602	712	LNC	45							
	HEF0602	713	LNC	25							
	HEF0602	1530	LSU	57							
	HEF0602	1531	LSU	67							
	HEF0602	1532	LSU	73							
	HEF0602	1533	LSU	67							
	HEF0602	1534	LSU	67							
	HEF0602	1535	LSU	34							
	HEF0602	1536	LSU	35							
	HEF0602	1537	LSU	32							
	HEF0602	1538	LSU	138							
	HEF0602	1539	LSU	111							
	HEF0602	1540	LSU	34							
	HEF0602	2495	MW	55							
	HEF0602	2496	MW	62							
	HEF0602	2497	MW	61							
	HEF0602	3595	RSC	25							
	HEF0602	4294	CCG	32							
	HEF0602	4295	CCG	28							
	HEF0602	4296	CCG	77							
	HEF0602	4297	CCG	31							
	HEF0602	4298	CCG	74							
	HEF0602	4299	CCG	33							
	HEF0602	4878	CSU	26							
	HEF0602	4879	CSU	22							
	HEF0602	4880	LSU	23							
	HEF0602	4881	LSU	29							
	HEF0602	4882	LSU	23							
	HEF0603	357	LKC	58							
	HEF0603	358	LKC	49							
	HEF0603	359	LKC	58							
	HEF0603	360	LKC	69							
	HEF0603	361	LKC	67							
	HEF0603	362	LKC	77							
	HEF0603	363	LKC	74							
	HEF0603	364	LKC	65							
	HEF0603	365	LKC	77							
	HEF0603	366	LKC	69							
	HEF0603	714	LNC	52							
	HEF0603	715	LNC	53							
	HEF0603	716	LNC	87							
	HEF0603	1541	LSU	48							
	HEF0603	1542	LSU	70							
	HEF0603	1543	LSU	67							
	HEF0603	1544	LSU	74							
	HEF0603	1545	LSU	41							
	HEF0603	1546	LSU	41							
	HEF0603	1547	LSU	78							
	HEF0603	1548	LSU	73							
	HEF0603	1549	LSU	78							
	HEF0603	1550	LSU	79							
	HEF0603	2243	CSU	72							
	HEF0603	2244	CSU	68							
	HEF0603	2245	CSU	37							
	HEF0603	2498	MW	64							
	HEF0603	4300	CCG	32							
	HEF0605	717	LNC	22							
	HEF0605	718	LNC	28							
	HEF0605	3596	RSC	72							
	HEF0605	4301	CCG	81							
	HEF0605	4302	CCG	85							
	HEF0605	4303	CCG	69							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF0605	4304	CCG	65							
	HEF0605	4305	CCG	65							
	HEF0605	4306	CCG	68							
	HEF0605	4883	LSU	17							
	HEF0605	4884	LSU	22							
	HEF0605	4885	LSU	20							
	HEF0605	4886	LSU	25							
	HEF1601	424	LKC	48							
	HEF1601	425	LKC	55							
	HEF1601	426	LKC	56							
	HEF1601	427	LKC	55							
	HEF1601	893	LNC	22							
	HEF1601	894	LNC	24							
	HEF1601	895	LNC	26							
	HEF1601	896	LNC	21							
	HEF1601	897	LNC	24							
	HEF1601	898	LNC	18							
	HEF1601	899	LNC	18							
	HEF1601	900	LNC	19							
	HEF1601	901	LNC	41							
	HEF1601	902	LNC	18							
	HEF1601	1710	LSU	42							
	HEF1601	1711	LSU	45							
	HEF1601	1712	LSU	39							
	HEF1601	1713	LSU	38							
	HEF1601	1714	LSU	41							
	HEF1601	1715	LSU	53							
	HEF1601	1716	LSU	43							
	HEF1601	1717	LSU	34							
	HEF1601	1718	LSU	71							
	HEF1601	1719	LSU	44							
	HEF1601	2295	CSU	58							
	HEF1601	2296	CSU	31							
	HEF1601	2297	CSU	33							
	HEF1601	2298	CSU	32							
	HEF1601	3632	RSC	21							
	HEF1601	3633	RSC	56							
	HEF1601	3634	RSC	15							
	HEF1601	4438	CCG	35							
	HEF1601	4955	LSU	27							
	HEF1601	4956	LSU	33							
	HEF1601	4957	LSU	32							
	HEF1601	4958	LSU	33							
	HEF1601	4959	LSU	19							
	HEF1601	4960	LSU	34							
	HEF1601	4961	LSU	32							
	HEF1601	4962	LSU	28							
	HEF1601	4963	LSU	30							
	HEF1601	4964	LSU	36							
	HSF0601	46	GR	148			SC				
	HSF0601	47	GR	161		99	SC/OT				
	HSF0601	447	LKC	64							
	HSF0601	933	LNC	58							
	HSF0601	934	LNC	69							
	HSF0601	935	LNC	62							
	HSF0601	1805	LSU	105							
	HSF0601	1806	LSU	154							
	HSF0601	2877	MW	133							
	HSF0601	2878	MW	130							
	HSF0601	2879	MW	136							
	HSF0601	2880	MW	147							
	HSF0601	2881	MW	135							
	HSF0601	2882	MW	83							
	HSF0601	2883	MW	80							
	HSF0601	2884	MW	76							
	HSF0601	2885	MW	72							
	HSF0601	2886	MW	63							
	HSF0601	3653	RSC	72							
	HSF0601	4155	RB	215			SC				
	HSF0601	4461	CCG	65							
	HSF0601	4462	CCG	72							
	HSF0602	48	GR	178		1	SC/OT				
	HSF0602	199	BT	304			FR				
	HSF0602	200	BT	254			FR				
	HSF0602	201	BT	207			SC				
	HSF0602	2887	MW	74							
	HSF0602	2888	MW	71							
	HSF0602	2889	MW	70							
	HSF0602	2890	MW	74							
	HSF0602	2891	MW	73							
	HSF0602	2892	MW	121							
	HSF0602	2893	MW	135							
	HSF0602	2894	MW	125							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0602	2895	MW	136							
	HSF0602	2896	MW	139							
	HSF0602	2897	MW	142							
	HSF0602	2898	MW	264		1	SC/OT				
	HSF0602	2899	MW	235		2	SC/OT				
	HSF0603	936	LNC	62							
	HSF0603	937	LNC	63							
	HSF0603	938	LNC	62							
	HSF0603	1807	LSU	106							
	HSF0603	1808	LSU	103							
	HSF0603	2900	MW	142							
	HSF0603	2901	MW	136							
	HSF0603	2902	MW	134							
	HSF0603	2903	MW	76							
	HSF0603	2904	MW	82							
	HSF0603	2905	MW	81							
	HSF0603	2906	MW	77							
	HSF0603	2907	MW	82							
	HSF0603	2908	MW	70							
	HSF0603	2909	MW	69							
	HSF0603	2910	MW	232		11	SC/OT				
	HSF0603	3654	RSC	94							
	HSF0603	4156	RB	274			SC				
	HSF0603	4157	RB	306			SC				
	HSF0603	4463	CCG	61							
	HSF0605	49	GR	165			SC				
	HSF0605	202	BT	327			FR				
	HSF0605	203	BT	233			SC				
	HSF0605	939	LNC	66							
	HSF0605	1809	LSU	122							
	HSF0605	2911	MW	76							
	HSF0605	2912	MW	71							
	HSF0605	2913	MW	72							
	HSF0605	2914	MW	71							
	HSF0605	2915	MW	61							
	HSF0605	2916	MW	149							
	HSF0605	2917	MW	130							
	HSF0605	2918	MW	138							
	HSF0605	2919	MW	143							
	HSF0605	2920	MW	133							
	HSF0605	2921	MW	214			SC/OT				
	HSF0605	4158	RB	230			SC				
	HSF0606	50	GR	138			SC				
	HSF0606	940	LNC	71							
	HSF0606	1810	LSU	260							
	HSF0606	1811	LSU	153							
	HSF0606	2342	CSU	196							
	HSF0606	2922	MW	175							
	HSF0606	2923	MW	176							
	HSF0606	2924	MW	126							
	HSF0606	2925	MW	137							
	HSF0606	2926	MW	140							
	HSF0606	2927	MW	78							
	HSF0606	2928	MW	62							
	HSF0606	2929	MW	71							
	HSF0606	2930	MW	79							
	HSF0606	2931	MW	75							
	HSF0606	2932	MW	72							
	HSF0606	3655	RSC	81							
	HSF0606	3656	RSC	79							
	HSF0606	4159	RB	221							
	HSF0606	4160	RB	239			SC				
	MBS1601	1028	LNC	36							
	MBS1601	1029	LNC	16							
	MBS1601	3838	RSC	29							
	MBS1601	3839	RSC	23							
	MBS1601	3840	RSC	20							
	MBS1601	3841	RSC	29							
	MBS1601	3842	RSC	25							
	MBS1601	3843	RSC	27							
	MBS1601	3844	RSC	30							
	MBS1601	3845	RSC	27							
	MBS1601	3846	RSC	30							
	MBS1601	3847	RSC	27							
	MBS1601	3848	RSC	28							
	MBS1601	5039	LSU	24							
	MBS1601	5040	LSU	22							
	MBS1601	5041	LSU	20							
	MBS1601	5042	LSU	21							
	MBS1601	5043	LSU	22							
	MBS1601	5044	LSU	23							
	MBS1601	5045	LSU	21							
	MBS1601	5046	LSU	20							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MBS1601	5047	LSU	18							
	MBS1601	5048	LSU	19							
	MEF0601	492	LKC	24							
	MEF0601	1165	LNC	24							
	MEF0601	1166	LNC	26							
	MEF0601	1167	LNC	17							
	MEF0601	1168	LNC	23							
	MEF0601	1169	LNC	26							
	MEF0601	1170	LNC	26							
	MEF0601	1171	LNC	24							
	MEF0601	1172	LNC	26							
	MEF0601	1173	LNC	28							
	MEF0601	1174	LNC	21							
	MEF0601	1175	LNC	81							
	MEF0601	1176	LNC	71							
	MEF0601	2056	LSU	41							
	MEF0601	2057	LSU	39							
	MEF0601	2058	LSU	44							
	MEF0601	3898	RSC	31							
	MEF0601	4599	CCG	34							
	MEF0601	4600	CCG	76							
	MEF0601	4601	CCG	68							
	MEF0601	4602	CCG	34							
	MEF0601	4603	CCG	33							
	MEF0601	4604	CCG	36							
	MEF0601	4605	CCG	31							
	MEF0601	4606	CCG	32							
	MEF0601	4607	CCG	24							
	MEF0601	4608	CCG	22							
	MEF0601	4609	CCG	67							
	MEF0601	4610	CCG	30							
	MEF0601	5095	WSC	22							
	MEF0601	5096	WSC	27							
	MEF0601	5097	WSC	23							
	MEF0601	5098	WSC	29							
	MEF0601	5099	WSC	27							
	MEF0601	5100	LSU	26							
	MEF0601	5101	LSU	24							
	MEF0601	5102	LSU	24							
	MEF0601	5103	LSU	20							
	MEF0602	246	BB	160							
	MEF0602	247	BB	172							
	MEF0602	1177	LNC	73							
	MEF0602	1178	LNC	66							
	MEF0602	1179	LNC	26							
	MEF0602	1180	LNC	32							
	MEF0602	1181	LNC	24							
	MEF0602	1182	LNC	72							
	MEF0602	1183	LNC	36							
	MEF0602	1184	LNC	28							
	MEF0602	1185	LNC	32							
	MEF0602	1186	LNC	32							
	MEF0602	1187	LNC	57							
	MEF0602	1188	LNC	55							
	MEF0602	3467	NP	166			SC				
	MEF0602	4611	CCG	70							
	MEF0602	4612	CCG	68							
	MEF0602	4613	CCG	75							
	MEF0602	4614	CCG	30							
	MEF0602	4615	CCG	28							
	MEF0602	4616	CCG	75							
	MEF1601	264	BB	191							
	MEF1601	265	BB	77							
	MEF1601	266	BB	222							
	MEF1601	1297	LNC	20							
	MEF1601	1298	LNC	28							
	MEF1601	1299	LNC	68							
	MEF1601	1300	LNC	29							
	MEF1601	1301	LNC	20							
	MEF1601	1302	LNC	32							
	MEF1601	1303	LNC	18							
	MEF1601	1304	LNC	27							
	MEF1601	1305	LNC	31							
	MEF1601	1306	LNC	42							
	MEF1601	1307	LNC	28							
	MEF1601	1308	LNC	22							
	MEF1601	3985	RSC	26							
	MEF1601	3986	RSC	30							
	MEF1601	3987	RSC	26							
	MEF1601	4662	CCG	65							
	MEF1601	4663	CCG	74							
	MEF1601	4664	CCG	69							
	MEF1602	267	BB	193							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1602	1309	LNC	18							
	MEF1602	1310	LNC	14							
	MEF1602	1311	LNC	14							
	MEF1602	1312	LNC	23							
	MEF1602	1313	LNC	26							
	MEF1602	1314	LNC	24							
	MEF1602	1315	LNC	30							
	MEF1602	2110	LSU	36							
	MEF1602	2111	LSU	32							
	MEF1602	2112	LSU	38							
	MEF1602	2113	LSU	28							
	MEF1602	2114	LSU	43							
	MEF1602	2115	LSU	39							
	MEF1602	2116	LSU	34							
	MEF1602	2117	LSU	35							
	MEF1602	3988	RSC	30							
	MEF1602	3989	RSC	30							
	MEF1602	3990	RSC	22							
	MEF1602	3991	RSC	15							
	MEF1602	3992	RSC	28							
	MEF1602	5158	LSU	31							
	MEF1602	5159	LSU	22							
	MEF1602	5160	LSU	29							
	MEF1602	5286	WSC	33							
07											
	HBS0701	600	LNC	16							
	HBS0701	601	LNC	20							
	HBS0701	602	LNC	19							
	HBS0701	603	LNC	17							
	HBS0701	604	LNC	19							
	HBS0701	605	LNC	18							
	HBS0701	606	LNC	17							
	HBS0701	607	LNC	14							
	HBS0701	608	LNC	13							
	HBS0701	609	LNC	22							
	HBS0701	3511	RSC	18							
	HBS0701	3512	RSC	24							
	HBS0701	3513	RSC	18							
	HBS0701	3514	RSC	20							
	HBS0701	3515	RSC	18							
	HBS0701	3516	RSC	21							
	HBS0701	3517	RSC	20							
	HBS0701	3518	RSC	19							
	HBS0701	3519	RSC	21							
	HBS0701	4730	CSU	22							
	HBS0701	4731	CSU	24							
	HBS0701	4732	CSU	26							
	HBS0701	4733	CSU	23							
	HBS0701	4734	CSU	21							
	HBS0701	4735	CSU	19							
	HBS0701	4736	CSU	25							
	HBS0701	4737	CSU	21							
	HBS0701	4738	CSU	23							
	HBS0701	4739	CSU	22							
	HEF1602	428	LKC	54							
	HEF1602	429	LKC	28							
	HEF1602	903	LNC	64							
	HEF1602	904	LNC	22							
	HEF1602	1720	LSU	33							
	HEF1602	2525	MW	59							
	HEF1602	4439	CCG	70							
	HEF1701	430	LKC	33							
	HEF1701	905	LNC	26							
	HEF1701	906	LNC	19							
	HEF1701	907	LNC	34							
	HEF1701	1721	LSU	33							
	HEF1701	3635	RSC	16							
	HEF1701	3636	RSC	18							
	HEF1701	4965	LSU	20							
	HEF1701	4966	LSU	22							
	HSF0701	51	GR	123							
	HSF0701	204	BT	459							
	HSF0701	1812	LSU	105							
	HSF0701	1813	LSU	98							
	HSF0701	1814	LSU	144							
	HSF0701	1815	LSU	118							
	HSF0701	2933	MW	76							
	HSF0701	2934	MW	77							
	HSF0701	2935	MW	52							
	HSF0701	2936	MW	53							
	HSF0701	2937	MW	134							
	HSF0701	2938	MW	85							
	HSF0701	2939	MW	129							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0701	2940	MW	82							
	HSF0701	2941	MW	74							
	HSF0701	2942	MW	63							
	HSF0701	2943	MW	72							
	HSF0701	2944	MW	80							
	HSF0701	2945	MW	60							
	HSF0701	2946	MW	131							
	HSF0701	2947	MW	149							
	HSF0701	2948	MW	133							
	HSF0701	3657	RSC	95							
	HSF0701	3658	RSC	91							
	HSF0701	3659	RSC	101							
	HSF0701	3660	RSC	98							
	HSF0701	3661	RSC	90							
	HSF0703	52	GR	154			SC				
	HSF0703	53	GR	161			SC				
	HSF0703	54	GR	148							
	HSF0703	55	GR	164							
	HSF0703	56	GR	137							
	HSF0703	205	BT	310			FR				
	HSF0703	941	LNC	68							
	HSF0703	942	LNC	64							
	HSF0703	943	LNC	53							
	HSF0703	1816	LSU	125							
	HSF0703	2343	CSU	189							
	HSF0703	2344	CSU	160							
	HSF0703	2949	MW	239							
	HSF0703	2950	MW	241							
	HSF0703	2951	MW	60							
	HSF0703	2952	MW	84							
	HSF0703	2953	MW	78							
	HSF0703	2954	MW	81							
	HSF0703	2955	MW	81							
	HSF0703	2956	MW	140							
	HSF0703	2957	MW	134							
	HSF0703	2958	MW	135							
	HSF0703	2959	MW	126							
	HSF0703	4464	CCG	62							
	HSF0705	57	GR	144							
	HSF0705	944	LNC	43							
	HSF0705	945	LNC	45							
	HSF0705	1817	LSU	74							
	HSF0705	1818	LSU	79							
	HSF0705	1819	LSU	93							
	HSF0705	1820	LSU	126							
	HSF0705	1821	LSU	133							
	HSF0705	1822	LSU	69							
	HSF0705	1823	LSU	73							
	HSF0705	2345	CSU	197							
	HSF0705	2960	MW	186							
	HSF0705	2961	MW	128							
	HSF0705	2962	MW	132							
	HSF0705	2963	MW	149							
	HSF0705	2964	MW	81							
	HSF0705	2965	MW	78							
	HSF0705	2966	MW	80							
	HSF0705	2967	MW	69							
	HSF0705	2968	MW	84							
	HSF0705	2969	MW	75							
	HSF0705	2970	MW	68							
	HSF0705	3662	RSC	99							
	HSF0705	4465	CCG	82							
	HSF0705	4466	CCG	67							
	HSF0705	4467	CCG	81							
	HSF0705	4468	CCG	79							
	HSF0705	4469	CCG	77							
	HSF0705	4708	CRI	31							
	MEF1701	117	GR	70			SC				
	MEF1701	118	GR	67			SC				
	MEF1701	119	GR	76			SC				
	MEF1701	268	BB	144							
	MEF1701	1316	LNC	23							
	MEF1701	1317	LNC	66							
	MEF1701	1318	LNC	72							
	MEF1701	1319	LNC	72							
	MEF1701	1320	LNC	30							
	MEF1701	1321	LNC	66							
	MEF1701	2118	LSU	179							
	MEF1701	3993	RSC	98							
	MEF1701	3994	RSC	30							
	MEF1701	3995	RSC	28							
	MEF1701	3996	RSC	22							
	MEF1701	3997	RSC	31							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1701	3998	RSC	23							
	MEF1701	3999	RSC	21							
	MEF1701	4000	RSC	53							
	MEF1701	4001	RSC	47							
	MEF1701	4002	RSC	39							
	MEF1701	4003	RSC	27							
	MEF1701	4004	RSC	26							
	MEF1701	4005	RSC	29							
	MEF1701	4006	RSC	31							
	MEF1701	4007	RSC	106							
	MEF1701	4008	RSC	56							
	MEF1701	4009	RSC	64							
	MEF1701	4010	RSC	67							
	MEF1701	4665	CCG	35							
	MEF1701	5161	LSU	24							
	MEF1701	5162	LSU	19							
	MEF1701	5163	LSU	17							
	MEF1701	5164	LSU	20							
	MEF1701	5165	LSU	22							
	MEF1701	5166	LSU	24							
	MEF1701	5167	LSU	26							
	MEF1701	5168	LSU	23							
	MEF1701	5252	TP	45							
	MEF1702	3473	NP	118			SC				
	MEF1702	4666	CCG	63							
	MEF1702	4667	CCG	68							
	MEF1702	4668	CCG	29							
	MEF1702	4669	CCG	36							
	MEF1702	4670	CCG	35							
	MEF1702	4671	CCG	32							
	MEF1702	5169	LSU	24							
	MEF1702	5170	LSU	22							
	MEF1702	5171	LSU	27							
	MEF1702	5172	LSU	25							
	MEF1702	5173	LSU	23							
	MEF1702	5174	LSU	28							
	MEF1702	5175	LSU	30							
	MEF1702	5176	LSU	30							
	MEF1702	5177	LSU	23							
	MEF1702	5178	LSU	27							
	MEF1702	5179	LSU	24							
	MEF1702	5180	LSU	28							
	MEF1702	5181	LSU	25							
	MEF1702	5182	LSU	23							
	MEF1702	5183	LSU	27							
	MEF1703	120	GR	78			SC				
	MEF1703	121	GR	83			SC				
	MEF1703	122	GR	70			SC				
	MEF1703	1322	LNC	21							
	MEF1703	1323	LNC	22							
	MEF1703	1324	LNC	70							
	MEF1703	1325	LNC	61							
	MEF1703	2119	LSU	88							
	MEF1703	3307	MW	76			SC				
	MEF1703	3308	MW	82							
	MEF1703	3309	MW	80			SC				
	MEF1703	3310	MW	85			SC				
	MEF1703	4011	RSC	22							
	MEF1703	4012	RSC	52							
	MEF1703	4013	RSC	22							
	MEF1703	4014	RSC	21							
	MEF1703	4015	RSC	19							
	MEF1703	4016	RSC	14							
	MEF1703	4017	RSC	20							
	MEF1703	4018	RSC	23							
	MEF1703	4019	RSC	23							
	MEF1703	4020	RSC	27							
	MEF1703	4021	RSC	21							
	MEF1703	4022	RSC	29							
	MEF1703	4672	CCG	83							
	MEF1703	4673	CCG	83							
	MEF1703	4674	CCG	36							
	MEF1703	4675	CCG	33							
	MEF1704	123	GR	66			SC				
	MEF1704	124	GR	88			SC				
	MEF1704	125	GR	75			SC				
	MEF1704	126	GR	75			SC				
	MEF1704	127	GR	76			SC				
	MEF1704	128	GR	60			SC				
	MEF1704	1326	LNC	27							
	MEF1704	1327	LNC	81							
	MEF1704	1328	LNC	27							
	MEF1704	1329	LNC	26							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1704	1330	LNC	74							
	MEF1704	1331	LNC	43							
	MEF1704	1332	LNC	31							
	MEF1704	1333	LNC	16							
	MEF1704	1334	LNC	30							
	MEF1704	1335	LNC	46							
	MEF1704	1336	LNC	21							
	MEF1704	1337	LNC	30							
	MEF1704	2120	LSU	36							
	MEF1704	2121	LSU	35							
	MEF1704	2122	LSU	36							
	MEF1704	2123	LSU	37							
	MEF1704	3311	MW	86			SC				
	MEF1704	3312	MW	73			SC				
	MEF1704	3313	MW	76			SC				
	MEF1704	4676	CCG	37							
	MEF1704	4677	CCG	37							
	MEF1704	4678	CCG	41							
	MEF1704	5184	LSU	32							
	MEF1704	5185	LSU	33							
	MEF1704	5186	LSU	32							
	MEF1704	5187	LSU	28							
	MEF1705	129	GR	79			SC				
	MEF1705	130	GR	74			SC				
	MEF1705	534	LKC	25							
	MEF1705	1338	LNC	29							
	MEF1705	1339	LNC	66							
	MEF1705	1340	LNC	30							
	MEF1705	1341	LNC	27							
	MEF1705	1342	LNC	95							
	MEF1705	1343	LNC	56							
	MEF1705	1344	LNC	101							
	MEF1705	1345	LNC	76							
	MEF1705	1346	LNC	74							
	MEF1705	2124	LSU	180							
	MEF1705	2125	LSU	71							
	MEF1705	2126	LSU	70							
	MEF1705	2127	LSU	62							
	MEF1705	2128	LSU	69							
	MEF1705	2129	LSU	107							
	MEF1705	2130	LSU	70							
	MEF1705	2131	LSU	77							
	MEF1705	3314	MW	84			SC				
	MEF1705	3315	MW	76			SC				
	MEF1705	4023	RSC	58							
	MEF1705	4024	RSC	52							
	MEF1705	4025	RSC	54							
	MEF1705	4026	RSC	26							
	MEF1705	4027	RSC	22							
	MEF1705	4028	RSC	26							
	MEF1705	4029	RSC	22							
	MEF1705	4030	RSC	27							
	MEF1705	4031	RSC	19							
	MEF1705	4032	RSC	27							
	MEF1705	4033	RSC	16							
	MEF1705	4034	RSC	104							
	MEF1705	4035	RSC	113							
	MEF1705	4679	CCG	39							
	MEF1705	4680	CCG	54							
	MEF1705	4681	CCG	58							
	MEF1705	4682	CCG	37							
	MEF1705	4683	CCG	36							
	MEF1705	4684	CCG	82							
	MEF1705	4685	CCG	54							
	MEF1705	4686	CCG	33							
	MEF1705	4687	CCG	33							
	MEF1705	4688	CCG	33							
	MEF1705	5188	LSU	23							
08											
	HBS0702	297	LKC	36							
	HBS0702	298	LKC	48							
	HBS0702	299	LKC	52							
	HBS0702	610	LNC	14							
	HBS0702	611	LNC	29							
	HBS0702	612	LNC	28							
	HBS0702	613	LNC	26							
	HBS0702	614	LNC	32							
	HBS0702	615	LNC	18							
	HBS0702	616	LNC	27							
	HBS0702	617	LNC	31							
	HBS0702	618	LNC	26							
	HBS0702	1493	LSU	33							
	HBS0702	2184	CSU	31							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS0702	2185	CSU	34							
	HBS0702	2186	CSU	34							
	HBS0702	2187	CSU	34							
	HBS0702	2188	CSU	28							
	HBS0702	2189	CSU	30							
	HBS0702	2190	CSU	36							
	HBS0702	2191	CSU	32							
	HBS0702	2192	CSU	26							
	HBS0702	2193	CSU	34							
	HBS0702	2194	CSU	36							
	HBS0702	3321	NSC	28							
	HBS0702	3322	NSC	31							
	HBS0702	3323	NSC	34							
	HBS0702	3324	NSC	25							
	HBS0702	3325	NSC	30							
	HBS0702	3326	NSC	29							
	HBS0702	3327	NSC	27							
	HBS0702	3328	NSC	24							
	HBS0702	3329	NSC	20							
	HBS0702	3330	NSC	28							
	HBS0702	3520	RSC	24							
	HBS0702	3521	RSC	23							
	HBS0702	3522	RSC	24							
	HBS0702	3523	RSC	34							
	HBS0702	3524	RSC	33							
	HBS0702	3525	RSC	31							
	HBS0702	3526	RSC	30							
	HBS0702	4740	CSU	20							
	HBS0702	4741	CSU	20							
	HBS0702	4742	LSU	23							
	HBS0702	5241	TP	26							
	HBS1701	675	LNC	22							
	HBS1701	676	LNC	18							
	HBS1701	1504	LSU	31							
	HBS1701	2204	CSU	69							
	HBS1701	2205	CSU	43							
	HBS1701	2206	CSU	34							
	HBS1701	2207	CSU	34							
	HBS1701	2208	CSU	46							
	HBS1701	2209	CSU	38							
	HBS1701	2210	CSU	30							
	HBS1701	2211	CSU	34							
	HBS1701	2212	CSU	41							
	HBS1701	2213	CSU	29							
	HBS1701	2214	CSU	29							
	HBS1701	2492	MW	52							
	HBS1701	3331	NSC	74							
	HBS1701	3332	NSC	76							
	HBS1701	3333	NSC	92							
	HBS1701	3334	NSC	60							
	HBS1701	3536	RSC	26							
	HBS1701	3537	RSC	57							
	HBS1701	3538	RSC	49							
	HBS1701	3539	RSC	28							
	HBS1701	3540	RSC	21							
	HBS1701	3541	RSC	27							
	HBS1701	3542	RSC	28							
	HBS1701	3543	RSC	25							
	HBS1701	3544	RSC	25							
	HBS1701	3545	RSC	22							
	HBS1701	3546	RSC	24							
	HBS1701	3547	RSC	22							
	HBS1701	3548	RSC	28							
	HBS1701	3549	RSC	27							
	HBS1701	3550	RSC	23							
	HBS1701	3551	RSC	24							
	HBS1701	3552	RSC	38							
	HBS1701	3553	RSC	27							
	HBS1701	3554	RSC	21							
	HBS1701	3555	RSC	23							
	HBS1701	3556	RSC	29							
	HBS1701	3557	RSC	28							
	HBS1701	3558	RSC	22							
	HBS1701	3559	RSC	27							
	HBS1701	3560	RSC	28							
	HBS1701	3561	RSC	29							
	HBS1701	3562	RSC	27							
	HBS1701	3563	RSC	21							
	HBS1701	3564	RSC	31							
	HBS1701	3565	RSC	29							
	HBS1701	3566	RSC	28							
	HBS1701	3567	RSC	23							
	HBS1701	3568	RSC	19							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HBS1701	3569	RSC	27							
	HBS1701	3570	RSC	31							
	HBS1701	3571	RSC	24							
	HBS1701	3572	RSC	23							
	HBS1701	5242	TP	32							
	HBS1701	5243	TP	36							
	HEF1702	431	LKC	52							
	HEF1702	432	LKC	63							
	HEF1702	908	LNC	42							
	HEF1702	909	LNC	53							
	HEF1702	910	LNC	20							
	HEF1702	911	LNC	37							
	HEF1702	1722	LSU	58							
	HEF1702	1723	LSU	54							
	HEF1702	1724	LSU	56							
	HEF1702	1725	LSU	68							
	HEF1702	2299	CSU	104							
	HEF1702	2300	CSU	78							
	HEF1702	2301	CSU	58							
	HEF1702	2302	CSU	33							
	HEF1702	2303	CSU	37							
	HEF1703	433	LKC	65							
	HEF1703	434	LKC	54							
	HEF1703	435	LKC	61							
	HEF1703	436	LKC	64							
	HEF1703	1726	LSU	71							
	HEF1703	1727	LSU	75							
	HEF1703	2304	CSU	69							
	HEF1703	2305	CSU	67							
	HEF1703	2306	CSU	77							
	HEF1703	2307	CSU	62							
	HEF1703	2308	CSU	66							
	HEF1703	2309	CSU	67							
	HEF1703	2310	CSU	74							
	HEF1703	2311	CSU	65							
	HEF1703	2312	CSU	68							
	HEF1703	2313	CSU	73							
	HEF1703	2314	CSU	58							
	HEF1703	2315	CSU	32							
	HEF1703	2316	CSU	32							
	HEF1703	2317	CSU	34							
	HEF1703	3350	NSC	71							
	HEF1703	3351	NSC	68							
	HEF1703	3352	NSC	58							
	HEF1703	3353	NSC	60							
	HEF1703	3354	NSC	54							
	HEF1703	3355	NSC	76							
	HEF1703	3356	NSC	78							
	HEF1703	3357	NSC	62							
	HEF1703	3358	NSC	58							
	HEF1703	3359	NSC	68							
	HEF1703	3360	NSC	57							
	HEF1703	3361	NSC	31							
	HEF1703	3362	NSC	29							
	HEF1703	3637	RSC	56							
	HEF1703	3638	RSC	67							
	HEF1703	3639	RSC	55							
	HEF1703	3640	RSC	51							
	HEF1703	3641	RSC	59							
	HEF1703	3642	RSC	44							
	HEF1704	437	LKC	98							
	HEF1704	438	LKC	91							
	HEF1704	439	LKC	86							
	HEF1704	440	LKC	86							
	HEF1704	441	LKC	87							
	HEF1704	1728	LSU	108							
	HEF1704	1729	LSU	109							
	HEF1704	1730	LSU	111							
	HEF1704	1731	LSU	77							
	HEF1704	1732	LSU	76							
	HEF1704	1733	LSU	105							
	HEF1704	2318	CSU	122							
	HEF1704	2319	CSU	36							
	HEF1704	2320	CSU	112							
	HEF1704	2321	CSU	73							
	HEF1704	2322	CSU	102							
	HEF1704	2323	CSU	118							
	HEF1704	2324	CSU	118							
	HEF1704	2325	CSU	67							
	HEF1704	3363	NSC	35							
	HEF1704	3643	RSC	68							
	HEF1704	3644	RSC	58							
	HEF1704	3645	RSC	63							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1704	3646	RSC	58							
	HEF1704	3647	RSC	71							
	HEF1704	3648	RSC	67							
	HEF1704	3649	RSC	50							
	HEF1704	3650	RSC	52							
	HSF0706	58	GR	123			SC				
	HSF0706	59	GR	157							
	HSF0706	60	GR	162							
	HSF0706	946	LNC	51							
	HSF0706	1824	LSU	92							
	HSF0706	1825	LSU	153							
	HSF0706	1826	LSU	94							
	HSF0706	1827	LSU	136							
	HSF0706	1828	LSU	116							
	HSF0706	2346	CSU	80							
	HSF0706	2971	MW	141							
	HSF0706	2972	MW	128							
	HSF0706	2973	MW	123							
	HSF0706	2974	MW	146							
	HSF0706	2975	MW	138							
	HSF0706	2976	MW	76							
	HSF0706	2977	MW	60							
	HSF0706	2978	MW	69							
	HSF0706	2979	MW	51							
	HSF0706	2980	MW	76							
	HSF0707	61	GR	135			SC				
	HSF0707	62	GR	136							
	HSF0707	206	BT	384							
	HSF0707	207	BT	221			SC				
	HSF0707	208	BT	160			SC				
	HSF0707	1829	LSU	127							
	HSF0707	1830	LSU	121							
	HSF0707	1831	LSU	121							
	HSF0707	1832	LSU	149							
	HSF0707	1833	LSU	138							
	HSF0707	1834	LSU	140							
	HSF0707	1835	LSU	130							
	HSF0707	1836	LSU	72							
	HSF0707	2981	MW	198							
	HSF0707	2982	MW	123							
	HSF0707	2983	MW	137							
	HSF0707	2984	MW	74							
	HSF0707	2985	MW	75							
	HSF0707	2986	MW	68							
	HSF0707	2987	MW	80							
	HSF0707	2988	MW	66							
	HSF0707	2989	MW	72							
	HSF0707	2990	MW	143							
	HSF0707	2991	MW	121							
	HSF0707	2992	MW	132							
	HSF0707	2993	MW	79							
	HSF0707	3663	RSC	82							
	HSF0802	947	LNC	58							
	HSF0802	1837	LSU	115							
	HSF0802	1838	LSU	125							
	HSF0802	1839	LSU	116							
	HSF0802	1840	LSU	142							
	HSF0802	1841	LSU	138							
	HSF0802	1842	LSU	84							
	HSF0802	1843	LSU	124							
	HSF0802	1844	LSU	108							
	HSF0802	1845	LSU	135							
	HSF0802	1846	LSU	92							
	HSF0802	1847	LSU	101							
	HSF0802	2347	CSU	240							
	HSF0802	2348	CSU	158							
	HSF0802	2349	CSU	127							
	HSF0802	2350	CSU	72							
	HSF0802	2994	MW	134							
	HSF0802	2995	MW	135							
	HSF0802	2996	MW	144							
	HSF0802	2997	MW	148							
	HSF0802	2998	MW	135							
	HSF0802	2999	MW	83							
	HSF0802	3000	MW	68							
	HSF0802	3001	MW	72							
	HSF0802	3002	MW	72							
	HSF0802	3003	MW	63							
	HSF0802	3664	RSC	102							
	HSF0802	3665	RSC	84							
	HSF0802	3666	RSC	86							
	HSF0802	3667	RSC	48							
	HSF0802	3668	RSC	53							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0802	3669	RSC	97							
	HSF0802	3670	RSC	94							
	HSF0802	3671	RSC	82							
	HSF0802	3672	RSC	73							
	HSF0802	3673	RSC	100							
	HSF0802	3674	RSC	93							
	HSF0803	948	LNC	67							
	HSF0803	949	LNC	66							
	HSF0803	950	LNC	66							
	HSF0803	951	LNC	40							
	HSF0803	1848	LSU	137							
	HSF0803	1849	LSU	132							
	HSF0803	1850	LSU	131							
	HSF0803	1851	LSU	126							
	HSF0803	2351	CSU	205							
	HSF0803	2352	CSU	164							
	HSF0803	2353	CSU	138							
	HSF0803	2354	CSU	134							
	HSF0803	2355	CSU	151							
	HSF0803	2356	CSU	156							
	HSF0803	2357	CSU	75							
	HSF0803	3004	MW	241							
	HSF0803	3005	MW	148							
	HSF0803	3006	MW	159							
	HSF0803	3007	MW	140							
	HSF0803	3008	MW	132							
	HSF0803	3009	MW	83							
	HSF0803	3010	MW	72							
	HSF0803	3011	MW	55							
	HSF0803	3012	MW	89							
	HSF0803	3013	MW	85							
	HSF0803	3014	MW	52							
	HSF0803	3364	NSC	179							
	HSF0803	3675	RSC	98							
	HSF0803	3676	RSC	82							
	HSF0803	3677	RSC	101							
	HSF0803	3678	RSC	89							
	HSF0803	3679	RSC	94							
	HSF0803	3680	RSC	60							
	HSF0803	3681	RSC	65							
	HSF0803	3682	RSC	49							
	HSF0803	3683	RSC	76							
	HSF0803	3684	RSC	99							
	HSF0803	4470	CCG	80							
	HSF0803	4471	CCG	36							
	HSF0804	1852	LSU	151							
	HSF0804	1853	LSU	182							
	HSF0804	1854	LSU	101							
	HSF0804	1855	LSU	123							
	HSF0804	1856	LSU	122							
	HSF0804	1857	LSU	125							
	HSF0804	1858	LSU	90							
	HSF0804	2358	CSU	84							
	HSF0804	2359	CSU	143							
	HSF0804	2360	CSU	73							
	HSF0804	2361	CSU	78							
	HSF0804	2362	CSU	112							
	HSF0804	2363	CSU	138							
	HSF0804	3015	MW	85							
	HSF0804	3016	MW	73							
	HSF0804	3017	MW	78							
	HSF0804	3018	MW	72							
	HSF0804	3019	MW	138							
	HSF0804	3020	MW	127							
	HSF0804	3021	MW	145							
	HSF0804	3022	MW	78							
	HSF0804	3023	MW	76							
	HSF0804	3365	NSC	279							
	HSF0804	3366	NSC	117							
	HSF0804	3367	NSC	118							
	HSF0804	3368	NSC	88							
	HSF0804	3685	RSC	55							
	HSF0804	3686	RSC	94							
	HSF0804	3687	RSC	83							
	HSF0804	3688	RSC	95							
	HSF0804	3689	RSC	91							
	HSF0804	3690	RSC	91							
	HSF0804	3691	RSC	88							
	HSF0804	3692	RSC	96							
	HSF0804	4709	CRI	97							
	HSF0806	63	GR	124							
	HSF0806	952	LNC	52							
	HSF0806	953	LNC	42							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0806	954	LNC	48							
	HSF0806	1859	LSU	97							
	HSF0806	2364	CSU	227							
	HSF0806	2365	CSU	128							
	HSF0806	2366	CSU	110							
	HSF0806	3024	MW	177							
	HSF0806	3025	MW	135							
	HSF0806	3026	MW	150							
	HSF0806	3027	MW	150							
	HSF0806	3028	MW	137							
	HSF0806	3029	MW	77							
	HSF0806	3030	MW	64							
	HSF0806	3031	MW	68							
	HSF0806	3032	MW	52							
	HSF0806	3033	MW	69							
	HSF0806	3034	MW	72							
	HSF0806	3035	MW	81							
	HSF0806	3036	MW	75							
	HSF0806	3037	MW	141							
	HSF0806	3461	NP	504			FR				
	HSF0806	3693	RSC	97							
	HSF0806	3694	RSC	88							
	HSF0806	3695	RSC	87							
	HSF0806	3696	RSC	80							
	HSF0806	3697	RSC	106							
	HSF0806	3698	RSC	82							
	HSF0806	3699	RSC	50							
	HSF0806	3700	RSC	61							
	MEF0804	493	LKC	56							
	MEF0804	494	LKC	68							
	MEF0804	495	LKC	42							
	MEF0804	496	LKC	33							
	MEF0804	497	LKC	63							
	MEF0804	498	LKC	42							
	MEF0804	499	LKC	46							
	MEF0804	500	LKC	36							
	MEF0804	501	LKC	43							
	MEF0804	502	LKC	45							
	MEF0804	503	LKC	20							
	MEF0804	504	LKC	34							
	MEF0804	505	LKC	60							
	MEF0804	1189	LNC	32							
	MEF0804	1190	LNC	22							
	MEF0804	1191	LNC	28							
	MEF0804	1192	LNC	26							
	MEF0804	1193	LNC	24							
	MEF0804	1194	LNC	24							
	MEF0804	1195	LNC	21							
	MEF0804	1196	LNC	26							
	MEF0804	1197	LNC	26							
	MEF0804	1198	LNC	26							
	MEF0804	2059	LSU	37							
	MEF0804	2060	LSU	41							
	MEF0804	2061	LSU	53							
	MEF0804	2062	LSU	54							
	MEF0804	2063	LSU	53							
	MEF0804	2064	LSU	57							
	MEF0804	2065	LSU	39							
	MEF0804	2066	LSU	42							
	MEF0804	2067	LSU	38							
	MEF0804	2068	LSU	57							
	MEF0804	3899	RSC	33							
	MEF0804	3900	RSC	31							
	MEF0804	3901	RSC	29							
	MEF0804	3902	RSC	29							
	MEF0804	3903	RSC	26							
	MEF0804	3904	RSC	24							
	MEF0804	3905	RSC	30							
	MEF0804	3906	RSC	20							
	MEF0804	3907	RSC	26							
	MEF0804	4617	CCG	32							
	MEF0804	4618	CCG	38							
	MEF0804	5104	WSC	33							
	MEF0804	5105	WSC	27							
	MEF0804	5106	WSC	26							
	MEF0804	5107	LSU	27							
	MEF0804	5108	LSU	32							
	MEF0804	5109	LSU	32							
	MEF0804	5110	LSU	30							
	MEF0804	5111	LSU	34							
	MEF0804	5112	LSU	31							
	MEF0804	5113	LSU	33							
	MEF0804	5114	LSU	32							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0804	5115	LSU	28							
	MEF1801	131	GR	80			SC				
	MEF1801	132	GR	80			SC				
	MEF1801	133	GR	73			SC				
	MEF1801	134	GR	89			SC				
	MEF1801	135	GR	73			SC				
	MEF1801	269	BB	168							
	MEF1801	535	LKC	64							
	MEF1801	536	LKC	58							
	MEF1801	537	LKC	117							
	MEF1801	538	LKC	63							
	MEF1801	539	LKC	66							
	MEF1801	540	LKC	65							
	MEF1801	541	LKC	64							
	MEF1801	542	LKC	68							
	MEF1801	543	LKC	57							
	MEF1801	544	LKC	63							
	MEF1801	1347	LNC	30							
	MEF1801	1348	LNC	76							
	MEF1801	1349	LNC	48							
	MEF1801	1350	LNC	74							
	MEF1801	1351	LNC	65							
	MEF1801	1352	LNC	67							
	MEF1801	1353	LNC	65							
	MEF1801	1354	LNC	30							
	MEF1801	1355	LNC	20							
	MEF1801	1356	LNC	29							
	MEF1801	1357	LNC	29							
	MEF1801	2132	LSU	82							
	MEF1801	2133	LSU	84							
	MEF1801	2134	LSU	76							
	MEF1801	2135	LSU	37							
	MEF1801	2136	LSU	67							
	MEF1801	2137	LSU	57							
	MEF1801	4036	RSC	65							
	MEF1801	4689	CCG	73							
	MEF1801	4690	CCG	63							
	MEF1801	5189	LSU	30							
	MEF1802	545	LKC	58							
	MEF1802	546	LKC	40							
	MEF1802	547	LKC	39							
	MEF1802	548	LKC	33							
	MEF1802	549	LKC	40							
	MEF1802	1358	LNC	28							
	MEF1802	1359	LNC	22							
	MEF1802	1360	LNC	21							
	MEF1802	1361	LNC	28							
	MEF1802	1362	LNC	22							
	MEF1802	1363	LNC	27							
	MEF1802	1364	LNC	45							
	MEF1802	1365	LNC	24							
	MEF1802	1366	LNC	30							
	MEF1802	1367	LNC	23							
	MEF1802	2138	LSU	59							
	MEF1802	2139	LSU	35							
	MEF1802	2140	LSU	40							
	MEF1802	2141	LSU	41							
	MEF1802	2142	LSU	37							
	MEF1802	2143	LSU	36							
	MEF1802	2144	LSU	37							
	MEF1802	2145	LSU	34							
	MEF1802	2146	LSU	34							
	MEF1802	2147	LSU	33							
	MEF1802	2148	LSU	42							
	MEF1802	2149	LSU	45							
	MEF1802	4037	RSC	27							
	MEF1802	4038	RSC	72							
	MEF1802	4039	RSC	28							
	MEF1802	4040	RSC	23							
	MEF1802	4041	RSC	28							
	MEF1802	4042	RSC	25							
	MEF1802	4043	RSC	27							
	MEF1802	4044	RSC	14							
	MEF1802	4045	RSC	54							
	MEF1802	4691	CCG	83							
	MEF1802	5190	LSU	30							
	MEF1802	5191	LSU	27							
	MEF1802	5192	LSU	24							
	MEF1802	5193	LSU	29							
	MEF1802	5194	LSU	33							
	MEF1802	5195	LSU	29							
	MEF1802	5196	LSU	21							
	MEF1802	5197	LSU	22							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1802	5198	LSU	31							
	MEF1802	5199	LSU	26							
	MEF1802	5287	WSC	38							
	MEF1803	136	GR	78			SC				
	MEF1803	137	GR	72			SC				
	MEF1803	550	LKC	62							
	MEF1803	551	LKC	72							
	MEF1803	552	LKC	76							
	MEF1803	1368	LNC	60							
	MEF1803	1369	LNC	53							
	MEF1803	1370	LNC	52							
	MEF1803	1371	LNC	55							
	MEF1803	1372	LNC	68							
	MEF1803	1373	LNC	65							
	MEF1803	1374	LNC	70							
	MEF1803	1375	LNC	50							
	MEF1803	1376	LNC	28							
	MEF1803	1377	LNC	67							
	MEF1803	1378	LNC	65							
	MEF1803	1379	LNC	48							
	MEF1803	2150	LSU	76							
	MEF1803	2151	LSU	40							
	MEF1803	2152	LSU	62							
	MEF1803	3316	MW	75			SC				
	MEF1803	3317	MW	82			SC				
	MEF1803	5200	LSU	34							
	MEF1804	553	LKC	58							
	MEF1804	554	LKC	60							
	MEF1804	555	LKC	34							
	MEF1804	1380	LNC	89							
	MEF1804	1381	LNC	74							
	MEF1804	1382	LNC	58							
	MEF1804	1383	LNC	60							
	MEF1804	1384	LNC	40							
	MEF1804	1385	LNC	19							
	MEF1804	1386	LNC	23							
	MEF1804	1387	LNC	24							
	MEF1804	3318	MW	72			SC				
	MEF1804	4046	RSC	30							
	MEF1804	4047	RSC	102							
	MEF1804	4048	RSC	28							
	MEF1804	4049	RSC	26							
	MEF1804	4050	RSC	24							
	MEF1804	4051	RSC	23							
	MEF1804	4692	CCG	82							
	MEF1804	5201	LSU	28							
	MEF1804	5202	LSU	21							
	MEF1805	138	GR	81			SC				
	MEF1805	139	GR	67			SC				
	MEF1805	1388	LNC	74							
	MEF1805	1389	LNC	77							
	MEF1805	1390	LNC	80							
	MEF1805	1391	LNC	72							
	MEF1805	1392	LNC	82							
	MEF1805	1393	LNC	47							
	MEF1805	1394	LNC	82							
	MEF1805	1395	LNC	66							
	MEF1805	1396	LNC	31							
	MEF1805	1397	LNC	32							
	MEF1805	1398	LNC	32							
	MEF1805	1399	LNC	53							
	MEF1805	2153	LSU	45							
	MEF1805	2154	LSU	41							
	MEF1805	2155	LSU	39							
	MEF1805	2156	LSU	36							
	MEF1805	2157	LSU	48							
	MEF1805	2158	LSU	43							
	MEF1805	2159	LSU	45							
	MEF1805	2160	LSU	42							
	MEF1805	2161	LSU	43							
	MEF1805	2162	LSU	47							
	MEF1805	4052	RSC	27							
	MEF1805	4693	CCG	73							
	MEF1805	4694	CCG	79							
	MEF1805	4695	CCG	83							
	MEF1805	4696	CCG	70							
	MEF1805	4697	CCG	78							
	MEF1805	4698	CCG	65							
	MEF1805	4699	CCG	36							
	MEF1805	5203	LSU	30							
	MEF1806	140	GR	75			SC				
	MEF1806	141	GR	73			SC				
	MEF1806	270	BB	159							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1806	271	BB	280							
	MEF1806	556	LKC	62							
	MEF1806	557	LKC	62							
	MEF1806	558	LKC	67							
	MEF1806	559	LKC	86							
	MEF1806	560	LKC	100							
	MEF1806	561	LKC	74							
	MEF1806	562	LKC	60							
	MEF1806	563	LKC	65							
	MEF1806	564	LKC	109							
	MEF1806	565	LKC	65							
	MEF1806	1400	LNC	31							
	MEF1806	1401	LNC	25							
	MEF1806	1402	LNC	32							
	MEF1806	1403	LNC	28							
	MEF1806	1404	LNC	55							
	MEF1806	1405	LNC	32							
	MEF1806	1406	LNC	25							
	MEF1806	1407	LNC	22							
	MEF1806	1408	LNC	34							
	MEF1806	1409	LNC	70							
	MEF1806	1410	LNC	32							
	MEF1806	2163	LSU	110							
	MEF1806	2164	LSU	156							
	MEF1806	2165	LSU	110							
	MEF1806	2166	LSU	88							
	MEF1806	2167	LSU	42							
	MEF1806	2168	LSU	42							
	MEF1806	2169	LSU	34							
	MEF1806	3319	MW	75			SC				
	MEF1806	3320	MW	76			SC				
	MEF1806	4053	RSC	98							
	MEF1806	4054	RSC	24							
	MEF1806	4055	RSC	23							
	MEF1806	4056	RSC	32							
	MEF1806	4057	RSC	88							
	MEF1806	4058	RSC	100							
	MEF1806	4059	RSC	22							
	MEF1806	4060	RSC	24							
	MEF1806	4700	CCG	70							
	MEF1806	5204	LSU	27							
	MEF1806	5205	LSU	24							
	MEF1806	5206	LSU	33							
	MEF1806	5207	LSU	25							
	MEF1806	5208	LSU	27							
	MEF1806	5209	LSU	23							
	MEF1806	5210	LSU	26							
	MEF1806	5211	LSU	29							
	MEF1806	5212	LSU	25							
	MEF1806	5213	LSU	29							
09											
	HBS1901	2215	CSU	73							
	HBS1901	2216	CSU	28							
	HBS1901	2217	CSU	38							
	HBS1901	2218	CSU	36							
	HBS1901	2219	CSU	30							
	HBS1901	2220	CSU	29							
	HBS1901	2221	CSU	32							
	HBS1901	2222	CSU	23							
	HBS1901	2223	CSU	125							
	HBS1901	2224	CSU	38							
	HBS1901	2225	CSU	40							
	HBS1901	2226	CSU	23							
	HBS1901	2227	CSU	115							
	HBS1901	2228	CSU	78							
	HBS1901	3335	NSC	35							
	HBS1901	3336	NSC	37							
	HBS1901	3337	NSC	21							
	HBS1901	3338	NSC	79							
	HBS1901	3573	RSC	23							
	HBS1901	3574	RSC	28							
	HBS1901	3575	RSC	17							
	HBS1901	3576	RSC	18							
	HBS1901	3577	RSC	50							
	HBS1901	3578	RSC	18							
	HBS1901	3579	RSC	47							
	HBS1901	3580	RSC	18							
	HBS1901	3581	RSC	25							
	HBS1901	3582	RSC	27							
	HEF0901	367	LKC	59							
	HEF0901	368	LKC	71							
	HEF0901	369	LKC	88							
	HEF0901	370	LKC	74							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF0901	371	LKC	63							
	HEF0901	372	LKC	89							
	HEF0901	719	LNC	29							
	HEF0901	720	LNC	26							
	HEF0901	721	LNC	25							
	HEF0901	722	LNC	68							
	HEF0901	723	LNC	28							
	HEF0901	724	LNC	47							
	HEF0901	725	LNC	20							
	HEF0901	726	LNC	50							
	HEF0901	727	LNC	28							
	HEF0901	728	LNC	27							
	HEF0901	729	LNC	28							
	HEF0901	1551	LSU	67							
	HEF0901	1552	LSU	60							
	HEF0901	1553	LSU	49							
	HEF0901	1554	LSU	78							
	HEF0901	1555	LSU	65							
	HEF0901	1556	LSU	62							
	HEF0901	1557	LSU	50							
	HEF0901	2246	CSU	48							
	HEF0901	2247	CSU	48							
	HEF0901	2248	CSU	69							
	HEF0901	2249	CSU	36							
	HEF0901	2250	CSU	38							
	HEF0901	2251	CSU	29							
	HEF0901	2252	CSU	31							
	HEF0901	2253	CSU	37							
	HEF0901	2254	CSU	40							
	HEF0901	2255	CSU	37							
	HEF0901	3339	NSC	72							
	HEF0901	3340	NSC	67							
	HEF0901	3597	RSC	37							
	HEF0901	3598	RSC	17							
	HEF0901	3599	RSC	18							
	HEF0904	373	LKC	33							
	HEF0904	730	LNC	21							
	HEF0904	731	LNC	21							
	HEF0904	732	LNC	28							
	HEF0904	733	LNC	22							
	HEF0904	734	LNC	22							
	HEF0904	735	LNC	23							
	HEF0904	736	LNC	25							
	HEF0904	737	LNC	17							
	HEF0904	738	LNC	24							
	HEF0904	739	LNC	14							
	HEF0904	1558	LSU	37							
	HEF0904	1559	LSU	34							
	HEF0904	1560	LSU	27							
	HEF0904	1561	LSU	47							
	HEF0904	1562	LSU	32							
	HEF0904	1563	LSU	33							
	HEF0904	1564	LSU	54							
	HEF0904	2256	CSU	29							
	HEF0904	2257	CSU	36							
	HEF0904	2258	CSU	37							
	HEF0904	2259	CSU	30							
	HEF0904	2260	CSU	38							
	HEF0904	2261	CSU	38							
	HEF0904	2262	CSU	35							
	HEF0904	2263	CSU	33							
	HEF0904	2264	CSU	36							
	HEF0904	2265	CSU	37							
	HEF0904	3341	NSC	80							
	HEF0904	3342	NSC	69							
	HEF0904	3343	NSC	80							
	HEF0904	3600	RSC	18							
	HEF0904	3601	RSC	32							
	HEF0904	3602	RSC	12							
	HEF0904	3603	RSC	25							
	HEF0904	3604	RSC	96							
	HEF0904	4887	LSU	23							
	HEF0904	4888	CSU	27							
	HEF0904	4889	CSU	26							
	HEF0905	740	LNC	18							
	HEF0905	741	LNC	21							
	HEF0905	742	LNC	26							
	HEF0905	743	LNC	20							
	HEF0905	1565	LSU	48							
	HEF0905	1566	LSU	53							
	HEF0905	2266	CSU	35							
	HEF0905	2267	CSU	39							
	HEF0905	2268	CSU	37							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF0905	2269	CSU	33							
	HEF0905	2270	CSU	29							
	HEF0905	2271	CSU	30							
	HEF0905	2272	CSU	30							
	HEF0905	2273	CSU	31							
	HEF0905	2274	CSU	38							
	HEF0905	2275	CSU	28							
	HEF0905	2276	CSU	38							
	HEF0905	2277	CSU	30							
	HEF0905	3344	NSC	240							
	HEF0905	3345	NSC	28							
	HEF0905	3346	NSC	66							
	HEF0905	3347	NSC	57							
	HEF0905	3348	NSC	35							
	HEF0905	3349	NSC	29							
	HEF0905	3491	CAS	92							
	HEF0905	3605	RSC	25							
	HEF0905	3606	RSC	12							
	HEF0905	3607	RSC	15							
	HEF0905	3608	RSC	18							
	HEF0905	3609	RSC	22							
	HEF0905	3610	RSC	12							
	HEF0905	3611	RSC	12							
	HEF0905	3612	RSC	10							
	HEF0905	3613	RSC	14							
	HEF0905	3614	RSC	18							
	HEF0905	4307	CCG	33							
	HEF1901	442	LKC	73							
	HEF1901	912	LNC	25							
	HEF1901	913	LNC	26							
	HEF1901	1734	LSU	70							
	HEF1901	2326	CSU	76							
	HEF1901	2327	CSU	33							
	HEF1901	2328	CSU	34							
	HEF1901	2329	CSU	36							
	HEF1901	2330	CSU	35							
	HEF1902	443	LKC	87							
	HEF1902	444	LKC	93							
	HEF1902	445	LKC	83							
	HEF1902	914	LNC	26							
	HEF1902	915	LNC	19							
	HEF1902	916	LNC	30							
	HEF1902	917	LNC	30							
	HEF1902	918	LNC	22							
	HEF1902	1735	LSU	38							
	HEF1902	1736	LSU	38							
	HEF1902	1737	LSU	42							
	HEF1902	1738	LSU	41							
	HEF1902	1739	LSU	44							
	HEF1902	1740	LSU	47							
	HEF1902	1741	LSU	53							
	HEF1902	1742	LSU	65							
	HEF1902	2331	CSU	36							
	HEF1902	2332	CSU	35							
	HEF1902	2333	CSU	43							
	HEF1902	2334	CSU	80							
	HEF1902	2335	CSU	34							
	HEF1902	2336	CSU	77							
	HEF1902	2337	CSU	41							
	HEF1902	4440	CCG	31							
	HSF0901	64	GR	80			SC				
	HSF0901	448	LKC	96							
	HSF0901	955	LNC	67							
	HSF0901	956	LNC	62							
	HSF0901	957	LNC	62							
	HSF0901	1860	LSU	192							
	HSF0901	1861	LSU	163							
	HSF0901	2367	CSU	116							
	HSF0901	2368	CSU	142							
	HSF0901	2369	CSU	196							
	HSF0901	2370	CSU	184							
	HSF0901	2371	CSU	128							
	HSF0901	2372	CSU	129							
	HSF0901	2373	CSU	118							
	HSF0901	2374	CSU	121							
	HSF0901	2375	CSU	165							
	HSF0901	2376	CSU	151							
	HSF0901	2377	CSU	135							
	HSF0901	2378	CSU	155							
	HSF0901	2379	CSU	76							
	HSF0901	3038	MW	128							
	HSF0901	3039	MW	76							
	HSF0901	3040	MW	74							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0901	3041	MW	125							
	HSF0901	3042	MW	76							
	HSF0901	3043	MW	76							
	HSF0901	3044	MW	73							
	HSF0901	3045	MW	80							
	HSF0901	3046	MW	71							
	HSF0901	3047	MW	68							
	HSF0901	3048	MW	281							
	HSF0901	3369	NSC	111							
	HSF0901	3370	NSC	97							
	HSF0901	3371	NSC	130							
	HSF0901	3372	NSC	120							
	HSF0901	3701	RSC	132							
	HSF0901	3702	RSC	104							
	HSF0901	3703	RSC	86							
	HSF0901	3704	RSC	93							
	HSF0901	3705	RSC	89							
	HSF0901	3706	RSC	93							
	HSF0901	3707	RSC	89							
	HSF0901	3708	RSC	93							
	HSF0901	3709	RSC	102							
	HSF0901	3710	RSC	99							
	HSF0901	3711	RSC	91							
	HSF0901	4472	CCG	73							
	HSF0902	209	BT	201			SC				
	HSF0902	958	LNC	65							
	HSF0902	959	LNC	46							
	HSF0902	1862	LSU	198							
	HSF0902	1863	LSU	115							
	HSF0902	1864	LSU	121							
	HSF0902	1865	LSU	116							
	HSF0902	1866	LSU	136							
	HSF0902	1867	LSU	110							
	HSF0902	1868	LSU	111							
	HSF0902	1869	LSU	130							
	HSF0902	2380	CSU	174							
	HSF0902	2381	CSU	203							
	HSF0902	2382	CSU	177							
	HSF0902	2383	CSU	125							
	HSF0902	2384	CSU	128							
	HSF0902	2385	CSU	150							
	HSF0902	2386	CSU	143							
	HSF0902	2387	CSU	111							
	HSF0902	2388	CSU	118							
	HSF0902	2389	CSU	146							
	HSF0902	3049	MW	142							
	HSF0902	3050	MW	154							
	HSF0902	3051	MW	154							
	HSF0902	3052	MW	173							
	HSF0902	3053	MW	78							
	HSF0902	3054	MW	80							
	HSF0902	3055	MW	73							
	HSF0902	3056	MW	75							
	HSF0902	3057	MW	120							
	HSF0902	3058	MW	132							
	HSF0902	3059	MW	59							
	HSF0902	3373	NSC	153							
	HSF0902	3374	NSC	179							
	HSF0902	3375	NSC	152							
	HSF0902	3376	NSC	132							
	HSF0902	3377	NSC	117							
	HSF0902	3378	NSC	120							
	HSF0902	3379	NSC	130							
	HSF0902	3712	RSC	90							
	HSF0902	3713	RSC	56							
	HSF0902	3714	RSC	103							
	HSF0902	3715	RSC	95							
	HSF0902	3716	RSC	87							
	HSF0902	3717	RSC	92							
	HSF0902	3718	RSC	61							
	HSF0902	3719	RSC	94							
	HSF0902	3720	RSC	95							
	HSF0902	3721	RSC	94							
	HSF0903	210	BT	274							
	HSF0903	275	KO	223			SC				
	HSF0903	1870	LSU	291							
	HSF0903	1871	LSU	167							
	HSF0903	1872	LSU	193							
	HSF0903	1873	LSU	149							
	HSF0903	1874	LSU	175							
	HSF0903	1875	LSU	146							
	HSF0903	1876	LSU	151							
	HSF0903	1877	LSU	127							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0903	1878	LSU	151							
	HSF0903	1879	LSU	156							
	HSF0903	1880	LSU	119							
	HSF0903	2390	CSU	133							
	HSF0903	2391	CSU	129							
	HSF0903	2392	CSU	110							
	HSF0903	2393	CSU	135							
	HSF0903	2394	CSU	128							
	HSF0903	2395	CSU	130							
	HSF0903	2396	CSU	136							
	HSF0903	2397	CSU	171							
	HSF0903	2398	CSU	121							
	HSF0903	2399	CSU	147							
	HSF0903	3060	MW	252							
	HSF0903	3061	MW	213							
	HSF0903	3062	MW	213							
	HSF0903	3063	MW	134							
	HSF0903	3064	MW	143							
	HSF0903	3065	MW	141							
	HSF0903	3066	MW	86							
	HSF0903	3067	MW	76							
	HSF0903	3068	MW	80							
	HSF0903	3069	MW	140							
	HSF0903	3070	MW	81							
	HSF0903	3380	NSC	237							
	HSF0903	3381	NSC	226							
	HSF0903	3382	NSC	212							
	HSF0903	3383	NSC	161							
	HSF0903	3384	NSC	127							
	HSF0903	3385	NSC	121							
	HSF0903	3462	NP	444			FR				
	HSF0903	3722	RSC	89							
	HSF0903	3723	RSC	90							
	HSF0903	3724	RSC	86							
	HSF0903	3725	RSC	93							
	HSF0903	3726	RSC	95							
	HSF0903	3727	RSC	104							
	HSF0903	3728	RSC	101							
	HSF0903	3729	RSC	89							
	HSF0903	3730	RSC	87							
	HSF0903	3731	RSC	94							
	HSF0903	4161	RB	231			SC				
	HSF0903	4473	CCG	62							
	HSF0904	1881	LSU	264							
	HSF0904	1882	LSU	123							
	HSF0904	1883	LSU	199							
	HSF0904	1884	LSU	122							
	HSF0904	1885	LSU	127							
	HSF0904	1886	LSU	125							
	HSF0904	1887	LSU	126							
	HSF0904	1888	LSU	145							
	HSF0904	1889	LSU	158							
	HSF0904	1890	LSU	133							
	HSF0904	2400	CSU	288							
	HSF0904	2401	CSU	164							
	HSF0904	2402	CSU	144							
	HSF0904	2403	CSU	125							
	HSF0904	2404	CSU	105							
	HSF0904	2405	CSU	144							
	HSF0904	3071	MW	269							
	HSF0904	3072	MW	148							
	HSF0904	3073	MW	76							
	HSF0904	3074	MW	131							
	HSF0904	3075	MW	133							
	HSF0904	3076	MW	144							
	HSF0904	3077	MW	133							
	HSF0904	3078	MW	146							
	HSF0904	3079	MW	83							
	HSF0904	3080	MW	64							
	HSF0904	3081	MW	65							
	HSF0904	3082	MW	73							
	HSF0904	3386	NSC	283							
	HSF0904	3387	NSC	195							
	HSF0904	3388	NSC	78							
	HSF0904	3389	NSC	148							
	HSF0904	3732	RSC	94							
	HSF0904	3733	RSC	87							
	HSF0904	3734	RSC	90							
	HSF0904	3735	RSC	93							
	HSF0904	3736	RSC	57							
	HSF0904	3737	RSC	62							
	HSF0904	3738	RSC	96							
	HSF0904	3739	RSC	72							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0904	3740	RSC	65							
	HSF0904	3741	RSC	88							
	HSF0904	4474	CCG	70							
	HSF0905	960	LNC	46							
	HSF0905	961	LNC	68							
	HSF0905	962	LNC	48							
	HSF0905	963	LNC	60							
	HSF0905	1891	LSU	194							
	HSF0905	1892	LSU	125							
	HSF0905	1893	LSU	174							
	HSF0905	1894	LSU	131							
	HSF0905	1895	LSU	138							
	HSF0905	1896	LSU	121							
	HSF0905	1897	LSU	149							
	HSF0905	1898	LSU	136							
	HSF0905	1899	LSU	124							
	HSF0905	2406	CSU	112							
	HSF0905	2407	CSU	128							
	HSF0905	2408	CSU	137							
	HSF0905	2409	CSU	125							
	HSF0905	2410	CSU	144							
	HSF0905	3083	MW	80							
	HSF0905	3084	MW	90							
	HSF0905	3085	MW	78							
	HSF0905	3086	MW	74							
	HSF0905	3087	MW	88							
	HSF0905	3088	MW	193							
	HSF0905	3089	MW	133							
	HSF0905	3090	MW	146							
	HSF0905	3091	MW	133							
	HSF0905	3092	MW	147							
	HSF0905	3390	NSC	259							
	HSF0905	3391	NSC	80							
	HSF0905	3392	NSC	162							
	HSF0905	3393	NSC	164							
	HSF0905	3742	RSC	87							
	HSF0905	3743	RSC	87							
	HSF0905	3744	RSC	93							
	HSF0905	3745	RSC	101							
	HSF0905	3746	RSC	102							
	HSF0905	3747	RSC	95							
	HSF0905	3748	RSC	99							
	HSF0905	3749	RSC	91							
	HSF0905	3750	RSC	91							
	HSF0905	3751	RSC	92							
	HSF0905	4475	CCG	83							
	HSF0905	4476	CCG	61							
	HSF0906	449	LKC	90							
	HSF0906	450	LKC	101							
	HSF0906	964	LNC	45							
	HSF0906	1900	LSU	266							
	HSF0906	1901	LSU	119							
	HSF0906	1902	LSU	181							
	HSF0906	1903	LSU	144							
	HSF0906	1904	LSU	135							
	HSF0906	1905	LSU	145							
	HSF0906	1906	LSU	150							
	HSF0906	1907	LSU	129							
	HSF0906	1908	LSU	152							
	HSF0906	1909	LSU	152							
	HSF0906	2411	CSU	96							
	HSF0906	2412	CSU	134							
	HSF0906	2413	CSU	125							
	HSF0906	2414	CSU	166							
	HSF0906	2415	CSU	128							
	HSF0906	2416	CSU	129							
	HSF0906	2417	CSU	138							
	HSF0906	2418	CSU	190							
	HSF0906	2419	CSU	124							
	HSF0906	2420	CSU	73							
	HSF0906	3093	MW	53							
	HSF0906	3094	MW	87							
	HSF0906	3095	MW	83							
	HSF0906	3096	MW	133							
	HSF0906	3097	MW	87							
	HSF0906	3098	MW	85							
	HSF0906	3099	MW	85							
	HSF0906	3100	MW	137							
	HSF0906	3101	MW	82							
	HSF0906	3102	MW	68							
	HSF0906	3394	NSC	153							
	HSF0906	3395	NSC	99							
	HSF0906	3396	NSC	135							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF0906	3397	NSC	121							
	HSF0906	3752	RSC	119							
	HSF0906	3753	RSC	96							
	HSF0906	3754	RSC	97							
	HSF0906	3755	RSC	90							
	HSF0906	3756	RSC	98							
	HSF0906	3757	RSC	85							
	HSF0906	3758	RSC	89							
	HSF0906	3759	RSC	96							
	HSF0906	3760	RSC	88							
	HSF0906	3761	RSC	99							
	HSF0906	3762	RSC	56							
	HSF0906	4477	CCG	90							
	HSF0906	4478	CCG	63							
	HSF0906	4479	CCG	63							
10											
	HBS1902	323	LKC	64							
	HBS1902	2229	CSU	32							
	HBS1902	2230	CSU	33							
	HBS1902	2231	CSU	76							
	HBS1902	3583	RSC	28							
	HBS1902	3584	RSC	27							
	HBS1902	3585	RSC	18							
	HBS1902	3586	RSC	47							
	HBS1902	3587	RSC	31							
	HBS1902	3588	RSC	20							
	HBS1902	3589	RSC	22							
	HBS1902	3590	RSC	26							
	HBS1902	3591	RSC	29							
	HBS1902	3592	RSC	24							
	HBS1902	3593	RSC	35							
	HEF1003	744	LNC	20							
	HEF1003	745	LNC	23							
	HEF1003	746	LNC	21							
	HEF1003	747	LNC	20							
	HEF1003	748	LNC	29							
	HEF1003	749	LNC	19							
	HEF1003	750	LNC	21							
	HEF1003	751	LNC	22							
	HEF1003	752	LNC	18							
	HEF1003	753	LNC	28							
	HEF1003	1567	LSU	26							
	HEF1003	1568	LSU	29							
	HEF1003	2278	CSU	27							
	HEF1003	2279	CSU	37							
	HEF1003	3615	RSC	22							
	HEF1003	4308	CCG	58							
	HEF1003	4890	LSU	19							
	HEF1003	4891	CSU	19							
	HEF1005	754	LNC	22							
	HEF1005	755	LNC	36							
	HEF1005	1569	LSU	51							
	HEF1005	1570	LSU	98							
	HEF1005	2280	CSU	38							
	HEF1005	2281	CSU	68							
	HEF1005	2499	MW	68							
	HEF1005	2500	MW	52							
	HEF1005	2501	MW	54							
	HEF1005	2502	MW	73							
	HEF1005	3616	RSC	21							
	HEF1005	3617	RSC	27							
	HEF1005	3618	RSC	25							
	HEF1005	3619	RSC	22							
	HEF1005	4309	CCG	92							
	HEF1005	4310	CCG	38							
	HEF1006	374	LKC	83							
	HEF1006	375	LKC	70							
	HEF1006	376	LKC	80							
	HEF1006	377	LKC	56							
	HEF1006	378	LKC	61							
	HEF1006	379	LKC	68							
	HEF1006	380	LKC	63							
	HEF1006	381	LKC	80							
	HEF1006	382	LKC	54							
	HEF1006	383	LKC	55							
	HEF1006	756	LNC	25							
	HEF1006	757	LNC	20							
	HEF1006	758	LNC	22							
	HEF1006	759	LNC	28							
	HEF1006	760	LNC	23							
	HEF1006	761	LNC	62							
	HEF1006	762	LNC	28							
	HEF1006	763	LNC	23							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HEF1006	764	LNC	50							
	HEF1006	765	LNC	26							
	HEF1006	1571	LSU	25							
	HEF1006	1572	LSU	74							
	HEF1006	1573	LSU	87							
	HEF1006	1574	LSU	76							
	HEF1006	1575	LSU	80							
	HEF1006	1576	LSU	77							
	HEF1006	2282	CSU	78							
	HEF1006	2283	CSU	75							
	HEF1006	2284	CSU	72							
	HEF1006	2285	CSU	73							
	HEF1006	2286	CSU	64							
	HEF1006	2287	CSU	81							
	HEF1006	3620	RSC	28							
	HEF1006	3621	RSC	21							
	HEF1006	3622	RSC	26							
	HEF1006	3623	RSC	27							
	HEF1006	3624	RSC	16							
	HEF1006	3625	RSC	18							
	HEF1006	4311	CCG	40							
	HEF11001	766	LNC	25							
	HEF11001	767	LNC	19							
	HEF11001	768	LNC	28							
	HEF11001	769	LNC	21							
	HEF11001	770	LNC	19							
	HEF11001	771	LNC	28							
	HEF11001	772	LNC	32							
	HEF11001	773	LNC	17							
	HEF11001	774	LNC	21							
	HEF11001	775	LNC	24							
	HEF11001	1577	LSU	38							
	HEF11001	1578	LSU	33							
	HEF11001	1579	LSU	29							
	HEF11001	2288	CSU	33							
	HEF11001	2289	CSU	32							
	HEF11001	2290	CSU	34							
	HEF11001	2503	MW	55							
	HEF11001	3492	CAS	99							
	HEF11001	3626	RSC	22							
	HEF11001	3627	RSC	19							
	HEF11001	3628	RSC	28							
	HEF11001	4312	CCG	38							
	HEF11001	4313	CCG	34							
	HEF11001	4892	CSU	28							
	HEF11002	776	LNC	26							
	HEF11002	777	LNC	25							
	HEF11002	778	LNC	32							
	HEF11002	779	LNC	22							
	HEF11002	780	LNC	28							
	HEF11002	1580	LSU	34							
	HEF11002	1581	LSU	33							
	HEF11002	1582	LSU	24							
	HEF11002	1583	LSU	27							
	HEF11002	1584	LSU	24							
	HEF11002	1585	LSU	27							
	HEF11002	2291	CSU	35							
	HEF11002	2292	CSU	36							
	HEF11002	2293	CSU	34							
	HEF11002	2294	CSU	46							
	HEF11002	3493	CAS	96							
	HEF11002	3494	CAS	77							
	HEF11002	3495	CAS	99							
	HSF1001	211	BT	442							
	HSF1001	212	BT	182			SC				
	HSF1001	451	LKC	92							
	HSF1001	965	LNC	73							
	HSF1001	966	LNC	72							
	HSF1001	967	LNC	72							
	HSF1001	968	LNC	64							
	HSF1001	969	LNC	67							
	HSF1001	1910	LSU	151							
	HSF1001	1911	LSU	127							
	HSF1001	1912	LSU	120							
	HSF1001	1913	LSU	151							
	HSF1001	1914	LSU	226							
	HSF1001	1915	LSU	153							
	HSF1001	1916	LSU	119							
	HSF1001	1917	LSU	136							
	HSF1001	1918	LSU	132							
	HSF1001	1919	LSU	142							
	HSF1001	2421	CSU	158							
	HSF1001	2422	CSU	163							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1001	2423	CSU	142							
	HSF1001	2424	CSU	127							
	HSF1001	2425	CSU	138							
	HSF1001	2426	CSU	182							
	HSF1001	2427	CSU	138							
	HSF1001	2428	CSU	121							
	HSF1001	2429	CSU	135							
	HSF1001	2430	CSU	136							
	HSF1001	3103	MW	274							
	HSF1001	3104	MW	138							
	HSF1001	3105	MW	67							
	HSF1001	3106	MW	123							
	HSF1001	3107	MW	87							
	HSF1001	3108	MW	84							
	HSF1001	3109	MW	76							
	HSF1001	3110	MW	73							
	HSF1001	3111	MW	68							
	HSF1001	3112	MW	76							
	HSF1001	3398	NSC	136							
	HSF1001	3399	NSC	80							
	HSF1001	3400	NSC	162							
	HSF1001	3496	CAS	101							
	HSF1001	3763	RSC	85							
	HSF1001	3764	RSC	91							
	HSF1001	4480	CCG	63							
	HSF1001	4481	CCG	63							
	HSF1001	4482	CCG	43							
	HSF1002	65	GR	156			SC				
	HSF1002	213	BT	176			SC				
	HSF1002	452	LKC	95							
	HSF1002	453	LKC	92							
	HSF1002	970	LNC	63							
	HSF1002	1920	LSU	147							
	HSF1002	1921	LSU	168							
	HSF1002	1922	LSU	143							
	HSF1002	1923	LSU	153							
	HSF1002	1924	LSU	148							
	HSF1002	1925	LSU	150							
	HSF1002	1926	LSU	155							
	HSF1002	1927	LSU	133							
	HSF1002	1928	LSU	121							
	HSF1002	1929	LSU	123							
	HSF1002	2431	CSU	281							
	HSF1002	2432	CSU	131							
	HSF1002	2433	CSU	138							
	HSF1002	2434	CSU	178							
	HSF1002	2435	CSU	164							
	HSF1002	2436	CSU	140							
	HSF1002	2437	CSU	149							
	HSF1002	2438	CSU	138							
	HSF1002	2439	CSU	144							
	HSF1002	2440	CSU	139							
	HSF1002	3113	MW	142							
	HSF1002	3114	MW	130							
	HSF1002	3115	MW	78							
	HSF1002	3116	MW	98							
	HSF1002	3117	MW	146							
	HSF1002	3118	MW	104							
	HSF1002	3119	MW	125							
	HSF1002	3120	MW	68							
	HSF1002	3121	MW	53							
	HSF1002	3122	MW	63							
	HSF1002	3401	NSC	152							
	HSF1002	3402	NSC	135							
	HSF1002	3403	NSC	78							
	HSF1002	3765	RSC	96							
	HSF1002	3766	RSC	100							
	HSF1002	3767	RSC	96							
	HSF1002	3768	RSC	103							
	HSF1002	3769	RSC	94							
	HSF1002	3770	RSC	96							
	HSF1002	3771	RSC	102							
	HSF1002	3772	RSC	98							
	HSF1002	3773	RSC	103							
	HSF1002	3774	RSC	97							
	HSF1002	4483	CCG	81							
	HSF1003	454	LKC	97							
	HSF1003	971	LNC	64							
	HSF1003	972	LNC	62							
	HSF1003	1930	LSU	287							
	HSF1003	1931	LSU	160							
	HSF1003	1932	LSU	123							
	HSF1003	1933	LSU	154							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1003	1934	LSU	172							
	HSF1003	1935	LSU	130							
	HSF1003	1936	LSU	131							
	HSF1003	1937	LSU	173							
	HSF1003	1938	LSU	184							
	HSF1003	1939	LSU	220							
	HSF1003	2441	CSU	185							
	HSF1003	2442	CSU	167							
	HSF1003	2443	CSU	140							
	HSF1003	2444	CSU	154							
	HSF1003	2445	CSU	123							
	HSF1003	2446	CSU	122							
	HSF1003	2447	CSU	138							
	HSF1003	2448	CSU	84							
	HSF1003	2449	CSU	149							
	HSF1003	2450	CSU	83							
	HSF1003	3123	MW	200							
	HSF1003	3124	MW	79							
	HSF1003	3125	MW	138							
	HSF1003	3126	MW	124							
	HSF1003	3127	MW	130							
	HSF1003	3128	MW	75							
	HSF1003	3129	MW	146							
	HSF1003	3130	MW	125							
	HSF1003	3131	MW	140							
	HSF1003	3404	NSC	200							
	HSF1003	3405	NSC	94							
	HSF1003	3406	NSC	187							
	HSF1003	3407	NSC	143							
	HSF1003	3408	NSC	167							
	HSF1003	3409	NSC	136							
	HSF1003	3410	NSC	143							
	HSF1003	3411	NSC	171							
	HSF1003	3412	NSC	165							
	HSF1003	3775	RSC	96							
	HSF1003	3776	RSC	99							
	HSF1003	3777	RSC	85							
	HSF1003	3778	RSC	97							
	HSF1003	3779	RSC	58							
	HSF1003	3780	RSC	101							
	HSF1003	3781	RSC	96							
	HSF1003	3782	RSC	103							
	HSF1003	3783	RSC	94							
	HSF1003	3784	RSC	84							
	HSF1003	3785	RSC	90							
	HSF1003	3786	RSC	58							
	HSF1003	4484	CCG	70							
	HSF1003	4485	CCG	83							
	HSF1003	4486	CCG	75							
	HSF1003	4487	CCG	80							
	HSF1003	5278	WP	421			FR				
	HSF1004	455	LKC	95							
	HSF1004	973	LNC	48							
	HSF1004	974	LNC	44							
	HSF1004	975	LNC	76							
	HSF1004	976	LNC	81							
	HSF1004	977	LNC	69							
	HSF1004	978	LNC	75							
	HSF1004	979	LNC	49							
	HSF1004	1940	LSU	205							
	HSF1004	1941	LSU	185							
	HSF1004	1942	LSU	158							
	HSF1004	1943	LSU	200							
	HSF1004	1944	LSU	195							
	HSF1004	1945	LSU	131							
	HSF1004	1946	LSU	171							
	HSF1004	1947	LSU	157							
	HSF1004	1948	LSU	140							
	HSF1004	1949	LSU	148							
	HSF1004	2451	CSU	153							
	HSF1004	2452	CSU	127							
	HSF1004	2453	CSU	160							
	HSF1004	2454	CSU	155							
	HSF1004	2455	CSU	153							
	HSF1004	2456	CSU	113							
	HSF1004	2457	CSU	174							
	HSF1004	2458	CSU	142							
	HSF1004	2459	CSU	142							
	HSF1004	2460	CSU	118							
	HSF1004	3132	MW	128							
	HSF1004	3133	MW	144							
	HSF1004	3134	MW	90							
	HSF1004	3135	MW	148							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1004	3136	MW	151							
	HSF1004	3137	MW	158							
	HSF1004	3138	MW	99							
	HSF1004	3139	MW	83							
	HSF1004	3140	MW	68							
	HSF1004	3141	MW	80							
	HSF1004	3413	NSC	187							
	HSF1004	3787	RSC	100							
	HSF1004	3788	RSC	88							
	HSF1004	3789	RSC	92							
	HSF1004	3790	RSC	88							
	HSF1004	3791	RSC	90							
	HSF1004	3792	RSC	58							
	HSF1004	3793	RSC	95							
	HSF1004	3794	RSC	104							
	HSF1004	3795	RSC	93							
	HSF1004	3796	RSC	105							
	HSF1004	4162	RB	153			SC				
	HSF1005	229	BB	500							
	HSF1005	980	LNC	63							
	HSF1005	981	LNC	68							
	HSF1005	982	LNC	61							
	HSF1005	983	LNC	68							
	HSF1005	984	LNC	52							
	HSF1005	985	LNC	45							
	HSF1005	986	LNC	74							
	HSF1005	1950	LSU	255							
	HSF1005	1951	LSU	182							
	HSF1005	1952	LSU	108							
	HSF1005	1953	LSU	120							
	HSF1005	1954	LSU	152							
	HSF1005	1955	LSU	160							
	HSF1005	1956	LSU	142							
	HSF1005	1957	LSU	139							
	HSF1005	1958	LSU	103							
	HSF1005	1959	LSU	145							
	HSF1005	1960	LSU	126							
	HSF1005	2461	CSU	162							
	HSF1005	2462	CSU	152							
	HSF1005	2463	CSU	110							
	HSF1005	2464	CSU	81							
	HSF1005	2465	CSU	111							
	HSF1005	2466	CSU	150							
	HSF1005	2467	CSU	151							
	HSF1005	2468	CSU	155							
	HSF1005	2469	CSU	138							
	HSF1005	2470	CSU	124							
	HSF1005	3142	MW	83							
	HSF1005	3143	MW	82							
	HSF1005	3144	MW	138							
	HSF1005	3145	MW	132							
	HSF1005	3146	MW	84							
	HSF1005	3147	MW	75							
	HSF1005	3148	MW	75							
	HSF1005	3149	MW	132							
	HSF1005	3150	MW	66							
	HSF1005	3151	MW	79							
	HSF1005	3414	NSC	142							
	HSF1005	3415	NSC	175							
	HSF1005	3416	NSC	140							
	HSF1005	3417	NSC	152							
	HSF1005	3797	RSC	100							
	HSF1005	3798	RSC	90							
	HSF1005	3799	RSC	92							
	HSF1005	3800	RSC	52							
	HSF1005	3801	RSC	100							
	HSF1005	3802	RSC	91							
	HSF1005	3803	RSC	74							
	HSF1005	3804	RSC	104							
	HSF1005	3805	RSC	95							
	HSF1005	3806	RSC	99							
	HSF1005	4488	CCG	60							
	HSF1005	4489	CCG	74							
	HSF1005	4490	CCG	86							
	HSF1005	4491	CCG	38							
	HSF1006	66	GR	152			SC				
	HSF1006	230	BB	473							
	HSF1006	231	BB	404							
	HSF1006	274	FHC	157							
	HSF1006	987	LNC	68							
	HSF1006	988	LNC	64							
	HSF1006	989	LNC	63							
	HSF1006	990	LNC	67							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	HSF1006	991	LNC	52							
	HSF1006	1961	LSU	160							
	HSF1006	1962	LSU	121							
	HSF1006	1963	LSU	194							
	HSF1006	1964	LSU	147							
	HSF1006	1965	LSU	123							
	HSF1006	1966	LSU	128							
	HSF1006	1967	LSU	125							
	HSF1006	2471	CSU	232							
	HSF1006	2472	CSU	135							
	HSF1006	2473	CSU	132							
	HSF1006	2474	CSU	106							
	HSF1006	2475	CSU	127							
	HSF1006	2476	CSU	148							
	HSF1006	2477	CSU	127							
	HSF1006	2478	CSU	108							
	HSF1006	2479	CSU	116							
	HSF1006	2480	CSU	141							
	HSF1006	2481	CSU	142							
	HSF1006	2482	CSU	122							
	HSF1006	3152	MW	314							
	HSF1006	3153	MW	193							
	HSF1006	3154	MW	73							
	HSF1006	3155	MW	84							
	HSF1006	3156	MW	132							
	HSF1006	3157	MW	82							
	HSF1006	3158	MW	142							
	HSF1006	3159	MW	146							
	HSF1006	3160	MW	71							
	HSF1006	3161	MW	68							
	HSF1006	3418	NSC	190							
	HSF1006	3419	NSC	146							
	HSF1006	3420	NSC	131							
	HSF1006	3421	NSC	114							
	HSF1006	3422	NSC	127							
	HSF1006	3807	RSC	96							
	HSF1006	3808	RSC	95							
	HSF1006	3809	RSC	102							
	HSF1006	3810	RSC	97							
	HSF1006	3811	RSC	94							
	HSF1006	3812	RSC	56							
	HSF1006	3813	RSC	103							
	HSF1006	3814	RSC	94							
	HSF1006	3815	RSC	82							
	HSF1006	4492	CCG	73							
	HSF1006	4493	CCG	84							
	HSF1006	4494	CCG	68							
	MEF1005	103	GR	80			SC				
	MEF1005	104	GR	80			SC				
	MEF1005	105	GR	71			SC				
	MEF1005	106	GR	71			SC				
	MEF1005	107	GR	75			SC				
	MEF1005	108	GR	74			SC				
	MEF1005	109	GR	71			SC				
	MEF1005	506	LKC	37							
	MEF1005	507	LKC	29							
	MEF1005	508	LKC	33							
	MEF1005	509	LKC	31							
	MEF1005	510	LKC	34							
	MEF1005	511	LKC	23							
	MEF1005	512	LKC	24							
	MEF1005	513	LKC	32							
	MEF1005	514	LKC	64							
	MEF1005	515	LKC	39							
	MEF1005	516	LKC	37							
	MEF1005	517	LKC	34							
	MEF1005	1199	LNC	29							
	MEF1005	1200	LNC	27							
	MEF1005	1201	LNC	20							
	MEF1005	1202	LNC	24							
	MEF1005	1203	LNC	27							
	MEF1005	1204	LNC	26							
	MEF1005	1205	LNC	26							
	MEF1005	1206	LNC	27							
	MEF1005	1207	LNC	34							
	MEF1005	2069	LSU	43							
	MEF1005	2070	LSU	36							
	MEF1005	2071	LSU	36							
	MEF1005	2072	LSU	63							
	MEF1005	2073	LSU	38							
	MEF1005	2074	LSU	36							
	MEF1005	2075	LSU	45							
	MEF1005	2076	LSU	35							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1005	2077	LSU	38							
	MEF1005	2078	LSU	37							
	MEF1005	2079	LSU	56							
	MEF1005	3297	MW	79			SC				
	MEF1005	3298	MW	56			SC				
	MEF1005	3299	MW	68			SC				
	MEF1005	3300	MW	60			SC				
	MEF1005	3301	MW	61			SC				
	MEF1005	3302	MW	62			SC				
	MEF1005	3303	MW	49			SC				
	MEF1005	3908	RSC	27							
	MEF1005	3909	RSC	24							
	MEF1005	3910	RSC	24							
	MEF1005	3911	RSC	22							
	MEF1005	3912	RSC	30							
	MEF1005	3913	RSC	21							
	MEF1005	3914	RSC	24							
	MEF1005	3915	RSC	27							
	MEF1005	3916	RSC	28							
	MEF1005	3917	RSC	24							
	MEF1005	5116	WSC	32							
	MEF1005	5117	WSC	26							
	MEF1005	5118	WSC	33							
	MEF1005	5119	WSC	34							
	MEF1005	5120	WSC	31							
	MEF1005	5121	WSC	27							
	MEF1005	5122	WSC	33							
	MEF1005	5123	WSC	33							
	MEF1005	5124	WSC	31							
	MEF1005	5125	WSC	29							
	MEF1005	5126	WSC	28							
	MEF1005	5283	WSC	79							
	MEF1005	5284	WSC	83							
	MEF11001	518	LKC	98							
	MEF11001	519	LKC	54							
	MEF11001	520	LKC	63							
	MEF11001	1208	LNC	58							
	MEF11001	1209	LNC	33							
	MEF11001	1210	LNC	54							
	MEF11001	1211	LNC	54							
	MEF11001	1212	LNC	88							
	MEF11001	1213	LNC	53							
	MEF11001	1214	LNC	31							
	MEF11001	1215	LNC	27							
	MEF11001	1216	LNC	27							
	MEF11001	1217	LNC	43							
	MEF11001	1218	LNC	67							
	MEF11001	2080	LSU	107							
	MEF11001	3918	RSC	55							
	MEF11001	3919	RSC	50							
	MEF11001	3920	RSC	53							
	MEF11001	3921	RSC	53							
	MEF11001	3922	RSC	74							
	MEF11001	3923	RSC	52							
	MEF11001	3924	RSC	80							
	MEF11001	3925	RSC	51							
	MEF11002	110	GR	95			SC				
	MEF11002	111	GR	73			SC				
	MEF11002	112	GR	73			SC				
	MEF11002	521	LKC	62							
	MEF11002	522	LKC	36							
	MEF11002	523	LKC	67							
	MEF11002	524	LKC	31							
	MEF11002	525	LKC	54							
	MEF11002	526	LKC	70							
	MEF11002	527	LKC	33							
	MEF11002	1219	LNC	31							
	MEF11002	1220	LNC	30							
	MEF11002	1221	LNC	27							
	MEF11002	1222	LNC	50							
	MEF11002	1223	LNC	30							
	MEF11002	1224	LNC	21							
	MEF11002	1225	LNC	27							
	MEF11002	1226	LNC	29							
	MEF11002	1227	LNC	50							
	MEF11002	1228	LNC	61							
	MEF11002	2081	LSU	49							
	MEF11002	2082	LSU	39							
	MEF11002	3304	MW	72			SC				
	MEF11002	4619	CCG	39							
	MEF11002	5127	LSU	32							
	MEF11002	5128	LSU	37							
	MEF11002	5129	LSU	27							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF11002	5130	LSU	30							
	MEF11002	5131	LSU	35							
	MEF11003	113	GR	77			SC				
	MEF11003	248	BB	138							
	MEF11003	249	BB	168							
	MEF11003	250	BB	129							
	MEF11003	251	BB	149							
	MEF11003	252	BB	126							
	MEF11003	528	LKC	67							
	MEF11003	1229	LNC	70							
	MEF11003	1230	LNC	45							
	MEF11003	1231	LNC	52							
	MEF11003	1232	LNC	34							
	MEF11003	1233	LNC	56							
	MEF11003	1234	LNC	34							
	MEF11003	1235	LNC	55							
	MEF11003	1236	LNC	67							
	MEF11003	1237	LNC	32							
	MEF11003	1238	LNC	68							
	MEF11003	2083	LSU	93							
	MEF11003	2084	LSU	86							
	MEF11003	2085	LSU	76							
	MEF11003	2086	LSU	71							
	MEF11003	2087	LSU	82							
	MEF11003	2088	LSU	64							
	MEF11003	2089	LSU	76							
	MEF11003	2090	LSU	77							
	MEF11003	3305	MW	82			SC				
	MEF11003	3306	MW	76			SC				
	MEF11003	3926	RSC	74							
	MEF11003	4620	CCG	75							
	MEF11003	4621	CCG	40							
	MEF11004	529	LKC	91							
	MEF11004	530	LKC	90							
	MEF11004	531	LKC	61							
	MEF11004	532	LKC	64							
	MEF11004	1239	LNC	31							
	MEF11004	1240	LNC	53							
	MEF11004	1241	LNC	45							
	MEF11004	1242	LNC	28							
	MEF11004	1243	LNC	30							
	MEF11004	1244	LNC	27							
	MEF11004	1245	LNC	28							
	MEF11004	1246	LNC	31							
	MEF11004	1247	LNC	59							
	MEF11004	1248	LNC	27							
	MEF11004	1249	LNC	33							
	MEF11004	1250	LNC	81							
	MEF11004	1251	LNC	60							
	MEF11004	1252	LNC	44							
	MEF11004	1253	LNC	26							
	MEF11004	1254	LNC	31							
	MEF11004	2091	LSU	48							
	MEF11004	2092	LSU	84							
	MEF11004	2093	LSU	44							
	MEF11004	2094	LSU	115							
	MEF11004	2095	LSU	44							
	MEF11004	2096	LSU	48							
	MEF11004	2097	LSU	45							
	MEF11004	2098	LSU	94							
	MEF11004	3423	NSC	97							
	MEF11004	3927	RSC	103							
	MEF11004	3928	RSC	63							
	MEF11004	3929	RSC	27							
	MEF11004	3930	RSC	84							
	MEF11004	3931	RSC	63							
	MEF11004	3932	RSC	52							
	MEF11004	3933	RSC	89							
	MEF11004	3934	RSC	76							
	MEF11004	3935	RSC	35							
	MEF11004	4170	RB	120			SC				
	MEF11004	5132	LSU	32							
	MEF11004	5133	LSU	32							
	MEF11005	533	LKC	72							
	MEF11005	1255	LNC	27							
	MEF11005	1256	LNC	90							
	MEF11005	1257	LNC	72							
	MEF11005	1258	LNC	49							
	MEF11005	1259	LNC	24							
	MEF11005	1260	LNC	47							
	MEF11005	1261	LNC	25							
	MEF11005	1262	LNC	75							
	MEF11005	1263	LNC	53							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF11005	2099	LSU	87							
	MEF11005	3497	CAS	92							
	MEF11005	3936	RSC	96							
	MEF11005	3937	RSC	72							
	MEF11005	3938	RSC	27							
	MEF11005	3939	RSC	100							
	MEF11005	3940	RSC	103							
	MEF11005	3941	RSC	82							
	MEF11005	3942	RSC	103							
	MEF11005	3943	RSC	95							
	MEF11005	3944	RSC	94							
	MEF11005	3945	RSC	51							
	MEF11005	3946	RSC	24							
	MEF11005	3947	RSC	15							
	MEF11005	3948	RSC	27							
	MEF11005	3949	RSC	0							
	MEF1901	566	LKC	41							
	MEF1901	567	LKC	76							
	MEF1901	568	LKC	89							
	MEF1901	569	LKC	70							
	MEF1901	570	LKC	46							
	MEF1901	2170	LSU	55							
	MEF1901	4061	RSC	22							
	MEF1901	4062	RSC	19							
	MEF1901	4063	RSC	22							
	MEF1901	4064	RSC	22							
	MEF1901	4065	RSC	19							
	MEF1901	4066	RSC	19							
	MEF1901	4067	RSC	20							
	MEF1901	4068	RSC	23							
	MEF1901	4069	RSC	20							
	MEF1901	4070	RSC	20							
	MEF1901	5214	WSC	19							
	MEF1901	5215	WSC	20							
	MEF1901	5216	WSC	21							
	MEF1901	5217	WSC	22							
	MEF1901	5218	WSC	19							
	MEF1901	5219	LSU	20							
	MEF1901	5220	LSU	21							
	MEF1901	5221	LSU	23							
	MEF1901	5222	LSU	22							
	MEF1901	5223	LSU	22							
	MEF1901	5224	LSU	20							
	MEF1901	5225	LSU	19							
	MEF1901	5226	LSU	24							
	MEF1902	142	GR	62			SC				
	MEF1902	2171	LSU	39							
	MEF1902	2172	LSU	38							
	MEF1902	2173	LSU	40							
	MEF1902	2174	LSU	37							
	MEF1902	4701	CCG	80							
	MEF1902	4702	CCG	68							
	MEF1902	4703	CCG	32							
	MEF1902	5227	LSU	23							
	MEF1902	5228	LSU	21							
	MEF1902	5229	LSU	30							
	MEF1902	5230	LSU	34							
	MEF1902	5231	LSU	27							
	MEF1902	5232	LSU	23							
	MEF1902	5233	LSU	24							
	MEF1902	5234	LSU	23							
	MEF1902	5235	LSU	33							
	MEF1902	5236	LSU	33							
	MEF1902	5237	LSU	27							
	MEF1903	571	LKC	98							
	MEF1903	572	LKC	61							
	MEF1903	573	LKC	100							
	MEF1903	574	LKC	66							
	MEF1903	1411	LNC	30							
	MEF1903	1412	LNC	67							
	MEF1903	1413	LNC	32							
	MEF1903	1414	LNC	89							
	MEF1903	1415	LNC	25							
	MEF1903	1416	LNC	29							
	MEF1903	1417	LNC	29							
	MEF1903	1418	LNC	28							
	MEF1903	1419	LNC	22							
	MEF1903	1420	LNC	29							
	MEF1903	1421	LNC	16							
	MEF1903	2175	LSU	122							
	MEF1903	2176	LSU	146							
	MEF1903	2177	LSU	35							
	MEF1903	2178	LSU	40							

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Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1903	2179	LSU	41							
	MEF1903	2180	LSU	77							
	MEF1903	2181	LSU	49							
	MEF1903	2182	LSU	43							
	MEF1903	3424	NSC	99							
	MEF1903	3425	NSC	130							
	MEF1903	4071	RSC	99							
	MEF1903	4072	RSC	61							
	MEF1903	4073	RSC	110							
	MEF1903	4074	RSC	79							
	MEF1903	4075	RSC	102							
	MEF1903	4076	RSC	56							
	MEF1903	4077	RSC	103							
	MEF1903	4078	RSC	103							
	MEF1903	4079	RSC	28							
	MEF1903	4080	RSC	104							
	MEF1903	4704	CCG	39							
	MEF1903	5238	LSU	33							
	MEF1903	5288	WSC	156							
	MEF1903	5289	WSC	86							
	MEF1904	575	LKC	105							
	MEF1904	1422	LNC	76							
	MEF1904	1423	LNC	48							
	MEF1904	1424	LNC	70							
	MEF1904	1425	LNC	63							
	MEF1904	1426	LNC	29							
	MEF1904	1427	LNC	63							
	MEF1904	1428	LNC	27							
	MEF1904	1429	LNC	66							
	MEF1904	1430	LNC	66							
	MEF1904	1431	LNC	59							
	MEF1904	1432	LNC	54							
	MEF1904	1433	LNC	74							
	MEF1904	1434	LNC	57							
	MEF1904	1435	LNC	34							
	MEF1904	1436	LNC	56							
	MEF1904	1437	LNC	36							
	MEF1904	1438	LNC	64							
	MEF1904	2183	LSU	64							
	MEF1904	4081	RSC	29							
	MEF1904	4082	RSC	85							
	MEF1904	4705	CCG	62							
	MEF1905	272	BB	145							
	MEF1905	576	LKC	59							
	MEF1905	577	LKC	55							
	MEF1905	1439	LNC	28							
	MEF1905	1440	LNC	25							
	MEF1905	1441	LNC	25							
	MEF1905	1442	LNC	17							
	MEF1905	1443	LNC	20							
	MEF1905	3426	NSC	116							
	MEF1905	4083	RSC	118							
	MEF1905	4084	RSC	13							
	MEF1905	4085	RSC	80							
	MEF1905	4086	RSC	71							
	MEF1905	4087	RSC	30							
	MEF1905	4088	RSC	26							
	MEF1905	4089	RSC	23							
	MEF1905	4090	RSC	22							
	MEF1905	4091	RSC	27							
	MEF1905	4092	RSC	103							
	MEF1905	4093	RSC	80							
	MEF1905	4094	RSC	83							
	MEF1905	4095	RSC	83							
	MEF1905	4096	RSC	18							
	MEF1905	4097	RSC	95							
	MEF1905	4098	RSC	20							
	MEF1905	4099	RSC	22							
	MEF1905	4100	RSC	23							
	MEF1905	4101	RSC	20							
	MEF1905	4102	RSC	25							
	MEF1905	4103	RSC	22							
	MEF1905	4104	RSC	16							
	MEF1905	4105	RSC	16							
	MEF1905	5239	LSU	33							
	MEF1905	5240	LSU	30							
	MEF1906	578	LKC	52							
	MEF1906	1444	LNC	24							
	MEF1906	1445	LNC	21							
	MEF1906	1446	LNC	28							
	MEF1906	1447	LNC	29							
	MEF1906	1448	LNC	106							
	MEF1906	1449	LNC	59							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF1906	1450	LNC	73							
	MEF1906	1451	LNC	68							
	MEF1906	1452	LNC	26							
	MEF1906	1453	LNC	68							
	MEF1906	1454	LNC	57							
	MEF1906	1455	LNC	71							
	MEF1906	1456	LNC	52							
	MEF1906	1457	LNC	68							
	MEF1906	1458	LNC	57							
	MEF1906	1459	LNC	30							
	MEF1906	1460	LNC	62							
	MEF1906	1461	LNC	37							
	MEF1906	1462	LNC	61							
	MEF1906	1463	LNC	66							
	MEF1906	1464	LNC	52							
	MEF1906	1465	LNC	62							
	MEF1906	1466	LNC	74							
	MEF1906	1467	LNC	42							
	MEF1906	1468	LNC	35							
	MEF1906	1469	LNC	31							
	MEF1906	1470	LNC	37							
	MEF1906	4106	RSC	84							
	MEF1906	4107	RSC	32							
	MEF1906	4108	RSC	32							
	MEF1906	4706	CCG	79							
	MEF1906	4707	CCG	87							
	MEF1906	5290	WSC	82							
1A											
	MBS0001	456	LKC	27							
	MBS0001	457	LKC	25							
	MBS0001	458	LKC	25							
	MBS0001	459	LKC	26							
	MBS0001	460	LKC	27							
	MBS0001	461	LKC	28							
	MBS0001	462	LKC	23							
	MBS0001	463	LKC	23							
	MBS0001	464	LKC	24							
	MBS0001	465	LKC	22							
	MBS0001	4967	LSU	23							
	MBS0001	4968	LSU	27							
	MBS0001	4969	LSU	20							
	MBS0001	4970	LSU	21							
	MBS0001	4971	LSU	22							
	MBS0001	4972	LSU	21							
	MBS0001	4973	LSU	24							
	MBS0001	4974	LSU	25							
	MBS0001	4975	LSU	22							
	MBS0001	4976	LSU	24							
	MEF0001	232	BB	260							
	MEF0001	1030	LNC	62							
	MEF0001	1031	LNC	91							
	MEF0001	1032	LNC	73							
	MEF0001	1033	LNC	81							
	MEF0001	1034	LNC	70							
	MEF0001	1035	LNC	75							
	MEF0001	1036	LNC	83							
	MEF0001	1037	LNC	85							
	MEF0001	1038	LNC	94							
	MEF0001	1039	LNC	71							
	MEF0001	2024	LSU	33							
	MEF0001	2025	LSU	33							
	MEF0001	2026	LSU	36							
	MEF0001	2027	LSU	33							
	MEF0001	4513	CCG	62							
	MEF0001	4514	CCG	72							
	MEF0001	4515	CCG	78							
	MEF0001	4516	CCG	82							
	MEF0001	4517	CCG	99							
	MEF0001	4518	CCG	78							
	MEF0001	4519	CCG	72							
	MEF0001	4520	CCG	52							
	MEF0001	4521	CCG	80							
	MEF0001	4522	CCG	78							
	MEF0001	4523	CCG	71							
	MEF0001	4524	CCG	47							
	MEF0001	5049	LSU	29							
	MEF0001	5050	LSU	30							
	MEF0002	1040	LNC	44							
	MEF0002	1041	LNC	52							
	MEF0002	1042	LNC	75							
	MEF0002	1043	LNC	58							
	MEF0002	1044	LNC	70							
	MEF0002	2028	LSU	37							

See Appendix B for definitions

Appendix F Table F1. Biological characteristics data for sampled fish, 2010 Major Tributary Fish Inventory.

Section	Site	FishID	Species	Fork Len (mm)	Wt. (g)	Sexual Mat.	Age Struct.	Age	Tag Type	Tag No.	Capt. Code
	MEF0002	2029	LSU	40							
	MEF0002	2030	LSU	35							
	MEF0002	2031	LSU	42							
	MEF0002	2032	LSU	33							
	MEF0002	2033	LSU	35							
	MEF0002	2034	LSU	35							
	MEF0002	2035	LSU	44							
	MEF0002	2036	LSU	35							
	MEF0002	2037	LSU	35							
	MEF0002	2038	LSU	32							
	MEF0002	4525	CCG	72							
	MEF0002	4526	CCG	70							
	MEF0002	4527	CCG	27							
	MEF0002	4528	CCG	48							
	MEF0002	4529	CCG	27							
	MEF0002	4530	CCG	33							
	MEF0002	4531	CCG	84							
	MEF0002	4532	CCG	34							
	MEF0002	5051	LSU	30							
	MEF0002	5052	LSU	27							
	MEF0002	5053	LSU	28							
	MEF0002	5054	LSU	29							
	MEF0003	233	BB	157							
	MEF0003	234	BB	147							
	MEF0003	488	LKC	23							
	MEF0003	489	LKC	30							
	MEF0003	3465	NP	125			SC				
	MEF0003	4533	CCG	50							
	MEF0003	4534	CCG	72							
	MEF0003	4535	CCG	68							
	MEF0003	4536	CCG	33							
	MEF0003	5055	LSU	23							

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