FILE 34560-27/ BULK
BUCK CK

PROJECT DATA REPORT

1999 Buck Creek Juvenile Salmonid Trapping Program

Submitted to: Barry Finnegan
Northern Coho Stock Assessment Biologist
Stock Assessment Section, Science Sector
Pacific Region, Fisheries and Oceans Canada

Submitted by: Scott Mackay
Bulkley Watershed Stewardship Coordinator

CFDC NADINA

BOX 236 HOUSTON BC V0J 1Z0

ACKNOWLEDGEMENTS

The author would like to first acknowledge the exceptional work of technicians Jim and Tracy DeLaMare in carrying out all fieldwork for this project and their many donations of time and the use of personal equipment in seeing it through. Furthermore, thanks are extended to Barry Finnegan, Mike O'Neill, Mattew Jessop, Dana Atagi, and Angus Glass, and also to the numerous Buck Flats residents who kept an eye out for vandals.

EXECUTIVE SUMMARY

In the spring of 1999, the Community Futures Development Corporation of Nadina (CFDCN) was contracted by Barry Finnegan, Northern Coho Stock Assessment Biologist of Fisheries and Oceans Canada, to operate a Rotary Screw Trap (RST) on Buck Creek in the Upper Bulkley Watershed. The program was originally designed as a two-phase program. Spring (June 1-30) sampling was intended to enumerate and sample salmonid downstream migrants. Summer (August 1-31) sampling was intended to monitor the effects of a coho fry outplanting on both the movements of resident fish and the fry themselves (ie- were they remaining in the Buck Flats area or moving elsewhere after being released). Complications in the timing of the fry release led to the summer portion of the program being dropped.

Buck Creek is the major affluent of the Upper Bulkley River, with a drainage area of 580 km^2 (approximately 25% of watershed area) (NHC, 1997). Buck Creek has been cited as one of the most significant "nursery" streams for juvenile salmonids n the watershed (BCCF, 1997).

The results from the trap operation log, and biological sampling are found in hardcopy and digital format in appendix C. Catch was classified by species, maturity (immature (juveniles), maturing (smolts), mature (adults)), and origin (hatchery or wild). Whitefish and non-salmonids were grouped together as "other fish" as they are not target species for management agencies. Pacific and river lamprey were not enumerated although it is of note that both species of adults were identified as present during the sampling period. The results of the June 17 mark-recapture for trap efficiency are presented in table 1. A breakdown of total catch composition by species/origin is presented in figure 2. Catch results as catch per unit effort (CPUE) over the sampling period are presented in figure 3 by species/origin. Total CPUE for the trap by haul is shown in figure 4. A graphical summary of environmental data (temperature/water level) is found in figure 5.

Several recommendations are made on how this program might be improved if carried out in future years.

TABLE OF CONTENTS

Introduction 1

Study Area 1

Methods 4

Trap Setup 4

Trap Operation 4

Biological and Physical Sampling 5

Trap Efficiency 5

Fish Mortality 6

Results 6

Recommendations 6

Appendix A- Trap Operation and Sampling Procedures

Appendix B- Genetic Sampling Procedure

Appendix C- Trap Data

INTRODUCTION

In the spring of 1999, the Community Futures Development Corporation of Nadina (CFDCN) was contracted by Barry Finnegan, Northern Coho Stock Assessment Biologist of Fisheries and Oceans Canada, to operate a Rotary Screw Trap (RST) on Buck Creek in the Upper Bulkley Watershed. The objectives of the program were to:

- Identify a site suitable for the operation of an 8-foot diameter RST in Upper Buck Creek (Buck Flats area),
- Install and operate the trap in said location,
- Evaluate the use of the trap at the location,
- Evaluate coho fry planting impacts to determine if planted fry or resident fish are being displaced,
- Biological sampling of the catch,
- Data entry and summary report preparation.

The program was originally designed as a two-phase program. Spring (June 1-30) sampling was intended to enumerate and sample salmonid downstream migrants. Summer (August 1-31) sampling was intended to monitor the effects of a coho fry outplanting on both the movements of resident fish and the fry themselves (ie- were they remaining in the Buck Flats area or moving elsewhere after being released). Complications in the timing of the fry release led to the summer portion of the program being dropped.

STUDY AREA

Buck Creek is the major affluent of the Upper Bulkley River, with a drainage area of 580 km^2 (approximately 25% of watershed area) (NHC, 1997). Buck Creek has been cited as one of the most significant "nursery" streams for juvenile salmonids n the watershed (BCCF, 1997). It supports

populations of anadromous *Oncorhynchus tschawytsa (*chinook salmon), *O.kisutch* (coho salmon), *Lampetra tridenta* (pacific lamprey), and *O.mykiss (*steelhead) (BCCF, 1998). Resident *Salvelinus confluentus (*bull trout), *O.mykiss (*rainbow trout), *Prosopium williamsonii (*rocky mountain whitefish), *Rhinichthys cataractae* (longnose dace), *Catastomous macrocheilus* (coarsescale suckers), *C. commersoni* (white suckers), and *C. catastomous* (longnose suckers) are also present (BCCF, 1998). Historic records of *O. gorbuscha* (pink salmon) and S. *malma* (Dolly Varden) are also found in the literature (BCCF, 1997). *L ayresi* (river lamprey) were also identified as present during the sampling period of this study.

The rotary screw trap (RST) location is indicated in figure 1. The physical location is a deep glide/pool complex beneath and downstream of the first bridge crossing on Buck Flats Road. The bankfull width at the site is 7-8 metres. The georeference for the site is UTM 9.653200.6019400, and the road distance to the bridge is approximately 9 km from Highway 16. The trap potentially sampled fish from up to 26 km of juvenile salmonid rearing habitat upstream to the impassable Buck Falls (Klo FSR road crossing). Photos of the site are shown in plates 1 and 2..

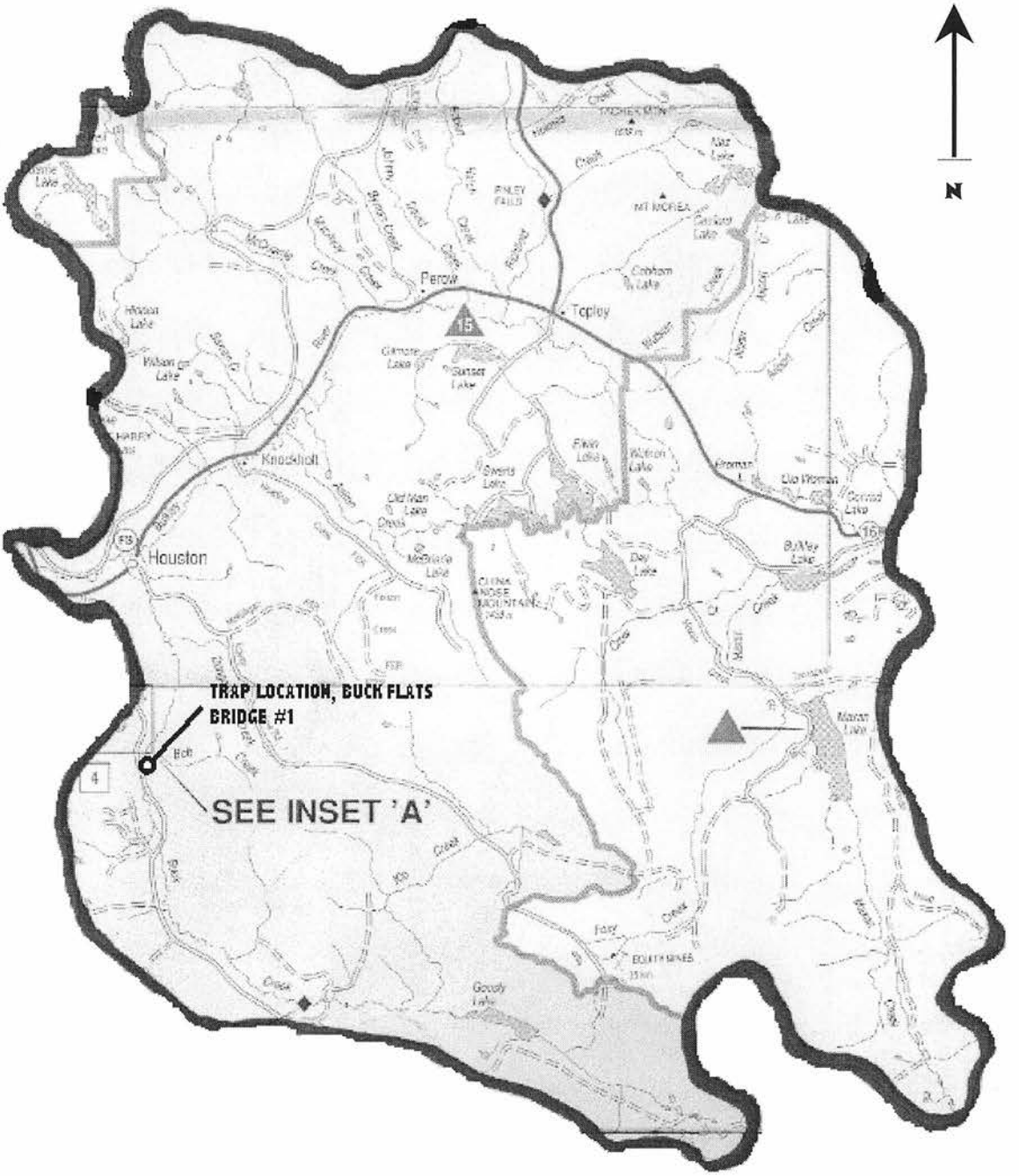


Figure 1: Upper Bulkley watershed with trap location on Buck Creek indicated. Map not to scale.

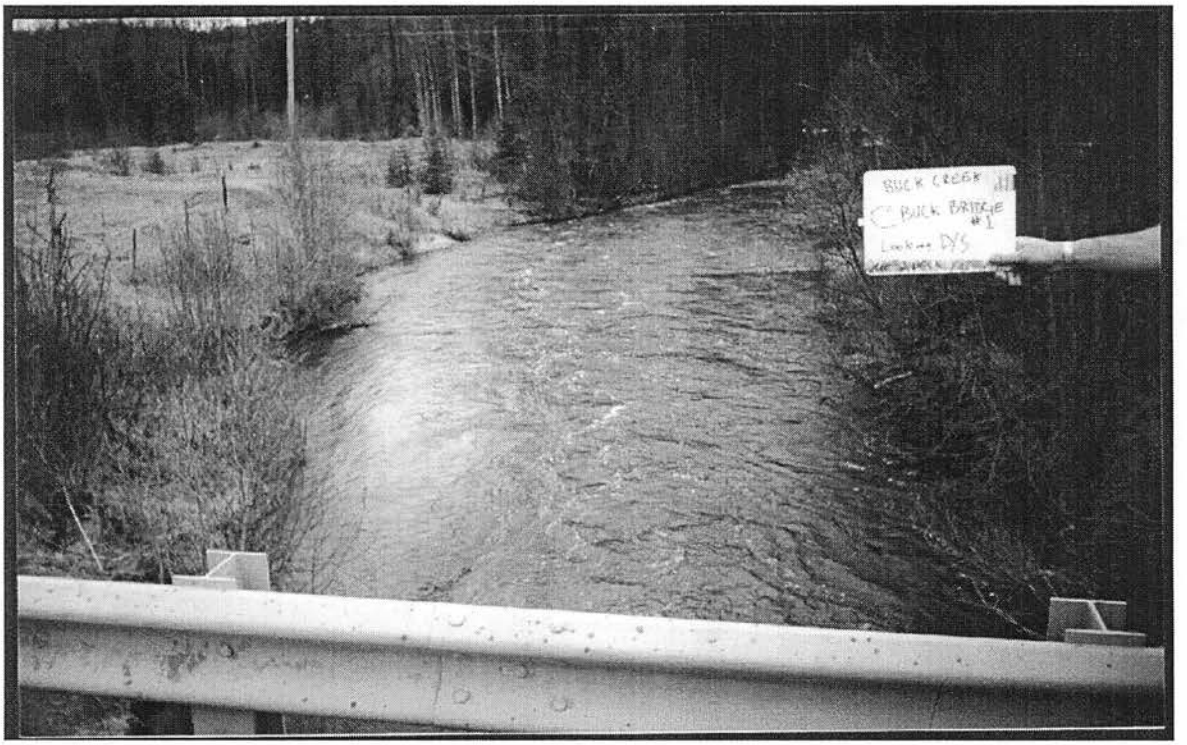


Plate 1: Trap site at Buck Flats bridge #1 looking downstream. Note long glide below bridge.

Plate 2: Trap site at Buck Flats bridge #1 looking approximately upstream.

METHODS

Trap Setup

One 8-foot diameter screw trap and all hardware and anchors was supplied by the Department of Fisheries and Oceans for this project in late May. Cable (3/8" galvanized) and slings were used to secure and suspend the trap instream from bridge pilings on either side of the creek. The configuration consisted of a cable crossing the stream and attached around the pilings with slings and cable clamps, a single cable leash running on a pulley and shackle attached to the perpendicular cable, and a v-shaped cable attached to either side of the RST and the leash with cable clamps. The trap was assembled on shore at the site and then set into the current. It was positioned in the current by means of lanyards attached to either side of the RST which were employed from shore.

Methods used in trap operation and sampling are found in greater detail in appendix A, and also define codes used in data collection for use in interpreting results

Trap Operation

The RST was operated (the screw was down) from dusk (approximately 8 pm) until dawn (approximately 8:30 am) from Monday to Friday during the month of June. The trap was cleaned of small debris regularly using brooms and wire brushes, and all debris was removed from the trap at the beginning and end of fishing each day. During higher flow periods, the trap was also checked once during the night regularly to ensure that no large debris was in danger of damaging the trap, that the trap was operating properly, and that flow conditions were not too severe for trap operation. Approximately midway through June, the trap was vandalized and rendered inoperable for two days. Following this, one person was on hand at the trap site overnights to ensure that more vandalism did not occur. The trap was also checked once each weekend during the day to ensure that it was secure and operable. Two staff were present during all sampling and operational checks for safety and to carry out the tasks as outlined above.

Biological and Physical Sampling

All fish captured in the RST were anaesthetized with MS222 prior to measurement and scale sampling.

All biological data was recorded using standard RIC fish collection forms on waterproof fieldbook paper. Lengths were recorded in millimetres as fork length. Weights were taken in grams with an accuracy to the nearest 0.1 grams using a level and tared digital scale. Scales were collected and recorded as per DFO standards for biological sampling. Char were to be identified based on the methods of Haas and McPhail (1991) where practical. All fish species were identified and enumerated using the standard RIC field guide for fish identification and other resources where applicable. Marked fish from other studies and programs were recorded based on species and mark type/source. One hundred genetic samples were taken from rainbow/steelhead trout throughout the run as per MELP guidelines found in appendix B.

Water temperature was recorded using a pocket alcohol thermometer. Water level was recorded in metres to the nearest centimetres at the time of sampling, using the existing staff gauge. Weather and trap operation details were also recorded. All environmental information and operational details were recorded on a trap operation logsheet.

Trap Efficiency

To evaluate the efficiency of capture of the RST, a subsample of chinook smolts was caudal clipped and released approximately 300 m upstream on June 17. This was unfortunately the only day when a sufficiently large sample of fish was available. Subsequently, mark-recaptures were not replicated and therefore the results are considered relative at best. The subsample consisted of 89 fish from one set. The marks and recaptures were enumerated and trap efficiency was calculated as *capture efficiency= R/M * 100,* and assumes all fish moved downstream again during the sampling period following marking and release.

Fish Mortality

All mortalities were enumerated during the operation of the RST, and are reported in the results section of this report as part of evaluating the use of this trap at this location.

RESULTS

The results from the trap operation log, and biological sampling are found in hardcopy and digital format in appendix C. Catch was classified by species, maturity (immature (juveniles), maturing (smolts), mature (adults)), and origin (hatchery or wild). Whitefish and non-salmonids were grouped together as "other fish" as they are not target species for management agencies. Pacific and river lamprey were not enumerated although it is of note that both species of adults were identified as present during the sampling period. The results of the June 17 mark-recapture for trap efficiency are presented in table 1. A breakdown of total catch composition by species/origin is presented in figure 2. Catch results as catch per unit effort (CPUE) over the sampling period are presented in figure 3 by species/origin. Total CPUE for the trap by haul is shown in figure 4. A graphical summary of environmental data (temperature/water level) is found in figure 5.

RECOMMENDATIONS

Based on a single season's evaluation of the RST, with average to low water conditions and snowpack, the following recommendations are presented:

- **Smaller diameter screw:** The operation of an 8-foot RST was challenging given the discharge conditions. The trap had to be operated in a slightly to moderately winched-up position several days throughout the sampling period to ensure that it was not hitting bottom. This caused the

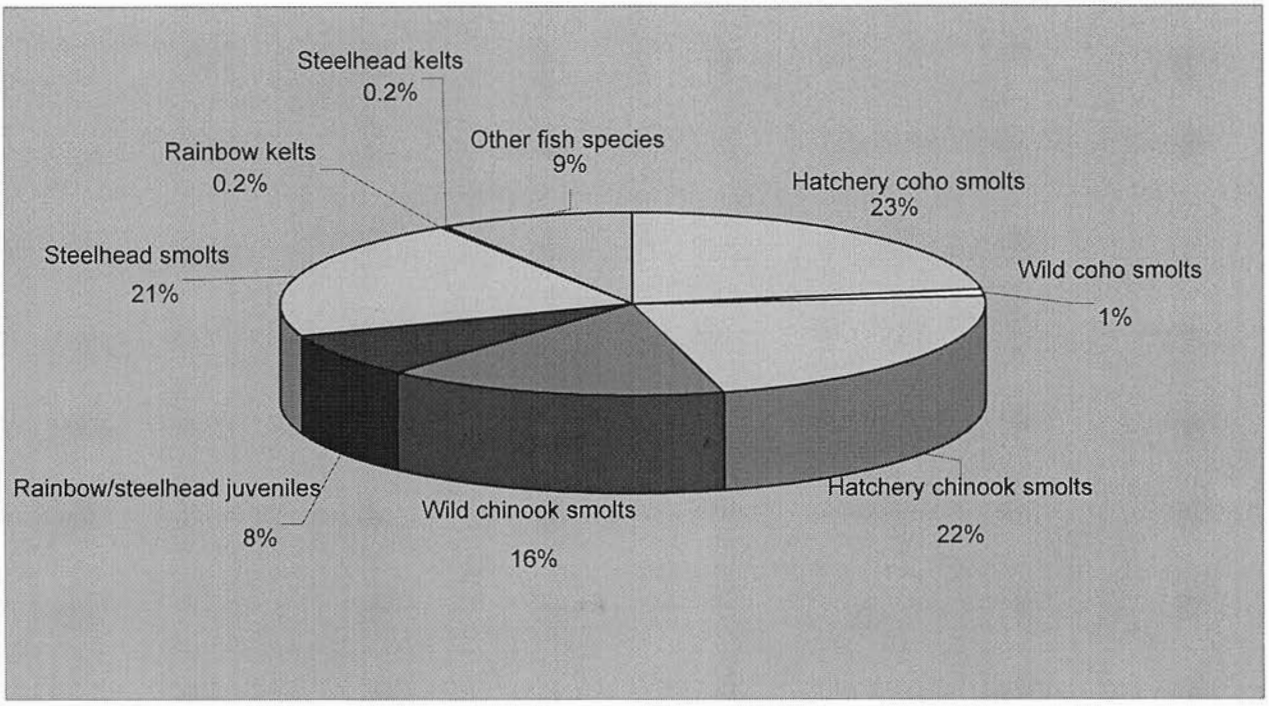


Figure 2: Proportion of total catch (n=532) by species and origin (wild or hatchery). All non-salmon species are wild.

Table 1: Results of mark-recapture test to assess relative trap efficiency (no replicates).

Marks (#)	Recaptures (#)	Estimated Trap Efficiency (%)
89	26	29.2

Table 2: Records and comments on fish mortality

Date	Species	Mortalities (#)	Comments
June 16/99	CH (hatchery)	4	Steelhead kelt in trap.
June 17/99	CH (hatchery)	17	Mortalities resulted during holding for mark-recapture.

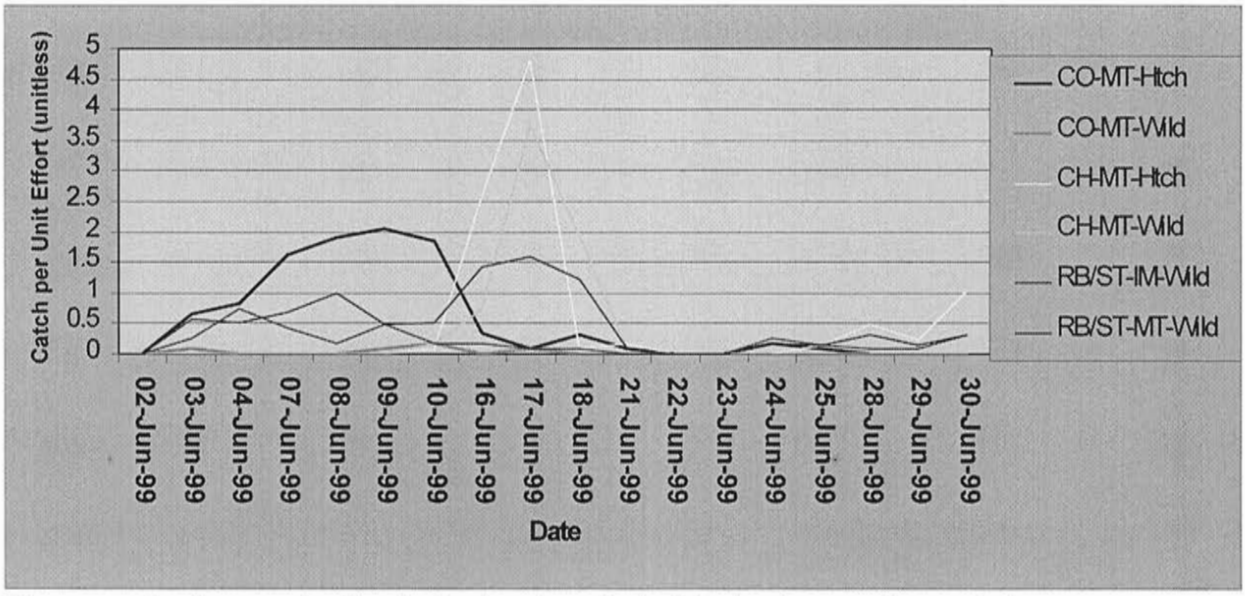


Figure 3: Catch per unit effort by haul and species/origin for the sampling period.

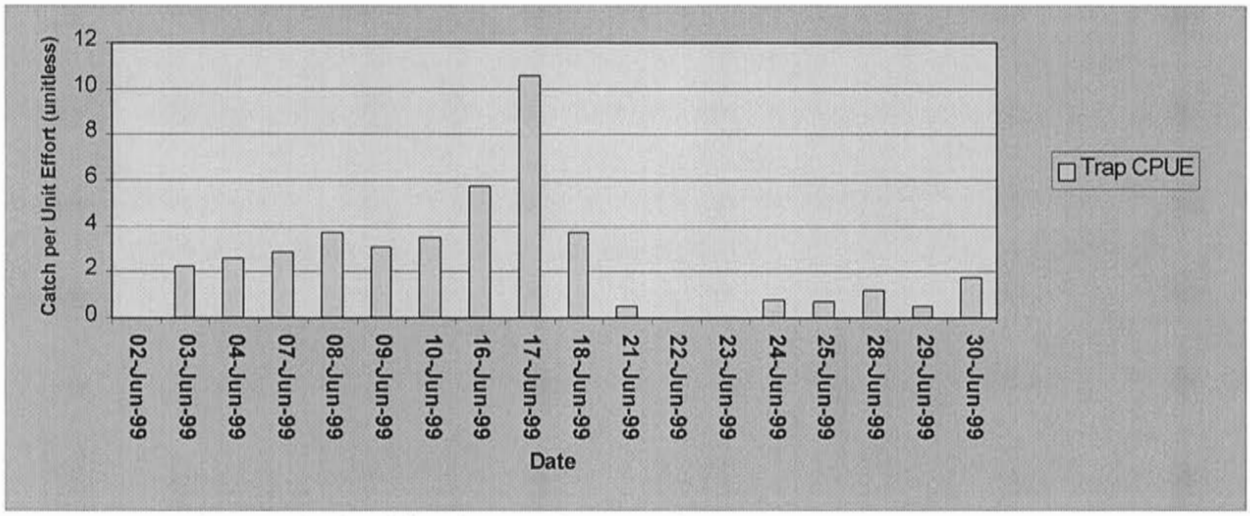


Figure 4: Total CPUE by haul for the sampling period.

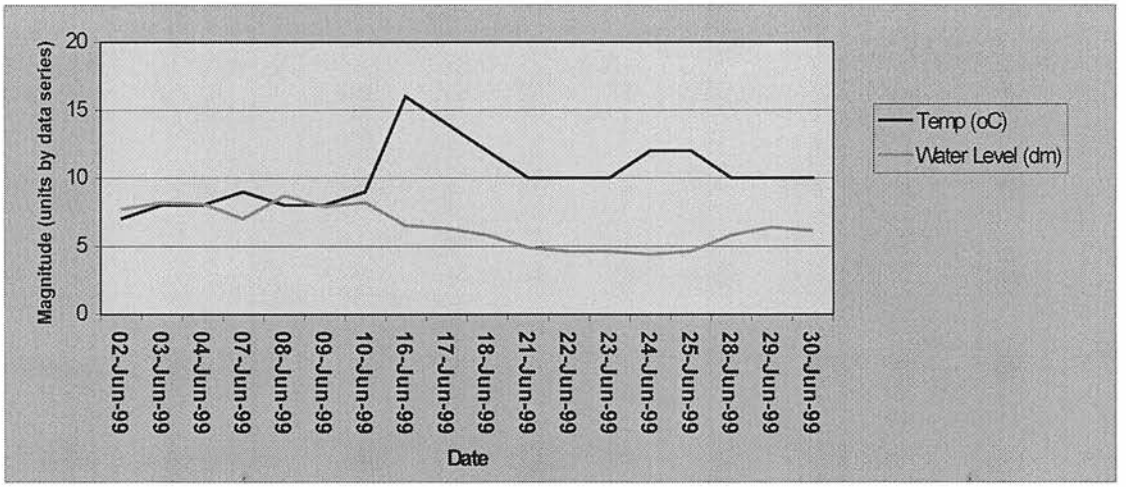


Figure 5: Summary of environmental measurements (water level and water temperature) throughout the sampling period.

trap to be both noisier and less efficient, both likely leading to smaller catches and potentially to bias in the catch. It also left less flexibility in positioning the trap laterally at the site. Replacing an 8-foot diameter screw with a 5-6-foot screw would improve trap operation and results overall.

- **Earlier Start:** Earlier peaks in the hydrograph (lower elevation snowmelt) may have triggered earlier smolt migrations in May. Frequently the spring freshet can be bimodal, with distinct peaks separated by lower water levels for lower and higher elevation snowmelt. This depends on the warming trend in the spring, but to monitor coho migrants accurately (whose movements appeared to correlate more with water level than water temperature in this study, as opposed to chinook smolts) an earlier start to the sampling program is recommended.

- **Holding for Trap-Efficiency Tests:** Some mortality occurred during the short holding period following marking and prior to release for testing trap efficiency. This is despite the fact that fish were held in the same water temperatures as the creek with good aeration (fish were held in the open trap box in a large holding bucket with mesh covered side openings to allow water flow to pass through). It is recommended that future projects make use of alternate holding facilities. The DFO coho volitional release pond in the vicinity may be able to be adapted for

holding, or aeration equipment and/or ice and/or cover elements might be added to a prepared holding area adjacent to the trap.

- **On-site security:** Due to the vandalism of the trap, it is recommended that in future years an individual be hired to be at the site at night 7 days a week. They should be equipped to communicate with technical staff (cellular/radio phone) should there be any problems with the trap aside from vandalism as well, and be rented temporary accommodations (ie- camper/RV).

REFERENCES

BC Conservation Foundation (BCCF). 1997. Mid-Bulkley Overview Fish and Fish Habitat Assessment for Watershed Restoration. Watershed Restoration Program, BC Environment. Smithers, BC. 208 pp + appendices and maps

BC Conservation Foundation (BCCF). 1998. Mid-Bulkley Detailed Fish Habitat/Channel/Riparian Assessment for Watershed Restoration. Watershed Restoration Program, BC Environment. Smithers, BC. 251 pp + appendices

Beere, M.C. 1993. An Evaluation of the Use of a Rotary Screw Fish Trap for Assessing Steelhead Smolt Emigrations in the Little Bulkley River, 1993. Ministry of Environment, Recreational Fisheries Branch. Smithers, BC. Skeena Fisheries Report # SK 86. 10 pp + appendices.

Northwest Hydraulic Consultants (NHC). 1997. Assessment of 1997 Flood and Dike System, Bulkley River at Houston, BC. District of Houston. 20 pp+ attachments.

APPENDIX A

Trap Operation and Sampling Procedures

PROCEDURES FOR BUCK RST PROJECT

GENERAL TRAP OPERATION

A daily log is kept of trap settings, temperature, effort, river stage, and other comments using the RST Operation Log Form. Only one row of the log is filled out for each haul.

- Haul: A sequential number (starting at one for the first haul on the first day) and changing for each overnight period the trap fishes. Use this same haul number for each fish collection form to link the trap log information to the fish data.
- Record water temperature and creek stage (in metres) at the end of every haul/set
- Net type: always "FL" for floating net
- Depth: the depth (in metres) of the water column the trap was set to fish
- Setting: the zone in which the majority of the trap was set in the water column, Record "B" for bottom, "MD" for mid-water, and "SU" for surface.
- Habitat: Record "P" for pelagic (in this case applying to the thalweg or middle of the creek), "L" for littoral (in this case applying to the margin of the wetted creek)
- Time in/out should be in 24 hour time (hour/minute)
- Make sure you give the data form a sequential # as well (under card #) and fill in the "of" section when you turn in all of the data.
- Comments: Make comments on the weather, debris loading, increasing/decreasing water levels and problems caused by this (such as a sudden peak related to a blown beaver dam), any circumstances affecting trap operation, days when mark/recapture is done to measure trap efficiency, days when fish are kept to check for post-capture mortality, etc.

THE TRAP WILL NOT FISH WHEN THE ADJACENT STAFF GAUGE READING EXCEEDS ____ METRES.

FISH COLLECTION

The live trap will be emptied every morning at approximately 8:30 am. Large dip nets and 5-gallon buckets with lids will be provided to transport the fish to shore. A level, wind-sheltered box will be constructed to weigh fish and to weigh out accurate amounts of anaesthetic. A 15 cm measuring board is also provided. Fish will be anaesthetised using MS222, and if this runs out, bromo-seltzer is also available. Aquarium dip nets will be used to sample fish from the buckets. A hand counter can be used to enumerate individuals from different species of fish.

A recovery bucket will be used to revive fish from anaesthetic and hold fish for other purposes prior to release.

A fish collection form, or forms (depending on the # of fish caught), will be filled out for each haul. Do not enter comments until the last card for that haul is filled out. Comments should include the roll and picture # of any photos taken and a description of the photo. If comments exceed the space provided on the form, attach a blank field note page and continue comments. Enter the card # and the total # of cards filled out for that haul, rather than for all of the fish collection forms filled out over the period of the fieldwork.

- Species: Identify all species, not just salmonids. Ensure you have correct identification between dace and suckers, and amongst different species of suckers. Use the standard species codes (CO=coho, CH=chinook, RB/ST=rainbow/steelhead, CT= cutthroat, BT= bull trout, DV= Dolly Varden, DV/BT= Dolly Varden/bull trout (when too small to identify), ST=known steelhead smolts, MW= mountain whitefish, PL=pacific lamprey, LNC= longnose dace, LSU= longnose sucker, WSU= white sucker, CSU= coarsescale sucker, etc.)

- Stage: The life stage of the fish. IM=immature (juvenile), MT=maturing (ie-smolts), M= mature (adults), SP= spawning, ST=spent (you likely won't need the last three categories).
- Length is to be recorded in millimetres for all fish captured.
- Weight is to be recorded to the nearest 0.1 grams for up to 100 fish taken per day.
- Age sample structure: always "SC" for scale. Take scale samples (3 or more scales at the usual location just above the lateral line and behind the dorsal fin) for all coho and a subsample of 100 chinook (both fry and smolts)
- Age sample #: use the scale book # and sample #
- Voucher #: Assign a unique sequential number (1+) to the voucher specimen. Preserve all specimens in whirlpacks in isopropyl alcohol. Voucher single individuals only when necessary. Voucher a small # of morts of different species, indicating "Buck Creek, reach 4", the species, and the date on the whirlpack. These are to be used for developing a fish collection at the Bulkley-Morice Watershed Library (Nadina Community Futures).
- Genetic sample structure: Genetic samples are to be taken for MELP from 50-100 rainbow/steelhead. The genetic structure will be fin rays, taken as a caudal clip. Use the supplied vials and record the vial codes for the genetic sample #. Record the code "FR" for fin rays.
- Genetic sample #: the number code from the genetic sample vial
- Marks: Indicate the locations of any marks/clips from mark/recapture and stock assessment programs. Record the clip location using the following codes: "A"=adipose, "UC"=upper caudal, "LC"=lower caudal, "C"=both caudal lobes clipped, "D"=dorsal fin, "LP"=left pectoral, "RP"=right pectoral, "AN"=anal.
- Mark Source: Indicate the source of the mark using the following codes: "TCH"= Toboggan Creek Hatchery, "OW"= DFO overwintering study, "RST"= mark/recapture from this project to measure trap efficiency, "U"=unknown.

MARK-RECAPTURE FOR TRAP EFFICIENCY

On a day when more than 80 salmonids (preferably smolts) are caught in the trap, a mark-recapture will be done. The subsample of fish will be clipped with an appropriate mark (one not found from other programs, and which is a dorsal clip (anal, caudal or dorsal fins, ie-not any ventral fins because these are known to cause higher mortalities)). The clipped fish will then be transported upstream to a predetermined point and released. Marked fish will be noted as outlined above and enumerated, and trap efficiency will be gauged based on a % recapture. This activity will be noted in the trap operation log.

APPENDIX B

Genetic Sampling Procedure

RBT/STHO.

Sampling Guidelines for DNA
bull trout/Dolly Varden, rainbow trout and cutthroat trout

Susan Pollard, Fish Geneticist
Fisheries Branch, Ministry of Environment, Lands and Parks
780 Blanshard St., Victoria, BC V8V 1X4
phone: (250)-356-7005
fax: (250)-387-9750
email: spollard@fwhdept.env.gov.bc.ca

1. Ensure that fish has not previously been sampled.

2. Record data for each DNA sample on the standard FISH COLECTION FORM.

3. For each DNA and age sample; record species, Genetic Sample #, fork length, weight and sex if possible. Ensure number on vial and scale envelope corresponds with GENETIC SAMPLE #.

> CONSERVATION NOTE: This is a non-lethal sampling technique, requiring very little tissue for analyses. Please ensure that each fish is kept immersed in water as much as possible and that only the minimum required tissue is removed.
> DO NOT SAMPLE FISH LESS THAN 10 CM IN LENGTH.

4. Procedure for DNA sampling for **bull trout/Dolly Varden, rainbow trout and cutthroat trout.**

   a) Remove 5 mm^2 of tissue from the pelvic fin. Place in a vial and fill with 95% ethanol to ensure complete preservation. ↳ Caudal Fin, ok for juveniles.

   b) Insert waterproof label with species, location and vial # inside. Write all information in pencil as pen/marker is soluble in ethanol.

   c) Place cap tightly on vial. Use an adhesive label on outside of vial and include species, location and vial # again. Double labelling will ensure samples can be identified later.

5. Procedure for sampling scales to age ~~cutthroat~~ STHO trout (Refer *to Fish and Fish Habitat Inventory: Standards and Procedures* manual). ↳ prefer them mounted in scale book.

   a) Clear away dirt and excess mucilage from area to be sampled.

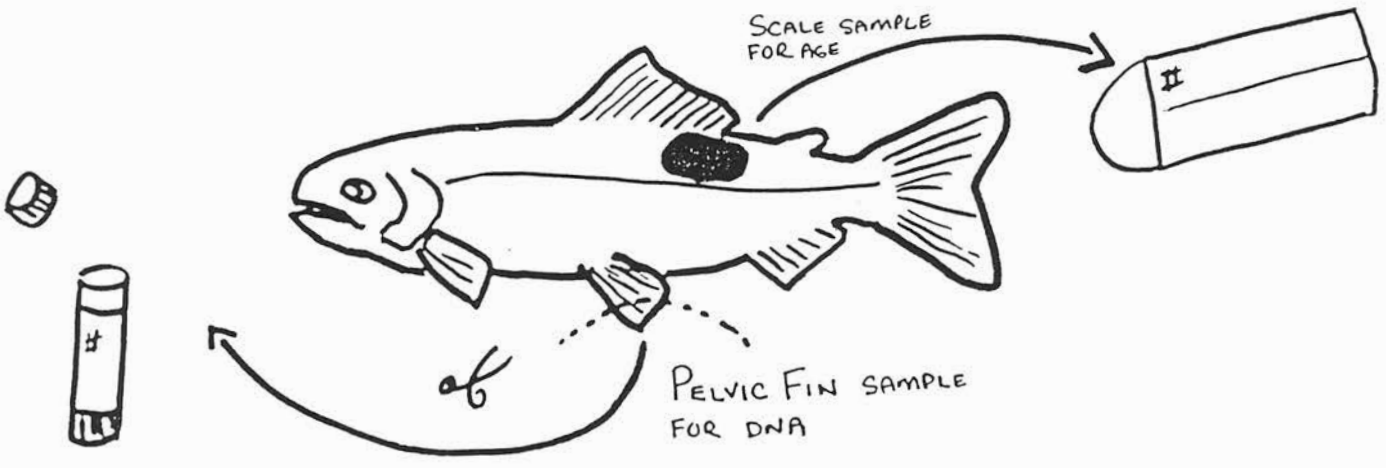
   b) Gently scrape against the grain of scales with a clean blade of a scalpel or knife. Splint forceps may be used to sample large scales. At least 5 scales should be removed per fish.

   c) Scrape blade on the inside of scale envelope provided.

   d) Ensure envelope is labelled with number corresponding to vial # and FISH COLLECTION FORM.

6. Labelling is important. For each river system/lake use a separate storage bag to store samples. Label bag with location, reference to data sheet, and date. NOTE: PLEASE PHOTOCOPY AND INCLUDE FISH COLLECTION FORM IN STORAGE BAGS WITH SAMPLES.

7. Rinse off equipment between samples to avoid contamination. Store vials and scale envelopes in zip-loc bags in freezer until shipment.



APPENDIX C

Trap Data

Table 3: Trap operation log.

Gazetted Name		Buck Creek	Watershed Code	460-636000-00000-0000-0000-000-000-000-000-000-000	
Reach	4	Site Location	9.653200.6019400	Description	9 km Buck Flats Road Bridge 1
Haul	**Date Out**	**Effort (hrs)**	**Temp (°C)**	**Water Level (m)**	**Comments**
1	06/02/99	12.25	7	0.77	Water too shallow, drum hitting bottom, no fish, water level dropping
2	06/03/99	12.2	8	0.82	Working well, water up slightly
3	06/04/99	12	8	0.81	Debris load light, clouds and rain
4	06/07/99	11.75	9	0.7	Debris load light, clouds and rain
5	06/08/99	12	8	0.87	Debris load light, clouds and rain
6	06/09/99	12.3	8	0.79	Debris load light, clouds and rain
7	06/10/99	12	9	0.82	Debris load light, clouds and rain
8	06/11/99	12	10	0.74	Trap vandalized, no fish, debris load light, rain
9	06/16/99	12	16	0.65	4 CH morts (first morts), debris load light, sun/cloud
10	06/17/99	12.5	14	0.63	Debris load light, sun/cloud
11	06/18/99	13	12	0.58	4 CH morts, moderate debris load, rain
12	06/21/99	12.25	10	0.49	Trap raised slightly due to water levels, light debris load, clouds
13	06/22/99	12.1	10	0.46	Trap raised slightly due to water levels, light debris load, rain
14	06/23/99	11.9	10	0.46	Trap raised slightly due to water levels, light debris load, clouds
15	06/24/99	12	12	0.44	Trap raised slightly due to water levels, light debris load, clouds
16	06/25/99	13	12	0.46	Trap raised slightly due to water levels, light debris load, clouds
17	06/28/99	12.6	10	0.58	Trap dropped to full depth, debris load light, rain
18	06/29/99	13	10	0.64	Trap dropped to full depth, debris load light, rain
19	06/30/99	12.4	10	0.61	Trap dropped to full depth, debris load moderate, rain

Table 4: Biological sampling data

Gazetted Name		Buck Creek	Watershed Code	460-636000-00000-0000-0000-000-000-000-000-000-000							
Reach	4	Site Location	9.653200.6019400	Description	9 km Buck Flats Road Bridge 1						
Haul	Species	Lifestage	Length (mm)	Weight (g)	Age Sample Structure	Age Sample #	Voucher #	Genetic Sample Structure	Genetic Sample #	Marks	Mark Source
1	NONE										
2	CO	MT	110	12.6						A	TCH
2	CO	MT	120	15.5						A	TCH
2	CO	MT	125	16.9						A	TCH
2	CO	MT	121	15.3						A	TCH
2	CO	MT	118	13.9						A	TCH
2	CO	MT	125	16.8						A	TCH
2	CO	MT	114	13.9	SC	51380-01				LV	OW
2	CO	MT	130	20.9						A	TCH
2	CO	MT	112	12.2						A	TCH
2	LNC	M	90	9							
2	LNC	M	95	10.2							
2	LNC	M	105	13.4							
2	LNC	M	100	14							
2	LNC	M	82	6.9							
2	LNC	M	85	7.6							
2	LNC	M	70	2.8							
2	LNC	IM	50	1							
2	RB/ST	IM	78	6.7	SC	51379-01		FR	99-01		
2	RB/ST	IM	115	16.9	SC	51379-07		FR	99-07		
2	RB/ST	IM	100	9.8	SC	51379-09		FR	99-09		
2	RB/ST	MT	200	67.9	SC	51379-02		FR	99-02		
2	RB/ST	MT	162	38.8	SC	51379-03		FR	99-03		
2	RB/ST	MT	145	26.7	SC	51379-04		FR	99-04		

2	RB/ST	MT	140	26.7	SC	51379-05		FR	99-05		
2	RB/ST	MT	155	34.3	SC	51379-06		FR	99-06		
2	RB/ST	MT	154	40.9	SC	51379-08		FR	99-08		
2	RB/ST	MT	167	41.2	SC	51379-10		FR	99-10		
3	CO	MT	123	16.4						A	TCH
3	CO	MT	122	17.2						A	TCH
3	CO	MT	120	16.2						A	TCH
3	CO	MT	120	17.7						A	TCH
3	CO	MT	120	16						A	TCH
3	CO	MT	114	11.4						A	TCH
3	CO	MT	116	15.1						A	TCH
3	CO	MT	122	17.6						A	TCH
3	CO	MT	121	16.5						A	TCH
3	CO	MT	121	15.8						A	TCH
3	LNC	IM	68	4.4							
3	LNC	IM	6.8	4.4							
3	LNC	IM	6.8	2.5							
3	LNC	MT	95	9.9							
3	MWH	IM	142	25.8							
3	RB/ST	IM	110	15	SC	51379-11		FR	99-11		
3	RB/ST	IM	135	25.6	SC	51379-12		FR	99-12		
3	RB/ST	IM	131	22.6							
3	RB/ST	IM	116	16.6							
3	RB/ST	IM	118	14							
3	RB/ST	IM	80	5							
3	RB/ST	IM	112	14	SC	51379-18		FR	99-18		
3	RB/ST	IM	120	19.2	SC	51379-19		FR	99-19		
3	RB/ST	IM	113	15.5	SC	51379-20		FR	99-20		
3	RB/ST	MT	150	25	SC	51379-13		FR	99-13		
3	RB/ST	MT	142	30.5							
3	RB/ST	MT	155	40	SC	51379-14		FR	99-14		
3	RB/ST	MT	142	30	SC	51379-15		FR	99-15		
3	RB/ST	MT	140	26.2	SC	51379-16		FR	99-16		
3	RB/ST	MT	146	30.1	SC	51379-17		FR	99-17		

3	SU	MT	145	29.6							
4	CO	MT	134	21.5						A	TCH
4	CO	MT	126	19						A	TCH
4	CO	MT	125	17.9						A	TCH
4	CO	MT	116	14.7						A	TCH
4	CO	MT	120	15.4						A	TCH
4	CO	MT	110	13.6						A	TCH
4	CO	MT	120	15.4						A	TCH
4	CO	MT	128	20.2						A	TCH
4	CO	MT	115	13.2						A	TCH
4	CO	MT	120	14.7						A	TCH
4	CO	MT	120	15.5						A	TCH
4	CO	MT	111	14						A	TCH
4	CO	MT	121	16.4						A	TCH
4	CO	MT	112	13						A	TCH
4	CO	MT	110	15						A	TCH
4	CO	MT	115	15.3						A	TCH
4	CO	MT	115	15.3						A	TCH
4	CO	MT	118	11.8						A	TCH
4	CO	MT	110	11.5						A	TCH
4	LNC	MT	96	10.7							
4	LNC	MT	121	18.3							
4	RB/ST	IM	70	3.4							
4	RB/ST	IM	100	10.8							
4	RB/ST	IM	120	16.8	SC	51379-26		FR	99-26		
4	RB/ST	IM	110	15.7	SC	51379-27		FR	99-27		
4	RB/ST	IM	102	11.6							
4	RB/ST	MT	160	40	SC	51379-21		FR	99-21		
4	RB/ST	MT	180	52.3	SC	51379-22		FR	99-22		
4	RB/ST	MT	154	42.7	SC	51379-23		FR	99-23		
4	RB/ST	MT	162	41.6	SC	51379-24		FR	99-24		
4	RB/ST	MT	140	27	SC	51379-25		FR	99-25		
4	RB/ST	MT	136	26.6	SC	51379-28		FR	99-28		
4	RB/ST	MT	118	17.7	SC	51379-29		FR	99-29		

4	RB/ST	MT	110	14.7	SC	51379-30		FR	99-30		
5	CO	MT	124	18.3						A	TCH
5	CO	MT	111	13.3						A	TCH
5	CO	MT	122	15.9						A	TCH
5	CO	MT	125	20.2						A	TCH
5	CO	MT	118	16.4						A	TCH
5	CO	MT	130	19						A	TCH
5	CO	MT	122	18.1						A	TCH
5	CO	MT	121	16.1						A	TCH
5	CO	MT	108	12.3						A	TCH
5	CO	MT	119	15.7						A	TCH
5	CO	MT	116	13.7						A	TCH
5	CO	MT	125	20.2						A	TCH
5	CO	MT	115	14.8						A	TCH
5	CO	MT	110	12.9						A	TCH
5	CO	MT	115	13.5						A	TCH
5	CO	MT	117	12.1						A	TCH
5	CO	MT	124	18.7						A	TCH
5	CO	MT	112	12.4						A	TCH
5	CO	MT	120	16.3						A	TCH
5	CO	MT	126	21.7						A	TCH
5	CO	MT	116	14.8						A	TCH
5	CO	MT	122	15.9						A	TCH
5	CO	MT	123	16.6						A	TCH
5	LNC	IM	77	5.6							
5	LNC	IM	72	4.7							
5	LNC	MT	100	11.7							
5	LNC	MT	85	6.7							
5	LNC	MT	95	10.1							
5	LNC	MT	117	13.7						A	TCH
5	RB/ST	IM	110	13.6							
5	RB/ST	IM	112	14.6							
5	RB/ST	MT	165	46.4	SC	51379-31		FR	99-31		
5	RB/ST	MT	150	35.7	SC	51379-32		FR	99-32		

5	RB/ST	MT	156	39.6	SC	51379-33		FR	99-33		
5	RB/ST	MT	170	47.6	SC	51379-34		FR	99-34		
5	RB/ST	MT	160	43.7	SC	51379-35		FR	99-35		
5	RB/ST	MT	162	40.8	SC	51379-36		FR	99-36		
5	RB/ST	MT	170	49	SC	51379-37		FR	99-37		
5	RB/ST	MT	160	42.3	SC	51379-38		FR	99-38		
5	RB/ST	MT	150	33.8	SC	51379-39		FR	99-39		
5	RB/ST	MT	134	26.3	SC	51379-40		FR	99-40		
5	RB/ST	MT	155	31.7							
5	RB/ST	MT	145	31.9							
5	WH	MT	145	30							
6	CO	MT	112	14.7						A	TCH
6	CO	MT	118	14.7						A	TCH
6	CO	MT	111	12						A	TCH
6	CO	MT	118	15.2						A	TCH
6	CO	MT	115	14.7						A	TCH
6	CO	MT	120	16.7						A	TCH
6	CO	MT	121	15.2						A	TCH
6	CO	MT	120	16.2						A	TCH
6	CO	MT	118	14.8						A	TCH
6	CO	MT	126	19.4						A	TCH
6	CO	MT	120	16.5						A	TCH
6	CO	MT	121	18.1						A	TCH
6	CO	MT	117	14.2						A	TCH
6	CO	MT	120	15						A	TCH
6	CO	MT	112	12.7						A	TCH
6	CO	MT	115	10.7						A	TCH
6	CO	MT	110	11.7						A	TCH
6	CO	MT	114	14.2	SC	51380-02					
6	CO	MT	120	15.7						A	TCH
6	CO	MT	120	16.2						A	TCH
6	CO	MT	120	15.3						A	TCH
6	CO	MT	120	14.9						A	TCH
6	CO	MT	126	19						A	TCH

6	CO	MT	120	15.9						A	TCH
6	CO	MT	132	20.9						A	TCH
6	CO	MT	115	12.9						A	TCH
6	LNC	MT	81	6.3							
6	RB/ST	IM	118	15.7	SC	51379-44		FR	99-44		
6	RB/ST	IM	110	14.8	SC	51379-46		FR	99-46		
6	RB/ST	IM	128	21.8	SC	51379-47		FR	99-47		
6	RB/ST	IM	121	18.7	SC	51379-49		FR	99-49		
6	RB/ST	IM	121	19.6	SC	51379-50		FR	99-50		
6	RB/ST	IM	121	17.4							
6	RB/ST	MT	160	43	SC	51379-41		FR	99-41		
6	RB/ST	MT	170	50.3	SC	51379-42		FR	99-42		
6	RB/ST	MT	151	34	SC	51379-43		FR	99-43		
6	RB/ST	MT	180	57.1	SC	51379-45		FR	99-45		
6	RB/ST	MT	135	23.7	SC	51379-48		FR	99-48		
6	RB/ST	MT	157	39.3							
7	C	MT	123	15.7						A	TCH
7	CH	MT	120	17.4	SC	51378-01					
7	CH	MT	116	16.2	SC	51378-02					
7	CO	MT	126	18.7	SC	51380-03					
7	CO	MT	118	15.1	SC	51380-04					
7	CO	MT	116	13.3						A	TCH
7	CO	MT	115	15.4						A	TCH
7	CO	MT	116	14						A	TCH
7	CO	MT	110	11.9						A	TCH
7	CO	MT	116	15.3						A	TCH
7	CO	MT	125	19.2						A	TCH
7	CO	MT	116	14.3						A	TCH
7	CO	MT	114	13.2						A	TCH
7	CO	MT	118	14.9						A	TCH
7	CO	MT	125	17.5						A	TCH
7	CO	MT	115	13.5						A	TCH
7	CO	MT	118	15.2						A	TCH
7	CO	MT	120	16						A	TCH

7	CO	MT	122	18.1						A	TCH
7	CO	MT	125	19						A	TCH
7	CO	MT	125	19.2						A	TCH
7	CO	MT	121	17						A	TCH
7	CO	MT	125	18.7						A	TCH
7	CO	MT	129	20.7						A	TCH
7	CO	MT	121	15.7						A	TCH
7	CO	MT	113	13.2						A	TCH
7	CO	MT	114	14.1						A	TCH
7	CO	MT	112	12.8						A	TCH
7	LNC	MT	80	6.5							
7	LNC	MT	90	7.9							
7	RB/ST	IM	109	14.4							
7	RB/ST	IM	125	20.7							
7	RB/ST	IM	120	16.3							
7	RB/ST	IM	118	13.7							
7	RB/ST	IM	124	22.8							
7	RB/ST	IM	105	12.4							
7	RB/ST	MT	141	29.2							
7	RB/ST	MT	142	28.6							
7	RB/ST	MT	158	36.7							
7	RB/ST	MT	181	65.8							
7	RB/ST	MT	152	36.5							
7	RB/ST	MT	138	26.7							
7	RB/ST	MT	172	49.9							
8	VANDALIZED (NO FISH)										
9	CH	MT	123	16.7	SC	51378-03					
9	CH	MT	123	18.6	SC	51378-04					
9	CH	MT	122	16.3	SC	51378-05			POOR	LV	
9	CH	MT	123	17.7	SC	51378-06			POOR	LV	
9	CH	MT	118	18.3	SC	51378-07			POOR	LV	
9	CH	MT	118	16.6	SC	51378-08			POOR	LV	
9	CH	MT	122	17.9	SC	51378-09					

9	CH	MT	112	14.3	SC	51378-10			POOR	LV	
9	CH	MT	120	14.6	SC	51378-11			POOR	LV	
9	CH	MT	125	19.9	SC	51378-12			POOR	LV	TCH
9	CH	MT	120	16.8	SC	51378-13			POOR	LV	TCH
9	CH	MT	121	18.3						LV	TCH
9	CH	MT	120	16.4						LV	TCH
9	CH	MT	118	17.3					POOR	LV	TCH
9	CH	MT	120	14.9						LV	TCH
9	CH	MT	115	15.3						LV	TCH
9	CH	MT	122	19.5						LV	TCH
9	CH	MT	115	17						LV	TCH
9	CH	MT	115	14.4						LV	TCH
9	CH	MT	118	17.3						LV	TCH
9	CH	MT	112	14.4						LV	TCH
9	CH	MT	135	21.4	SC	51378-14					
9	CH	MT	124	18.2						LV	TCH
9	CH	MT	121	18.6						LV	TCH
9	CH	MT	112	15.4						LV	TCH
9	CH	MT	122	18						LV	TCH
9	CH	MT	118	16.3						LV	TCH
9	CH	MT	125	19.4						LV	TCH
9	CH	MT	120	16.6						LV	TCH
9	CH	MT	118	16.4						LV	TCH
9	CH	MT	125	18.6						LV	TCH
9	CH	MT	118	15.5						LV	TCH
9	CH	MT	122	18.5						LV	TCH
9	CH	MT	120	15.5						LV	TCH
9	CH	MT	124	18.5						LV	TCH
9	CH	MT	118	17						LV	TCH
9	CH	MT	125	18.2						LV	TCH
9	CH	MT	120	17.8						LV	TCH
9	CH	MT	120	16.5						LV	TCH
9	CH	MT	116	16.7						LV	TCH
9	CH	MT	118	16.7						LV	TCH

9	CO	MT	121	16.4						A	TCH
9	CO	MT	115	14.4						A	TCH
9	CO	MT	125	18.6						A	TCH
9	CO	MT	120	14.2						A	TCH
9	LNC	IM	74	3.6							
9	LNC	IM	78	4.3							
9	LNC	IM	71	4.1							
9	LNC	MT	88	8.5							
9	RB/ST	IM	126	20.6							
9	RB/ST	IM	123	20							
9	RB/ST	MT	170	48.7							
9	RB/ST	MT	161	41.8							
9	RB/ST	MT	148	34							
9	RB/ST	MT	147	32.2			DEFORMED TAIL				
9	RB/ST	MT	185	63.6							
9	RB/ST	MT	175	48.7							
9	RB/ST	MT	165	43.5						A	
9	RB/ST	MT	154	36.6							
9	RB/ST	MT	151	33.8							
9	RB/ST	MT	146	27.9							
9	RB/ST	MT	142	28							
9	RB/ST	MT	165	39.6							
9	RB/ST	MT	170	49.6							
9	RB/ST	MT	160	41.8							
9	RB/ST	MT	165	41.3							
9	RB/ST	MT	159	39.5							
9	RB/ST	MT	161	38							
9	RB/ST	ST	244								
9	ST	ST	554								
10	CH	MT	120	17.4						LV	TCH
10	CH	MT	118	15.4						LV	TCH
10	CH	MT	115	14.8						LV	TCH
10	CH	MT	124	18.2						LV	TCH
10	CH	MT	120	15.2						LV	TCH

10	CH	MT	112	13.6						LV	TCH
10	CH	MT	120	17.4						LV	TCH
10	CH	MT	123	18						LV	TCH
10	CH	MT	112	15.3						LV	TCH
10	CH	MT	115	16.1						LV	TCH
10	CH	MT	123	18.3						LV	TCH
10	CH	MT	115	144						LV	TCH
10	CH	MT	116	16.8						LV	TCH
10	CH	MT	116	13.8						LV	TCH
10	CH	MT	122	15.8						LV	TCH
10	CH	MT	120	16.3						LV	TCH
10	CH	MT	126	22.8						LV	TCH
10	CH	MT	112	14.3						LV	TCH
10	CH	MT	120	16.9						LV	TCH
10	CH	MT	118	17						LV	TCH
10	CH	MT	120	17						LV	TCH
10	CH	MT	116	14.8						LV	TCH
10	CH	MT	110	13.8						LV	TCH
10	CH	MT	124	19.4						LV	TCH
10	CH	MT	124	19.8						LV	TCH
10	CH	MT	123	18.4						LV	TCH
10	CH	MT	123	18.3						LV	TCH
10	CH	MT	130	21.8						LV	TCH
10	CH	MT	118	17.5						LV	TCH
10	CH	MT	119	17						LV	TCH
10	CH	MT	119	15.8						LV	TCH
10	CH	MT	124	18.3						LV	TCH
10	CH	MT	117	15						LV	TCH
10	CH	MT	110	14.2						LV	TCH
10	CH	MT	118	15.5						LV	TCH
10	CH	MT	120	16						LV	TCH
10	CH	MT	120	18.1						LV	TCH
10	CH	MT	123	17.9						LV	TCH
10	CH	MT	125	18.9						LV	TCH

10	CH	MT	115	15.5						LV	TCH
10	CH	MT	115	16.5						LV	TCH
10	CH	MT	120	17.9						LV	TCH
10	CH	MT	123	19.5						LV	
10	CH	MT	124	18.7						LV	
10	CH	MT	125	19.6						LV	
10	CH	MT	124	18.6						LV	
10	CH	MT	119	16.6						LV	
10	CH	MT	118	16.3						LV	
10	CH	MT	126	21.4						LV	
10	CH	MT	126	17.9						LV	
10	CH	MT	125	18.9						LV	
10	CH	MT	120	17.8						LV	
10	CH	MT	114	15.2						LV	
10	CH	MT	110	13.2						LV	
10	CH	MT	114	15.9						LV	
10	CH	MT	120	15.8						LV	TCH
10	CH	MT	119	17.2						LV	TCH
10	CH	MT	119	15.9						LV	TCH
10	CH	MT	123	17.9						LV	TCH
10	CH	MT	124	17.4						LV	TCH
10	CH	MT	122	16.9						LV	TCH
10	CH	MT	124	19.4						LV	TCH
10	CH	MT	120	18.4						LV	TCH
10	CH	MT	120	17.4						LV	TCH
10	CH	MT	116	16.6						LV	TCH
10	CH	MT	119	17.6						LV	TCH
10	CH	MT	120	160						LV	TCH
10	CH	MT	119	17.6						LV	TCH
10	CH	MT	116	16.1						LV	TCH
10	CH	MT	120	17.8						LV	TCH
10	CH	MT	125	19.1						LV	TCH
10	CH	MT	120	16.9						LV	TCH
10	CH	MT	125	20						LV	TCH

10	CH	MT	127	19.3						LV	
10	CH	MT	120	18.2						LV	
10	CH	MT	119	18.8						LV	
10	CH	MT	125	20.5						LV	
10	CH	MT	121	19.5						LV	
10	CH	MT	121	17.9						LV	
10	CH	MT	118	17.9						LV	
10	CH	MT	130	18.8						LV	
10	CH	MT	132	22.7						LV	
10	CH	MT	122	19						LV	
10	CH	MT	118	17.7						LV	
10	CH	MT	120	15.7						LV	
10	CH	MT	126	19.7						LV	
10	CH	MT	114	17						LV	
10	CH	MT	118	16.9						LV	
10	CH	MT	118	15.7						LV	
10	CH	MT	118	16.3						LV	
10	CH	MT	120	17.3						LV	
10	CH	MT	120	18.4						LV	
10	CH	MT	120	17.8						LV	
10	CH	MT	120	18.3						LV	
10	CH	MT	120	18.5						LV	
10	CH	MT	115	15.6						LV	
10	CH	MT	117	15.6						LV	
10	CH	MT	118	16.4						LV	
10	CH	MT	120	17.9						LV	
10	CH	MT	123	19.2						LV	
10	CH	MT	110	15.3						LV	
10	CH	MT	123	17.6						LV	
10	CH	MT	120	16.4						LV	
10	CH	MT	120	17.7						LV	
10	CH	MT	118	15.3						LV	
10	CH	MT	123	17.5						LV	
10	CH	MT	116	14.4						LV	TCH

10	CO	MT	120	16						A	TCH
10	CO	MT	126	17.5						A	
10	LNC	M	70	4.2							
10	LNC	M	92	9.2							
10	RB/ST	IM	128	18.9							
10	RB/ST	MT	154	39							
10	RB/ST	MT	162	33.8							
10	RB/ST	MT	151	31.5							
10	RB/ST	MT	145	28.9							
10	RB/ST	MT	155	33.9							
10	RB/ST	MT	160	27.9						B.C.	
10	RB/ST	MT	154	42.2							
10	RB/ST	MT	150	32.3							
10	RB/ST	MT	190	48.4							
10	RB/ST	MT	186	52.8							
10	RB/ST	MT	140	25.8							
10	RB/ST	MT	140	28.7							
10	RB/ST	MT	138	25.4							
10	RB/ST	MT	170	44.7							
10	RB/ST	MT	148	32.4							
10	RB/ST	MT	150	33.2							
10	RB/ST	MT	160	51.2							
10	RB/ST	MT	152	36.7							
10	RB/ST	MT	154	41	SC	51377-01		FR	99-51		
10	RB/ST	MT	176	62.3	SC	51377-02		FR	99-52		
11	CH	MT	123	17.2						LV	TCH
11	CH	MT	120	17.8						LV	
11	CH	MT	118	16.9						LV	
11	CH	MT	120	18.4						LV	
11	CH	MT	121	17.5						LV	
11	CH	MT	136	25.8						LV	
11	CH	MT	125	20.1						LV	
11	CH	MT	119	18.5						LV	
11	CH	MT	120	19.1						LV	

11	CH	MT	125	20.2						LV	
11	CH	MT	118	19.5						LV	
11	CH	MT	119	17.8						LV	
11	CH	MT	122	19.2						LV	
11	CH	MT	121	18.9						LV	
11	CH	MT	121	18.9						LV	
11	CH	MT	124	21.2						LV	
11	CH	MT	125	22						LV	
11	CH	MT	122	18.5						LV	
11	CH	MT	118	15.5						LV	
11	CH	MT	118	15.9						LV	
11	CH	MT	122	19.1						LV	
11	CH	MT	124	20.1						LV	
11	CH	MT	119	15.5						LV	
11	CH	MT	122	19						LV	
11	CH	MT	124	19.7						LV	
11	CH	MT	120	18.4						LV	
11	CO	MT	122	17.4						A	
11	CO	MT	122	17.8						A	
11	CO	MT	130	16.1						A	
11	CO	MT	116	15.8						A	
11	LNC	M	79	5.3							
11	RB/ST	IM	84	6.4							
11	RB/ST	MT	152	31.5							
11	RB/ST	MT	167	46	SC	51379-53		FR	99-53		
11	RB/ST	MT	174	49	SC	51379-54		FR	99-54		
11	RB/ST	MT	155	33.8							
11	RB/ST	MT	148	27.9							
11	RB/ST	MT	126	18.4							
11	RB/ST	MT	150	31.2							
11	RB/ST	MT	170	45.2							
11	RB/ST	MT	155	38.5							
11	RB/ST	MT	180	55.3							
11	RB/ST	MT	140	24.2							

11	RB/ST	MT	170	44.6							
11	RB/ST	MT	158	40.1							
11	RB/ST	MT	140	28.7							
11	RB/ST	MT	162	44.7							
11	RB/ST	MT	158	39							
12	CH	MT	120	18.9						LV	TCH
12	CH	MT	116	17.2						LV	TCH
12	CH	MT	120	17.4							
12	CO	MT	122	20.3						A	TCH
12	LNC	IM	63	3.6							
12	RB/ST	MT	186	62.7	SC	51377-05		FR	99-55		
13	NONE										
14	NONE										
15	CO	MT	114	13.9						A	TCH
15	CO	MT	125	21.2						A	TCH
15	LNC	IM	63	3.2							
15	LNC	M	89	6.7							
15	RB/ST	IM	118	16.4							
15	RB/ST	IM	82	5.9							
15	RB/ST	IM	82	6							
15	RB/ST	MT	155	39	SC	51377-06		FR	99-56		
15	RB/ST	MT	162	40.5	SC	51377-07		FR	99-57		
16	CH	MT	125	21.2						LV	TCH
16	CH	MT	125	22.6						LV	TCH
16	CO	MT	127	19.2						A	TCH
16	LNC	IM	54	1.3							
16	LNC	M	76	5.3							
16	RB/ST	IM	120	18.8							
16	RB/ST	IM	111	15.7	ELECTROFISHING BURN						
16	RB/ST	MT	152	36.8	SC	51379-58		FR	99-58		
16	RB/ST	MT	132	23.8	SC	51379-59		FR	99-59		
17	CH	MT	124	22.6						LV	TCH
17	CH	MT	116	13.1						LV	TCH

17	CH	MT	125	22.5						LV	TCH
17	CH	MT	116	12.2						LV	TCH
17	CH	MT	110	15.2						LV	TCH
17	CH	MT	128	22.2						LV	TCH
17	LNC	IM	72	2.6							
17	LNC	IM	69	2.3							
17	MW	IM	152	30							
17	RB/ST	IM	72	3.8							
17	RB/ST	MT	162	42.7	SC	51379-60		FR	99-60		
17	RB/ST	MT	152	38.2	SC	51379-61		FR	99-61		
17	RB/ST	MT	150	31.8							
17	RB/ST	MT	175	60	SC	51379-62		FR	99-62		
17	SU	IM	126	30.2							
18	CH	MT	123	20.1						LV	TCH
18	CH	MT	135	23.2						LV	TCH
18	CH	MT	134	24.9						LV	TCH
18	RB/ST	IM	77	4.5							
18	RB/ST	MT	157	38.1	SC	51379-63		FR	99-63		
18	RB/ST	MT	132	23.8	SC	51379-64		FR	99-64		
19	CH	MT	114	12.6						LV	TCH
19	CH	MT	106	13.8						LV	TCH
19	CH	MT	98	10.8						LV	TCH
19	CH	MT	95	10						LV	TCH
19	CH	MT	95	10.9						LV	TCH
19	CH	MT	118	19.6						LV	TCH
19	CH	MT	123	18.4						LV	TCH
19	CH	MT	128	21						LV	TCH
19	CH	MT	123	19.6						LV	TCH
19	CH	MT	132	26						LV	TCH
19	CH	MT	115	13.5						LV	TCH
19	CH	MT	101	12.5						LV	TCH
19	CH	MT	116	14.2						LV	TCH
19	LNC	M	85	6.2							
19	RB/ST	IM	125	19.8							

19	RB/ST	IM	103	12.7							
19	RB/ST	IM	114	15.3							
19	RB/ST	IM	120	19.5							
19	RB/ST	MT	156	38.4							
19	RB/ST	MT	162	42.8							
19	RB/ST	MT	162	42.9	SC	51379-65		FR	99-65		
19	RB/ST	MT	150	33		51379-66		FR	99-66		

Table 5: Fish sampling summary by species/origin

Haul	Date	Effort	Temp (°C)	Water Level (m)	CO-MT-Htch		CO-MT-Wild		CH-MT-Htch		CH-MT-Wild		RB/ST-IM-Wild		RB/ST-MT-Wild		RB-M-Wild		ST-M-Wild		Other Fish*		Total	
					#	CPUE	#	CPUE	#	CPUE	#	CPUE	#	CPUE	#	CPUE	#	CPUE	#	CPUE	#	CPUE	#	CPUE
1	02-Jun-99	12.25	7	0.77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	03-Jun-99	12.2	8	0.82	8	0.6557377	1	0.081967	0	0	0	0	3	0.245902	7	0.57377	0	0	0	0	8	0.655738	27	2.213115
3	04-Jun-99	12	8	0.81	10	0.83333333	0	0	0	0	0	0	9	0.75	6	0.5	0	0	0	0	6	0.5	31	2.583333
4	07-Jun-99	11.75	9	0.7	19	1.61702128	0	0	0	0	0	0	5	0.425532	8	0.680851	0	0	0	0	2	0.170213	34	2.893617
5	08-Jun-99	12	8	0.87	23	1.91666667	0	0	0	0	0	0	2	0.166667	12	1	0	0	0	0	7	0.583333	44	3.666667
6	09-Jun-99	12.3	8	0.79	25	2.03252033	1	0.081301	0	0	0	0	6	0.487805	6	0.487805	0	0	0	0	0	0	38	3.089431
7	10-Jun-99	12	9	0.82	22	1.83333333	2	0.166667	1	0.083333	2	0.166667	2	0.166667	6	0.5	0	0	0	0	7	0.583333	42	3.5
9	16-Jun-99	12	16	0.65	4	0.33333333	0	0	31	2.583333	9	0.75	2	0.166667	17	1.416667	1	0.083333	1	0.083333	4	0.333333	69	5.75
10	17-Jun-99	12.5	14	0.63	1	0.08	1	0.08	60	4.8	47	3.76	1	0.08	20	1.6	0	0	0	0	2	0.16	132	10.56
11	18-Jun-99	13	12	0.58	4	0.30769231	0	0	1	0.076923	25	1.923077	1	0.076923	16	1.230769	0	0	0	0	1	0.076923	48	3.692308
12	21-Jun-99	12.25	10	0.49	1	0.08163265	0	0	2	0.163265	1	0.081633	0	0	1	0.081633	0	0	0	0	1	0.081633	6	0.489796
13	22-Jun-99	12.1	10	0.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	23-Jun-99	11.9	10	0.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	24-Jun-99	12	12	0.44	2	0.16666667	0	0	0	0	0	0	3	0.25	2	0.166667	0	0	0	0	2	0.166667	9	0.75
16	25-Jun-99	13	12	0.46	1	0.07692308	0	0	2	0.153846	0	0	2	0.153846	2	0.153846	0	0	0	0	2	0.153846	9	0.692308
17	28-Jun-99	12.6	10	0.58	0	0	0	0	6	0.47619	0	0	1	0.079365	4	0.31746	0	0	0	0	4	0.31746	15	1.190476
18	29-Jun-99	13	10	0.64	0	0	0	0	3	0.230769	0	0	1	0.076923	2	0.153846	0	0	0	0	0	0	6	0.461538
19	30-Jun-99	12.4	10	0.61	0	0	0	0	13	1.048387	0	0	4	0.322581	4	0.322581	0	0	0	0	1	0.080645	22	1.774194

* Other fish species sampled include MW, LNC, SU. PL were not enumerated