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FEDERAL AID IN FISH RESTORATION
1997 JOB PERFORMANCE REPORT
PROGRAM F-71-R-22

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
CLEARWATER REGION (Subprojects I, II, III)

PROJECT I.	SURVEYS AND INVENTORIES
Job a.	Clearwater Region Mountain Lakes Investigations
Job b.	Clearwater Region Lowland Lakes Investigations
Job c.	Clearwater Region Rivers and Streams Investigations
PROJECT II.	TECHNICAL GUIDANCE
PROJECT III.	HABITAT MANAGEMENT

By

Tim Cochnauer, Regional Fishery Biologist
Ed Schriever, Regional Fishery Biologist
Jody Brostrom, Regional Fishery Biologist
Larry T. Barrett, Fishery Technician

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1998 ANNUAL PERFORMANCE REPORT

State of: Idaho

Name: Fisheries Management

Project: Surveys and Inventories
Clearwater Region

Subproject: I-A-Clearwater Region

Job No.: a

Title: Mountain Lakes Investigations

Contract Period: July 1, 1997 to June 30, 1998

ABSTRACT

Twenty-eight mountain lakes were surveyed in the Clearwater National Forest during July-September 1997. An additional three lakes in the North Fork Clearwater River drainage were re-surveyed. Initially these three lakes (Elizabeth, Pete Ott, Tillie) were surveyed in 1994, but management directions were not prescribed because of inconclusive fish data. Two lakes, lower and upper Indian Post Office, will be retained on the stocking schedule. Ring Lake will be removed from the stocking schedule and Upper Steep Lake will be resurveyed in 1998.

Authors:

Tim Cochnauer
Regional Fishery Manager
Patrick D. Murphy
Fishery Technician

INTRODUCTION

The High Lakes Fisheries Project was initiated as a cooperative program of the U.S. Forest Service and the Idaho Department of Fish and Game in 1986. Lewis Clark State College (Lewiston, Idaho) became a cooperating partner in 1994. The goal of the program is to develop baseline ecological data on high mountain lakes within the Clearwater River drainage of north central Idaho. During the period 1986 through 1996, 344 individual mountain lakes were surveyed in the Clearwater and Nez Perce national forests (Bahls 1990, Bahls 1992, Cochnauer 1994, Cochnauer and Murphy 1996, Cochnauer and Murphy 1997). Of these, 190 lakes are on the Nez Perce National Forest and 154 on the Clearwater National Forest.

In 1997, the project continued on the Clearwater National Forest as a partnership between the Clearwater National Forest, Idaho Department of Fish and Game, and Lewis Clark State College. This report presents the findings for the 31 lakes surveyed in 1997. Lakes were located in the Lochsa River and North Fork Clearwater River drainages.

OBJECTIVES

The objectives of the 1997 survey were to obtain, analyze, and summarize data to be used for:

1. biological, physical, and chemical inventory of mountain lakes;
2. long term monitoring;
3. ecological effect of fish introductions; and
4. development of fish management guidelines for individual lakes.

METHODS

The standardized high mountain lake survey methodology as described by Bahls (1991) was used to survey 31 mountain lakes located in the Lochsa River and North Fork Clearwater River drainages (Figure 1) from July 1 to September 30, 1997.

RESULTS AND DISCUSSION

The location description and proposed management direction based on information collected for each lake are presented in Table 1. Individual lake narratives as to management prescriptions follow.

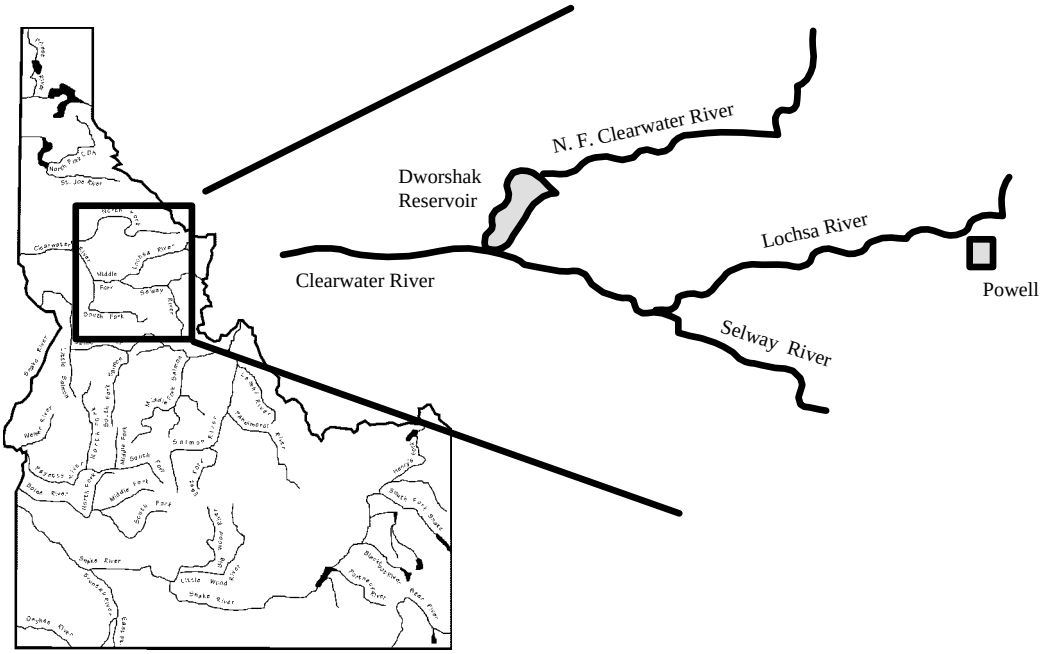

Figure 1. General location of high mountain lakes surveyed in Clearwater National Forest, 1997.

Table 1. Location and proposed management direction for mountain lakes surveyed in the Clearwater National Forest, 1997.

Lake name	Legal Description			FSY	Class	PSY	Stock	Int.
	Town	Range	Sec.					
Andy Lake #1	33N	8E	32	--	Ib	--	--	--
Andy Lake #2	33N	8E	32	--	Ib	--	--	--
Andy Lake, #3 West	33N	8E	32	--	Ib	--	--	--
Cayuse Lake	38N	13E	29	--	Ib	--	--	--
Cold Lake #1	40N	9E	22	--	Ib	--	--	--
Cold Lake #2	40N	9E	23	--	Ib	--	--	--
Elizabeth Lake	40N	9E	24	1966	IIB	--	--	--
Fish Lake	40N	12E	11	--	IIB	--	--	--
Flat Mountain Lake, North and East	39N	9E	1	--	Ib	--	--	--
Flat Mountain Lake, West	39N	9E	1	--	Ib	--	--	--
Goose Lake	41N	12E	10	--	Ib	--	--	--
Horseshoe Lake	37N	11E	15	--	Ib	--	--	--
Indian Post Office Lake, Lower	37N	12E	20	1970	IVB	1998	CT-500	3
Indian Post Office Lake, Upper	37N	12E	20	1970	IVB	1998	CT-500	3
Little Elizabeth Lake	40N	9E	24	--	Ib	--	--	--
Pete Ott Lake	40N	9E	26	1966	IIa	--	--	--
Ring Lake	40N	9E	35	1976	IIa	--	--	--
Robin Creek Lake, #1	36N	13E	23	--	Ib	--	--	--
Robin Creek Lake, #2	36N	13E	23	--	Ib	--	--	--
Robin Creek Lake, #3	36N	14E	18	--	Ib	--	--	--
Saddle Lake	40N	9E	11	--	Ib	--	--	--
Spring Lake, North	40N	9E	23	--	Ib	--	--	--
Spring Lake, South	40N	9E	23	--	Ib	--	--	--
Steep Lake, Lower	41N	12E	22	1968	IIa	--	--	--
Steep Lake Middle	41N	12E	21	---	Ib	---	---	---
Steep Lake, Upper	41N	12E	21	Re-survey1998		--	--	--
Storm Lake	37N	17E	7	--	Ib	--	--	--
Storm Lake, North	37N	17E	17	--	Ib	--	--	--
Storm Lake, Middle	37N	17E	20	--	Ib	--	--	--
Tillie Lake	40N	9E	24	1966	IIa	--	--	--

FSY-First year stocked; PSY-Proposed next stocking year; Int-Proposed stocking interval; Class Ib-fishless lake with no past stocking records; IIb-stocked lake with questionable survival; IIa-natural trout reproduction at moderate or higher level; IVb-stockable lake; V-further study needed to determine status of natural reproduction.

Andy's Lake #1

This lake is the largest of the three Andy's lakes (1.1 ha). The lake is relatively shallow with 85% of the surface area being less than 3m depth. Spotted frog *Rana pretiosa* and long-toed salamander *Ambystoma macrodactylum* populations are abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Andy's Lake #2 (Middle)

Middle Andy's Lake is small (<1ha), shallow (100% <3m) lake supporting abundant populations of spotted frogs and long-toed salamanders. Both juvenile and adult phases of both species of amphibians were observed. Fish stocking in this lake is not recommended because of its shallow nature.

Andy's Lake #3 (West)

West Andy's lake is a small (<1ha), shallow (100% <3m) lake supporting abundant populations of spotted frogs and long-toed salamanders. Fish stocking in this lake is not recommended because of its shallow nature.

Cayuse Lake

Cayuse Lake is a relatively large (2.2 ha), shallow (100%<3m) lake with no fish. The lake supports abundant populations of spotted frogs and long-toed salamanders. Fish stocking in this lake is not recommended because of its shallow nature.

Cold Lake #1

Cold Lake #1 is a shallow (100% <3m), small (<1 ha) lake with abundant populations of spotted frogs and long-toed salamanders. Fish stocking in this lake is not recommended because of its shallow nature.

Cold Lake #2

Cold Lake #2 is a small (<1 ha), shallow (100% <3m) lake that apparently supports no amphibian populations. The bottom substrate is totally rubble and boulder. Fish stocking in this lake is not recommended because of its shallow nature.

Elizabeth Lake

Elizabeth Lake was originally surveyed in 1994, but no management direction was prescribed because of inconclusive fish information. Cutthroat trout are naturally reproducing in the lake system and are relatively abundant (1.33 fish per hour). Stocking of fish in this lake is not recommended because of adequate natural reproduction.

Fish Lake

Fish Lake (North Fork Clearwater River) is a large (46.5 ha), relatively deep (>40m) lake that supports abundant populations of cutthroat trout and bull trout. The outlet stream supports the bulk of cutthroat spawning. Limited numbers of both spotted frogs and long-toed salamanders were observed. Fish stocking in this lake is not recommended because of the ample natural reproduction.

Flat Mountain, North and East

North and East Flat Mountain lakes are combined into one lake because of the high water level. The maximum depth of the two lakes is 1m and the combined area for both lakes at this water level is less than 1 ha. East Lake is probably a small wet meadow at lower water levels. Relatively few spotted frogs and long-toed salamanders were observed. No fish were observed in the lake system and stocking is not recommended because of the shallow nature of the lake.

Flat Mountain Lake, West

West Flat Mountain Lake is a small (<1 ha), shallow (100% <3m) lake that is surrounded by a large wet meadow. Relatively few spotted frogs and long-toed salamanders were observed. Fish stocking in this lake is not recommended because of its shallow nature.

Goose Lake

Goose Lake is a medium sized (2 ha), shallow (100% <3m) lake that has abundant populations of spotted frogs and long-toed salamanders. Stocking of fish in this lake is not recommended because of its shallow nature.

Horseshoe Lake

Horseshoe Lake is a small (<1 ha), shallow (100% <3m) lake that supports abundant populations of spotted frogs and long-toed salamanders. Stocking of fish in this lake is not recommended because of its shallow nature.

Indian Post Office Lake, Lower

The lower Indian Post Office Lake is a medium sized (1.4 ha) lake of moderate depth (5 m max depth) and supports a cutthroat trout population. No amphibians were observed during the survey. Continued stocking of 500 westslope cutthroat trout fry every three years is recommended.

Indian Post Office Lake, Upper

The upper Indian Post Office Lake is a medium sized (1.7 ha), relatively deep (10 m max depth) that supports both rainbow and cutthroat trout populations at low levels. No spotted frogs were observed, but long-toed salamanders were abundant. Continued stocking of 500 westslope cutthroat fry every three years is recommended.

Little Elizabeth Lake

Little Elizabeth Lake is a series of small (<1 ha), shallow (100% <3m) ponds that supports some spotted frogs and long-toed salamanders. Fish stocking in this lake is not recommended because of its shallow nature.

Pete Ott Lake

Pete Ott Lake was originally surveyed in 1994, but no management direction was prescribed because of inconclusive fish information. Cutthroat trout are naturally reproducing and are in abundant numbers (0.85 fish per hour). Fish stocking in this lake is not recommended due to adequate natural reproduction.

Ring Lake

Ring Lake is a small (1 ha), shallow (90%<3m) lake that does support an abundant cutthroat trout population. The two inlet streams supply adequate spawning habitat as several age classes of trout were observed. Because of the natural reproduction, fish stocking in this lake is not recommended.

Robin Creek Lake #1

Robin Creek Lake #1 is a medium sized (2.3 ha), shallow (80%<3m) lake that has no fish. Both spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Robin Creek Lake #2

Robin Creek Lake #2 is a small (1.1 ha), shallow (100%<3m) lake with no fish. Spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Robin Creek Lake #3

Robin Creek Lake #3 is a small (<1 ha), shallow (100%<3m) lake with no fish. Spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Saddle Lake

Saddle Lake is a small (<1 ha), shallow (100%<3m) lake with no fish, but abundant populations of spotted frogs and long-toed salamanders. Fish stocking in this lake is not recommended because of its shallow nature.

Spring Lake, North

North Spring Lake is a small (<1 ha), shallow (100%<3m) lake with no fish. Spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Spring Lake, South

South Spring Lake is a small (<1 ha), shallow (100%<3m) lake with no fish. Spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Steep Lake, Lower

Lower Steep Lake is a medium-sized (3 ha), relatively deep (6m) lake with an abundant golden trout population. Spotted frogs and long-toed salamanders are scarce. Four inlets provide ample spawning habitat for the trout. Fish stocking in this lake is not recommended, as natural reproduction is adequate.

Steep Lake, Middle

Middle Steep Lake is a small (<1 ha) outlet pond of Upper Steep Lake and of shallow (100%<3m) nature. No fish were observed in the pond. Spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Steep Lake, Upper

Upper Steep Lake is a medium-sized (1.75 ha), shallow (85%<3m) lake with no fish although the lake was stocked in 1991. There were abundant long-toed salamanders and a few spotted frogs were observed. Because of snow and ice cover, the inlet and outlet streams were not surveyed. Fish stocking should be delayed until the lake is resurveyed in 1998.

Storm Lake

Storm Lake is a large (6.1 ha), deep (13 m max depth) lake. No fish were collected in the overnight gillnet set. Spotted frogs and long-toed salamanders were observed in the lake, but at low numbers. Fish stocking in this lake is not recommended because of natural nature.

Storm Lake, North

North Storm Lake is a small (<1 ha), shallow (100%<3m) with no fish. Spotted frogs were abundant, but no long-toed salamanders were observed. Fish stocking in this lake is not recommended because of its shallow nature.

Storm Lake, Middle

Middle Storm Lake is a medium sized (1.4 ha), shallow (100%<3m) with no fish. Spotted frogs and long-toed salamanders were abundant. Fish stocking in this lake is not recommended because of its shallow nature.

Tillie Lake

Tillie Lake was originally surveyed in 1994, but no management direction was prescribed because of inconclusive fish information. The re-survey indicates that natural reproduction is occurring and that cutthroat trout are abundant (3.3 fish per hour). Stocking of this lake is not recommended due to adequate natural reproduction.

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1997 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management

Project 1: Surveys and Inventories Subproject 1-B: Clearwater Region

Job: b Title: Lowland Lakes Investigations

Contract Period: July 1, 1997 to June 30,1998

ABSTRACT

Clearwater Region fisheries management personnel and Conservation Officers checked 299 anglers that spent 423 hours fishing lakes, ponds and reservoirs and caught 489 game fish.

Clearwater Region fisheries management personnel sampled Winchester Lake, Waha Lake, Elk Creek Reservoir and Tolo Lake. Yellow perch *Perca flavescens* (34.8%), largemouth bass *Micropterus salmoides* (49.1%), smallmouth bass *M. dolomieu* (34.3%) and white crappie *Poxomis annularis* (53.9%) were the most abundant species in Waha Lake, Winchester Lake, Elk Creek Reservoir and Tolo Lake, respectively.

Author:

Ed Schriever
Regional Fishery Biologist

OBJECTIVES

1. Conduct routine, impromptu creel surveys on lowland lakes and reservoirs to track fisheries composition and catch rate.

2. Perform lowland lake monitoring survey on Waha Lake, Winchester Lake, and Elk Creek Reservoir.

4. Monitor stock structure of largemouth bass *Micropterus salmoides* in Spring Valley Reservoir.

METHODS

We performed standard fish community surveys using Idaho Department of Fish and Game standard survey protocol (Appendix A).

We sampled fish in lowland lakes using pulsed D.C. current from a portable generator and a Coffelt VVP-2E pulsator. Booms and electrodes were mounted on a 16-foot john boat. All electrofishing took place between 2000 hours and 0300 hours. We sampled trout *Oncorhynchus* and kokanee *O. nerka* in lowland lakes using gill nets. We used standard floating experimental gill nets 150 feet long by six feet deep with six panels of different size mesh. Mesh sizes were 3/4", 1", 1-1/4", 1-1/2", 2", and 2-1/2". One or two nets were set and fished from late afternoon until early the next morning. Total net hours were recorded with the catch.

RESULTS

Creel Survey

Clearwater Region fishery management personnel, conservation officers and volunteers checked 338 anglers at regional lowland lakes and ponds in 1997. These anglers fished 524 hours to catch 549 game fish for a catch rate of 1.05 fish per hour. The catch consisted of 98% rainbow trout *O. mykiss* (Table 1).

Table 1. Summary of creel survey findings in Clearwater Region lowland lakes and reservoirs, 1997.

Water/ Date	Number Anglers	Total Hours	Rainbow trout	Bluegill sunfish	Largemouth Bass	Brook trout	Total	CPUE
Five-Mile								
05/25	7	7	0	0	0	0	0	0.00
06/07	18	17.5	18	0	0	0	18	1.03
Subtotal	25	24.5	18	0	0	0	18	0.73
Moose Creek Reservoir								
01/05	0	0	0	0	0	0	0	0.00
01/12	4	8	22	0	0	0	22	2.75
01/23	2	6	5	0	0	0	5	0.83
02/15	4	6	2	0	0	0	2	0.33
05/03	6	13	16	0	0	0	16	1.23
Subtotal	16	33	45	0	0	0	45	1.36
Soldier Meadows								
02/06	2	6	7	0	0	0	7	1.17
Spring Valley Reservoir								
01/05	11	19.5	21	0	0	0	21	1.08
01/12	6	13	21	10	0	0	31	2.38
01/17	33	46	33	0	0	0	33	0.72
01/18	7	5	14	0	0	0	14	2.80
01/19	33	46	32	0	0	0	32	0.70
01/20	26	24	57	2	0	0	59	2.46
01/23	9	15	17	0	0	0	17	1.13
02/02	12	11.5	16	0	0	0	16	1.39
02/15	12	15	9	0	0	0	9	0.60
02/23	9	13.5	13	0	0	0	13	0.96
04/25	10	15.5	44	0	0	0	44	2.84
04/26	37	66	48	0	0	0	48	0.73
05/03	10	8.5	38	0	0	0	38	4.47
05/09	12	26.5	45	0	0	0	45	1.70
Subtotal	**227**	**325**	**408**	**12**	**0**	**0**	**420**	**1.29**
Winchester Reservoir								
06/14	25	42.5	20	1	0	0	21	0.49
06/26	43	93	38	0	0	0	38	0.41
Subtotal	**68**	**135.5**	**58**	**1**	**0**	**0**	**59**	**0.44**
Total/Ave	**338**	**524**	**536**	**13**	**0**	**0**	**549**	**1.05**

Standard Lake Surveys

Spring Valley Reservoir

Clearwater Region fisheries management personnel sampled Spring Valley Reservoir on May 24, 1997. Species composition was 60% bluegill sunfish *Lepomis macrochirus* (N=285) and 40% largemouth bass (N=193).

Proportional Stock Density (PSD) for largemouth bass was 76 (Table 2).

Waha Lake

Clearwater Region fisheries management personnel performed a standard lake survey of Waha Lake on September 19, 1997. Game fish accounted for 100% of the sample from Waha Lake. Yellow perch *Perca flavescens* (N=363) dominated the sample, representing 35% of all fish collected and 25.3% of the sample biomass. Kokanee were the next most numerous representing 23.4% of the sample. Due to the relatively large average size, kokanee accounted for 39% of the sample biomass. Splake *Salvelinus fontinalis x S. namaycush*, recently introduced to Waha Lake, were well represented in the sample and accounted for 11.1% of the sample and 33.9% of the sample biomass (Table 3). Length frequencies are shown in Tables 4-9.

Winchester Lake

Clearwater Region fisheries management personnel sampled Winchester Lake on May 19, 1997. Species composition was 21% yellow perch (N=105), 11.4% brown bullhead *Ameiurus nebulosus*(N=57), 49.1% largemouth bass (N=245) and 18.4% black crappie *Pomoxis nigromaculatus* (N=92). Yellow perch were illegally introduced in Winchester Lake in the 1990's. Length frequencies are shown in Tables 10-13.

Elk Creek Reservoir

Clearwater Region fisheries management personnel performed a standard lake survey of Elk Creek Reservoir on September 11, 1997. The fish community sampled in Elk Creek Reservoir is 99.9% game fish. Smallmouth bass *M. dolomieu* (N=107*)* dominated the sample, representing 33.8% of all fish collected. Due to their relatively small size, smallmouth bass only accounted for 23.1% of the sample biomass. Black bullhead *A. melas* were the next most numerous representing 19.2% of the sample and 30.3% of the sample biomass (Table 14). Length frequencies are shown in Table 15-23.

Table 2. Length frequency of largemouth bass from Spring Valley Reservoir, 1983-1997.

mm	9/83	9/84	1988	6/91	5/92	5/93	5/94	5/95	5/96	5/97
<100	14	0	13	1	31	210	39	3	4	12
100	28	0	23	0	0	1	45	33	0	24
110	40	5	31	2	0	0	35	137	11	27
120	54	4	19	1	2	16	26	122	5	12
130	37	4	18	1	6	33	10	109	19	10
140	21	18	9	9	11	61	11	38	48	10
150	13	29	2	27	15	48	24	31	20	8
160	6	33	2	39	9	31	37	42	13	20
170	2	14	5	30	19	15	28	49	8	15
180	0	12	6	19	15	7	17	26	4	19
190	1	9	6	12	3	7	14	9	6	7
200	4	4	5	20	6	3	4	1	3	5
210	4	0	4	75	11	5	6	2	3	1
220	0	0	2	110	19	3	5	2	1	0
230	0	0	0	55	29	5	6	2	0	0
240	2	1	0	10	26	0	5	1	0	0
250	1	0	1	9	22	1	1	2	0	0
260	1	0	0	4	14	0	2	0	0	0
270	2	0	0	0	9	0	1	2	1	1
280	1	0	0	0	3	0	1	0	1	1
290	0	0	0	0	2	1	0	4	2	2
300	0	0	0	0	3	0	1	5	1	4
310	0	1	0	0	0	2	1	8	1	1
320	0	0	0	0	2	1	3	3	2	1
330	0	0	0	0	0	3	1	5	0	1
340	0	0	0	0	3	3	2	1	2	0
350	0	0	0	0	0	4	2	0	0	0
360	0	0	0	0	2	5	1	0	0	0
370	0	0	0	0	0	1	2	0	1	0
380	0	0	0	0	0	0	1	0	2	1
390	0	0	0	1	0	2	4	0	0	1
400	0	0	0	0	0	0	4	3	0	0
410	0	0	0	0	0	0	3	0	0	4
420	0	0	0	0	0	0	4	1	0	0
430	0	0	0	0	0	0	0	1	2	0
440	0	0	0	0	0	0	0	0	1	1
450	0	0	0	0	0	0	0	1	2	3
460	0	0	0	1	1	0	0	0	2	0
470	0	0	0	1	0	0	0	0	1	0
480	0	0	0	0	1	0	0	0	0	2
490	0	0	0	0	0	0	0	0	0	0
500	1	0	0	0	0	0	0	0	0	0
Number	232	134	146	427	264	468	346	643	166	193
Length	129	159	129	203	199	123	161	143	174	174
PSD	6	17	0	1	8	54	48	64	57	76
%>200 mm	7	4	8	67	58	8	17	7	17	15
%>300 mm	0	1	0	1	5	4	8	4	10	11

Table 3. Waha Lake standard survey findings of fish community characteristics, September 19, 1997.

Catch per unit effort of combined gear sampling efforts					
Species	Length Range (mm)	Number	Percent	Weight (kg)	Percent
Game Fish					
Rainbow trout	140-340	188	18.1	12.1	10.3
Kokanee	160-320	243	23.4	39.0	33.2
Smallmouth bass	50-350	82	7.9	4.7	4.0
Splake	220-400	115	11.1	33.9	28.9
Black Crappie	140-170	46	4.5	2.5	2.1
Yellow Perch	60-220	363	35.0	25.3	21.5
Total		**1037**	**100**	**117.5**	**100**

Table 4. Catch composition of rainbow trout from Waha Lake, September 19, 1997.

Length Range (mm)	No. per unit effort	Percent Of Sample	Mean Weight (grams)	Relative wt.
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	4	2.1	30.00	89
150	2	1.1	38.00	92
160	2	1.1	45.00	90
170	0	0.0		
180	0	0.0		
190	1	0.5	74.00	90
200	0	0.0		
210	2	1.1	100.00	91
220	12	6.4	115.00	91
230	27	14.4	127.00	89
240	41	21.8	130.00	80
250	36	19.1	145.00	79
260	26	13.8	200.00	97
270	22	11.7	205.00	89
280	8	4.3	210.00	82
290	3	1.6	247.00	87
300	0	0.0		
310	1	0.5	280.00	81
320	0	0.0		
330	0	0.0		
340	1	0.5	344.00	76

Table 5. Catch composition of kokanee salmon from Waha Lake, September 19, 1977.

Length Range (mm)	No. per Unit effort	Percent of sample	Mean weight (grams)	Relative Wt.
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	1	0.4	45.00	102
170	0	0.0		
180	1	0.4	63.00	101
190	0	0.0		
200	0	0.0		
210	1	0.4	95.00	97
220	3	1.2	105.00	93
230	11	4.4	140.00	109
240	54	21.7	160.00	110
250	59	23.7	155.00	95
260	47	18.9	180.00	98
270	19	7.6	180.00	87
280	12	4.8	206.67	90
290	11	4.4	225.00	88
300	21	8.4	270.00	96
310	3	1.2	280.00	90
320	6	2.4	295.00	87

Table 6. Catch composition of smallmouth bass from Waha Lake, September 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative wt.
50	1	1.2	2.00	93
60	1	1.2	3.00	83
70	0	0.0		
80	0	0.0		
90	1	1.2	10.00	87
100	1	1.2	13.00	84
110	11	13.4	18.00	88
120	15	18.3	19.40	73
130	14	17.1	24.80	74
140	9	11.0	38.00	91
150	6	7.3	44.20	86
160	7	8.5	69.60	113
170	4	4.9	58.75	79
180	4	4.9	100.00	114
190	0	0.0		
200	2	2.4	95.00	79
210	0	0.0		
220	1	1.2	120.00	75
230	0	0.0		
240	1	1.2	160.00	77
250	0	0.0		
260	0	0.0		
270	0	0.0		
280	0	0.0		
290	2	2.4	290.00	79
300	0	0.0		
310	0	0.0		
320	0	0.0		
330	0	0.0		
340	0	0.0		
350	2	2.4	635.00	99

Table 7. Catch composition of splake from Waha Lake, September 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative wt.
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	0	0.0		
170	0	0.0		
180	0	0.0		
190	0	0.0		
200	0	0.0		
210	0	0.0		
220	1	0.9	101.00	N/A
230	3	2.6	112.67	N/A
240	1	0.9	125.00	N/A
250	0	0.0		N/A
260	1	0.9	140.00	N/A
270	4	3.5	158.67	N/A
280	6	5.2	193.60	N/A
290	11	9.6	224.00	N/A
300	12	10.4	224.00	N/A
310	13	11.3	250.00	N/A
320	19	16.5	290.00	N/A
330	8	7.0	319.00	N/A
340	15	13.0	328.00	N/A
350	7	6.1	366.00	N/A
360	5	4.3	408.00	N/A
370	3	2.6	430.00	N/A
380	2	1.7	480.00	N/A
390	2	1.7	516.00	N/A
400	2	1.7	557.50	N/A

Table 8. Catch composition of black crappie from Waha Lake, September 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	11	23.9	45.00	110
150	27	58.7	55.60	109
160	7	15.2	70.00	111
170	1	2.2	82.00	107

Table 9. Catch composition of yellow perch from Waha Lake, September 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	1	0.3	4.00	136
70	0	0.0		
80	0	0.0		
90	1	0.3	9.00	90
100	4	1.1	12.25	88
110	2	0.6	25.00	134
120	31	8.5	24.20	99
130	104	28.7	30.60	98
140	78	21.5	40.00	102
150	43	11.8	39.00	80
160	43	11.8	49.80	83
170	29	8.0	67.75	94
180	12	3.3	72.75	84
190	13	3.6	86.67	85
200	1	0.3	102.00	85
210	0	0.0		
220	1	0.3	145.00	89

Table 10. Catch composition of largemouth bass from Winchester Lake, May 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
100	1	0.4	15.00	110
110	17	6.9	21.00	115
120	31	12.6	28.00	118
130	53	21.5	35.00	115
140	36	14.6	44.00	115
150	30	12.2	55.00	117
160	17	6.9	68.00	118
170	7	2.8	81.00	117
180	1	0.4	98.00	118
190	2	0.8	110.00	112
200	0	0.0		
210	0	0.0		
220	0	0.0		
230	1	0.4	210.00	118
240	2	0.8	240.00	118
250	8	3.3	259.00	112
260	5	2.0	267.00	102
270	6	2.4	326.00	111
280	3	1.2	330.00	100
290	8	3.3	404.00	110
300	6	2.4	450.00	110
310	3	1.2	566.25	125
320	1	0.4	600.00	120
330	0	0.0		
340	1	0.4	750.00	124
350	1	0.4	800.00	121
360	1	0.4	840.00	116
370	1	0.4	840.00	106
380	2	0.8	1225.00	143
390	0	0.0		
400	1	0.4	1250.00	124
410	0	0.0		
420	0	0.0		
430	1	0.4	1800.00	142

Table 11. Catch composition of black bullhead from Winchester Lake, June 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	0	0.0		
170	0	0.0		
180	0	0.0		
190	0	0.0		
200	0	0.0		
210	0	0.0		
220	2	3.5		
230	2	3.5		
240	0	0.0		
250	6	10.5		
260	7	12.3		
270	19	33.3		
280	17	29.8		
290	1	1.8		
300	2	3.5		
310	0	0.0		
320	0	0.0		
330	0	0.0		
340	0	0.0		
350	0	0.0		
360	0	0.0		
370	0	0.0		
380	1	1.8		

Table 12. Catch composition of black crappie from Winchester Lake, June 19, 1997.

Length range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	1	1.1	10.00	101
100	5	5.4	14.00	101
110	14	15.2	19.00	101
120	13	14.1	25.00	100
130	10	10.9	32.00	99
140	4	4.3	42.00	103
150	14	15.2	52.00	102
160	12	13.0	63.00	100
170	3	3.3	76.00	99
180	1	1.1	92.00	100
190	0	0.0		
200	7	7.6	130.00	100
210	5	5.4	155.00	101
220	3	3.3	180.00	101

Table 13. Catch composition of yellow perch from Winchester Lake, June 19, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	3	2.9	50.00	102
160	4	3.8	60.00	100
170	13	12.4	73.00	101
180	29	27.6	88.00	102
190	16	15.2	101.00	99
200	12	11.4	122.00	101
210	14	13.3	140.00	100
220	12	11.4	162.00	100
230	2	1.9	190.00	101

Table 14. Elk Creek Reservoir standard survey findings of fish community characteristics September 11, 1997.

Catch per unit of combined gear sampling effort					
Species	Length Range (mm)	Number	Percent	Weight (kg)	Percent
Game Fish					
Brook trout	200-290	19	6.0	3.30	8.5
Rainbow trout	210-380	53	16.7	11.20	28.9
Largemouth bass	50-340	17	5.4	1.38	3.6
Smallmouth bass	50-290	107	33.8	8.95	23.1
Black crappie	50-220	14	4.4	0.65	1.7
Bluegill sunfish	60-150	6	1.9	0.24	0.6
Pumpkinseed	50-150	39	12.3	1.30	3.3
Black bullhead	160-300	61	19.2	11.77	30.3
Sub-total		**316**	**99.7**	**38.79**	**99.95**
Non-game fish					
Redside shiner		1	0.03	0.02	0.05
Total		**317**	**100**	**38.81**	**100**

Table 15. Catch composition of smallmouth bass from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per Unit effort	Percent Of Sample	Mean weight (grams)	Relative weight
50	4	3.7	2.00	93
60	2	1.9	6.00	167
70	0	0.0		
80	0	0.0		
90	3	2.8	16.67	146
100	8	7.5	23.60	152
110	11	10.3	37.00	180
120	5	4.7	27.80	105
130	13	12.1	31.80	95
140	8	7.5	46.20	111
150	1	0.9	64.00	125
160	4	3.7	58.75	95
170	4	3.7	78.00	105
180	8	7.5	81.20	93
190	6	5.6	100.20	97
200	4	3.7	112.50	94
210	3	2.8	135.00	97
220	4	3.7	136.67	86
230	6	5.6	188.40	103
240	5	4.7	191.75	93
250	5	4.7	208.50	89
260	0	0.0		
270	1	0.9	240.00	81
280	1	0.9	260.00	79
290	1	0.9	365.00	100

Table 16. Catch composition of black bullhead from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent Of Sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	1	1.6	45.00	N/A
170	1	1.6	105.00	N/A
180	1	1.6	100.00	N/A
190	5	8.2	146.60	N/A
200	12	19.7	133.00	N/A
210	8	13.1	159.00	N/A
220	7	11.5	169.00	N/A
230	7	11.5	197.00	N/A
240	11	18.0	232.00	N/A
250	2	3.3	247.50	N/A
260	3	4.9	281.67	N/A
270	0	0.0		
280	0	0.0		
290	1	1.6	470.00	N/A
300	2	3.3	495.50	N/A

Table 17. Catch composition of rainbow trout from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent Of Sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	0	0.0		
170	0	0.0		
180	0	0.0		
190	0	0.0		
200	0	0.0		
210	4	7.4	102.00	93
220	3	5.6	135.00	107
230	6	11.1	132.40	92
240	6	11.1	156.80	97
250	2	3.7	176.67	97
260	7	13.0	184.40	90
270	2	3.7	268.33	117
280	2	3.7	227.50	89
290	4	7.4	241.00	85
300	4	7.4	293.33	94
310	4	7.4	284.00	83
320	4	7.4	343.75	91
330	1	1.9	440.00	106
340	2	3.7	444.00	98
350	2	3.7	460.00	94
360	0	0.0		
370	0	0.0		
380	1	1.9	530.00	85

Table 18. Catch composition of pumpkinseed sunfish from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	1	2.6	3.00	120
60	0	0.0		
70	7	17.9	7.50	107
80	11	28.2	13.20	125
90	6	15.4	21.00	137
100	0	0.0		
110	1	2.6	38.00	132
120	2	5.1	52.50	138
130	3	7.7	53.33	109
140	4	10.3	73.00	118
150	4	10.3	96.00	124

Table 19. Catch composition of brook trout from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	0	0.0		
170	0	0.0		
180	0	0.0		
190	0	0.0		
200	1	5.3	90.00	94
210	1	5.3	100.00	91
220	2	10.5	125.00	99
230	1	5.3	123.00	86
240	4	21.1	155.00	95
250	2	10.5	186.00	102
260	4	21.1	199.00	97
270	2	10.5	220.00	96
280	1	5.3	220.00	86
290	1	5.3	260.00	92

Table 20. Catch composition of largemouth bass from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	7	38.9	2.00	116
60	3	16.7	2.50	85
70	1	5.6	5.00	108
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	3	16.7	37.67	124
140	0	0.0		
150	0	0.0		
160	0	0.0		
170	0	0.0		
180	0	0.0		
190	1	5.6	110.00	112
200	0	0.0		
210	0	0.0		
220	0	0.0		
230	1	5.6	160.00	90
240	0	0.0		
250	0	0.0		
260	0	0.0		
270	0	0.0		
280	0	0.0		
290	0	0.0		
300	1	5.6	375.00	92
310	0	0.0		
320	0	0.0		
330	0	0.0		
340	1	5.6	590.00	97

Table 21. Catch composition of black crappie from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent of sample	Mean weight (grams)	Relative weight
50	2	14.3	1.00	63
60	0	0.0		
70	1	7.1		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	3	21.4	22.33	119
120	2	14.3	31.50	127
130	3	21.4	40.00	124
140	1	7.1	58.00	142
150	0	0.0		
160	0	0.0		
170	0	0.0		
180	0	0.0		
190	0	0.0		
200	1	7.1	150.00	115
210	0	0.0		
220	1	7.1	190.00	107

Table 22. Catch composition of bluegill sunfish from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per unit effort	Percent Of Sample	Mean weight (grams)	Relative weight
50	0	0.0		
60	1	16.7	5.00	115
70	1	16.7	9.00	129
80	2	33.3	13.00	123
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	2	33.3	99.00	128

Table 23. Catch composition of redside shiner from Elk Creek Reservoir, September 11, 1997.

Length Range (mm)	No. per Unit effort	Percent of Sample	Mean Weight (grams)	Relative weight
50	0	0.0		
60	0	0.0		
70	0	0.0		
80	0	0.0		
90	0	0.0		
100	0	0.0		
110	0	0.0		
120	0	0.0		
130	0	0.0		
140	0	0.0		
150	0	0.0		
160	1	100.0	22.00	2200

Tolo Lake

Tolo Lake was drained and dredged in 1995 to enhance fishery and waterfowl habitat. After refilling in 1996, the lake was stocked with 200 white crappie *P. annularis*, 181 largemouth bass, 159 bluegill sunfish, and 32 black crappie. Tolo Lake also receives catchable rainbow trout on regular intervals. A standard lake survey was conducted on July 8, 1997 to evaluate stock structure and reproduction after the first winter. A total of 13 fish were sampled. Of these, 53.9% were white crappie, 23.1% catchable rainbow, 15.4% largemouth bass, and 7.7% black crappie. An 80 mm white crappie was sampled, indicating that this species reproduced in the lake. Length frequency of fish sampled is given in Table 24.

Table 24. Tolo Lake standard survey findings, July 8, 1997

Species	L (mm)	W (g)	Sample Method
White crappie	80		trapnet
	255		trapnet
	255	250	electrofish
	255	280	electrofish
	260	250	electrofish
	260	270	electrofish
	350	670	electrofish
Black crappie	220	160	electrofish
Largemouth bass	185	70	Floating gill net
	245	200	Floating gill net
Rainbow trout	NA	NA	Floating gill net

Fish community survey procedures and guidelines.

LOWLAND LAKES AND RESERVOIRS
STANDARD FISH COMMUNITY SURVEY PROCEDURES, CORE DATA, AND REPORT GUIDELINES

I. Surveys will be conducted using the following gear:

A. Gill nets

Floating and sinking monofilament nets, 150' x 6', with six panels composed of 3/4", 1", 1-1/4", 2", and 2-1/2" bar mesh. One floating and one sinking net combined fished overnight equals one unit of gill net effort.

B. Trap Nets

75' lead, 3' x 6' frame, crowfoot throats on first and third of five hoops, 3/4" bar mesh, treated black. One trap net fished overnight equals one unit of trap net effort.

C. Electrofishing

A pulsed D.C. electrofishing boat with boom-mounted electrodes. One hour of current-on electrofishing equals one unit of electrofishing effort.

II. Surveys will be conducted using the following procedures:

A. Effort

Due to the selectivity of individual gear types, a combination of gill netting, trap netting, and electrofishing effort will be used to characterize the fish community. One unit of effort for each of the gear types combined, equals one unit of sampling effort. The following table provides for the minimum amount of sampling effort and survey time needed for various size waters:

Lake Size (acre)	*Units of Sampling Effort	Nights Needed
1-25	1	1
26-100	2	1
101-500	4	1-2
501-1000	6	2
**1000+	6+	2-3+

*one unit of sampling effort includes a pair of floating and sinking gill nets and one trap net fished overnight and one hour of electrofishing.

**use best judgement on sampling effort needed to sample various habitat zones.

1997 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management

Project 1: Surveys and Inventories Subproject 1-B: Clearwater Region

Job: c Title: Rivers and Streams Investigations

Contract Period: July 1, 1997 to June 30,1998

ABSTRACT

Clearwater region fishery management personnel snorkeled or coordinated data collection for 141 stream transects within the Clearwater, Salmon and Snake river drainages to obtain data for the long-term database. Chinook salmon *Oncorhynchus tschawytscha* juvenile numbers continued to be at low levels throughout the drainages sampled. Ninety-two adult chinook salmon redds were counted in traditional aerial spawning ground counts in the Lochsa and Selway rivers, and 241 were counted in the South Fork Clearwater drainage. Management personnel captured and PIT tagged 26 white sturgeon *Acipenser transmontanus* from the Snake River. We sampled 20 rainbow trout *O. mykiss* from the lower Clearwater River and found no fish in diet analysis. We collected 25 rainbow trout in an estimated 181 hours of angling effort on the Salmon River. Residualized hatchery steelhead smolts represented 29.0 percent of the sample and stocked fingerling trout accounted for 18 percent of the sample. No fish or fish parts were identified in the contents of 16 hatchery origin trout stomachs. We collected 180 westslope cutthroat trout *O. clarki lewisi* in the mainstem North Fork Clearwater River from Aquarius (rkm 104.4) up to Kelly Forks (rkm 184.5) using traditional hook and line techniques. We tagged 159 of these cutthroat jaw tags. Nine cutthroat trout were reported recaptured by anglers. We counted 144 kokanee *O. nerka* spawners in three index tributaries of the North Fork Clearwater River. This represents the lowest count since trend counts began in 1981 and less than one percent of the average count from the previous nine years. Clearwater Region fisheries personnel and conservation officers checked 329 anglers that spent 495 hours to catch 370 game fish from regional rivers and streams. This represents an average catch rate of 0.75 fish per hour.

Authors:

Ed Schriever
Regional Fishery Biologist

Jody Brostrom
Regional Fishery Biologist

Tim Cochnauer
Regional Fishery Manager

OBJECTIVES

1. Develop long-term fish population database on selected streams throughout the Clearwater Region.

2. PIT tag white sturgeon *Acipenser transmontanus* in the Snake River below Hells Canyon Dam and the Salmon River below Riggins.

3. Assess diet of hatchery rainbow trout *Oncorhynchus mykiss* and residualized hatchery steelhead trout smolts in the Snake, Salmon and Clearwater River drainages.

4. Allocate hatchery rainbow trout in regional streams.

5. Collect miscellaneous creel census information from various streams throughout the region.

SALMONID POPULATION TREND MONITORING

Methods

We used standard snorkeling techniques to monitor fish densities at established monitoring sites in regional rivers and streams. Snorkeling was conducted in late summer when stream flows were low, clear and accessible. Small streams were snorkeled upstream with one to three observers depending on stream width. Larger streams and river corridors were snorkeled either upstream or free-floating downstream with four to six observers, depending on corridor width and water depth. Population abundance is presented as fish per 100 m^2. In streams that research personnel regularly snorkel, we coordinated data collection and have summarized the information on this report.

We sampled rainbow trout and mountain whitefish *Prosopium williamsoni* in the Clearwater River using pulsed D.C. current from a portable generator and a Coffelt VVP-2E pulsator. Booms and electrodes were mounted on a 5.5-m aluminum boat. Sampling was conducted from April 20 to August 30, and occurred during daylight hours to avoid safety hazards.

Results

Selway River

Juvenile chinook salmon *O. tshawytscha* numbers remained low in the tributaries (Table 1) and mainstem river (Table 2). A total of 18 chinook salmon juveniles were observed in 19 tributary transects above Selway Falls, and 10 juvenile chinook salmon were counted in 4 tributary transects below Selway Falls. In nine mainstem transects 80 juvenile chinook salmon were observed. One adult chinook salmon was observed in Moose Creek. Aerial chinook salmon spawning ground counts in September revealed 18 redds, five in tributaries and the rest in the mainstem (Table 3).

A total of nine bull trout *Salvelinus confluentus* were observed in Deep Creek, East Fork Moose Creek, North Fork, Moose Creek, Little Clearwater River and White Cap Creek, and four were observed in the mainstem during snorkeling activities in July and August (Table 1). Nine juvenile coho salmon *Oncorhynchus kisutch*, re-introduced by the Nez Perce Tribe, were in Meadow Creek.

Historic snorkel comparisons are found in Appendix A.

Pettibone and Goat creeks were surveyed for baseline species abundance and composition August 2 and 3. One transect was randomly selected each kilometer. Steelhead were the most abundant species in both creeks (Table 4), followed by cutthroat trout *O. clarki*. No bull trout were observed.

Tables 5 through Table 10 depict historic relative numbers and sizes of cutthroat trout, steelhead trout, and mountain whitefish observed by snorkeling in mainstem transects.

Lochsa River

Fish densities (per 100 m^2) as determined by snorkeling 19 transects in the Lochsa River drainage are shown in Table 11. Nine chinook salmon juveniles were observed in the tributaries surveyed, and nine were seen in the mainstem. A total of six bull trout were observed, with two in Hopeful Creek and Fish Creek, and one each in Crooked Fork Creek and Fire Creek.

Adult hatchery chinook were observed in Crooked Fork Creek (3), Lochsa River (1) and Post Office Creek (2).

Historic snorkeling comparisons are found in Appendix A.

Chinook salmon aerial spawning ground counts revealed 80 redds in Crooked Fork, Brushy Fork and White Sand creeks (Table 12).

Table 1. Summary of fish densities (per 100 m^2) as determined by snorkeling the Selway River drainage, 1997.

			------Steelhead trout------					Cutthroat trout					
Stream	Date	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	Chinook salmon	Mountain whitefish	Bull trout	Coho salmon
Bear Creek, #1, at bridge	8/3	1.67	0	0.70	0.35	0.62	0.75	0.55	0.20	0	1.73	0	0
Bear Creek, #2, upper	8/3	0	0	0	0	0	0	0	0	0	0.08	0	0
Deep Creek, Cactus	7/30	5.39	0	4.28	1.11	0	0.48	0.48	0	0	0	0.16	0
Deep Creek, Scimitar	7/30	3.92	1.27	1.84	0.62	0.12	0	0	0	0	0	0.23	0
E.F. Moose Creek, #3	8/5	2.66	0	1.36	1.30	0	0.52	0.26	0.26	0	0.52	0	0
Gedney Creek, # 1	8/11	9.94	4.30	2.20	3.25	0.19	0.29	0.10	0.19	0.10	0.19	0	0
Gedney Creek, # 2	8/11	17.22	8.04	4.88	3.73	0.57	0.29	0	0.29	0.29	0.57	0	0
Little Clearwater R., #2, upper	7/30	3.35	0	1.59	1.41	0.35	0.18	0.18	0	0	0.18	0.18	0
Little Clearwater R., #1, lower	7/30	2.84	0.24	1.42	0.47	0.71	0	0	0	0	0	0.24	0
Marten Creek	8/7	13.97	0	3.57	7.80	2.60	0.32	0	0.32	0	0	0	0
Meadow Creek, # 1 Slims Camp	8/8	3.06	0	0.74	0.72	0.12	0.06	0.06	0	0.30	0.06	0	0.11
Meadow Creek, # 2	8/8	0.84	0.48	0.16	0.20	0	0.04	0.04	0	0.24	0.12	0	0.28
Moose Creek, #1, at mouth	8/5	4.78	0	1.87	2.46	0.45	1.22	1.16	0.06	0	1.68	0	0
Moose Creek, #2, at E.F. confluence	8/5	0.05	0	0.05	0	0	0	0	0	0	0.05	0	0
N.F. Moose Creek, #4	8/5	0.14	0	0	0.07	0.07	0.43	0.29	0.14	0	0.64	0.07	0
O'Hara Creek, #1, meadow	8/8	20.45	18.28	1.18	0.79	0.20	0	0	0	2.17	0	0	0
O'Hara Creek, #2, canyon	8/8	14.93	9.22	3.51	2.05	0.15	0	0	0	0.15	0	0	0
Otter Creek	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Running Creek, #1, lower	8/1	1.24	0.79	0	0	0.45	0.56	0.56	0	0	0.45	0	0
Running Creek, #2, upper	8/1	0.95	0	0.63	0.32	0	0.16	0.16	0	0	0	0	0
Selway R. at Magruder	7/31	0.66	0	0.25	0.37	0.04	0.25	0.25	0	0	0.33	0	0
Selway R. at Hell's-Half	7/31	1.62	0.08	0.54	0.77	0.23	0.39	0.31	0.08	0	0.23	0	0
Selway R. at Little Clearwater	7/31	0.86	0	0.20	0.46	0.20	0.33	0.26	0.07	0.59	0.20	0.07	0
Selway R. at Beaver Point	7/31	1.12	0.03	0.33	0.49	0.27	0.46	0.38	0.08	1.97	1.09	0.08	0
Three Links Creek	8/6	10.46	0	7.07	3.39	0	3.67	2.54	1.13	0	1.98	0	0
White Cap Creek, #1, lower	7/31	2.59	0	0.67	1.54	0.38	0.87	0.77	0.10	0	0.19	0.10	0
White Cap Creek, #2, middle	7/31	1.08	0	0.27	0.65	0.16	0.22	0.22	0	0.05	0.71	0	0
White Cap Creek, #3, upper	7/30	2.16	0.04	0.86	1.04	0.22	0.82	0.78	0.04	0.26	0.48	0.04	0

[1] Running Creek transects were snorkeled, but no measurements were taken.

Table 2. Number of fish counted in snorkel transects (5 snorkelers) in the unroaded mainstem Selway River, 1992-1997.

		Cutthroat trout		----Steelhead trout----						
Location	Year	<305 mm	>305 mm	Age 0	Age 1	Age 2	Age >2	Chinook salmon	Mountain whitefish	Bull trout
at Bad Luck Creek	1992	30	14	0	0	0	0	0	106	0
	1993	14	12	9	6	1	0	0	40	0
	1994	10	7	0	0	0	0	20	23	0
	1995	12	4	0	3	0	0	0	68	0
	1996	28	2	0	0	2	2	0	43	0
	1997	23	4	0	1	1	0	0	28	0
at North Star Creek	1992	22	2	0	0	0	0	0	56	0
	1993	28	5	0	0	0	0	0	45	0
	1994	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1995	13	5	0	0	0	0	0	46	0
	1996	23	4	0	0	0	0	0	028	0
	1997	19	7	6	0	0	0	0	53	0
at Osprey Island	1992	8	8	0	2	0	0	0	32	0
	1993	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1994	15	5	0	6	3	0	0	56	0
	1995	24	8	0	10	4	0	0	59	0
	1996	26	0	0	22	14	0	0	6	0
	1997	37	12	0	0	1	1	0	69	0
at Big Bend	1993	13	7	0	0	0	0	0	32	0
	1994	9	2	0	4	0	0	4	31	0
	1995	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1996	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1997	24	2	3	1	1	0	1	23	1
at Tango Creek	1992	15	26	0	16	9	0	14	50	0
	1993	28	1	3	32	2	0	0	26	0
	1994	28	8							0
	1995	29	3	0	9	2	1	0	35	0
	1996	19	4	0	1	1	0	0	28	0
	1997	23	4	0	4	6	1	0	62	0

Table 3. Chinook salmon spawning ground survey summary in the Selway River drainage, 1997.

Drainage	Reach	Type	Description	Date	Method	Redds	---Fish--- Live	Dead
White Cap Creek	WC-1	T	Mouth to Coopers Flat	9/2	Aerial	0	0	0
Bear Creek	WC-2	T	Mouth to Cub Creek	9/2	Aerial	2	1	0
Moose Creek	WC-3	T	Mouth to Cedar Creek	9/2	Aerial	3	0	0
Running Creek	WC-4	T	Mouth to two miles above Eagle Cr. and lower one mile of Eagle Cr.	9/2	Aerial	0	0	0
Selway Thompson	WC-5	T	Flat to Magruder RS	9/2	Aerial	1	1	0
Selway	WC-6	T	Magruder RS to Magruder Crossing	9/2	Aerial	0	0	0
Selway	WC-7	T	Magruder Crossing to Little Clearwater River	8/28 9/2	Ground Aerial	4 7	3 5	1 0
Selway	WC-8	T	Little Clearwater to White Cap Creek	9/2	Aerial	0	0	0
Selway	WC-9	T	White Cap Cr. to Bear Creek	9/2	Aerial	5	0	0
			Selway ground total			**4**	**3**	**1**
			Selway drainage aerial count total:			**18**	**7**	**0**

Table 4. Summary of fish densities (per 100 m^2) as determined by snorkeling in selected tributaries in the Selway River drainage, 1997.

			------Steelhead trout------						Cutthroat trout		Bull	Mountain	CTxRBT	All
	Date	Area (m2)	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305,,	trout	whitefish	trout	trout
Goat Creek, 1.1 km	8/3	275	1.45	0	0.36	1.09	0	0.36	0.36	0	0	0	0	1.81
Goat Creek, 1.4 km	8/3	768	2.47	1.82	0.65	0	0	0.39	. 039	0	0	0	0.13	2.99
Goat Creek, 2.2 km	8/3	365	17.26	0	12.05	4.66	0.55	0.82	0.55	0.27	0	0	0.82	18.90
Goat Creek, 3.7 km	8/3	621	1.61	0	1.13	0.48	0	0.16	0.16	0	0	0	0	1.77
Goat Creek, 3.9 km	8/3	456	2.63	0	1.97	0.66	0	2.19	2.19	0	0	0	0	4.82
Goat Creek, 4.3 km	8/3	259	3.09	0	0.77	2.32	0	2.32	2.32	0	0	0	0	5.41
Goat Creek, 4.7 km	8/3	320	1.25	0	0.63	0.63	0	0.94	0.94	0	0	0	0	2.19
Pettibone Creek, 2.8 km	8/3	330	6.96	2.12	2.72	1.82	0.30	0.30	0.30	0	0	0	0	7.26
Pettibone Creek, 3.8 km	8/3	281	9.62	0	6.41	3.21	0	0	0	0	0	0	0	9.62
Pettibone Creek, 4.9 km	8/3	471	2.97	0	2.76	0.21	0	0	0	0	0	0	0	2.97
Pettibone Creek, 5.2 km	8/3	439	4.56	0	4.10	0.46	0	0	0	0	0	0	0	4.56
Pettibone Creek, 6.9 km	8/3	425	5.41	1.18	3.76	0.47	0	0.24	0.24	0	0	0	0	5.65
Pettibone Creek, 7.2 km	8/3	416	12.25	0.48	9.37	2.40	0	0.72	0.72	0	0	0	0	12.97
Pettibone Creek, 8.0 km	8/3	308	14.94	0.65	12.34	1.95	0	0	0	0	0	0	0	14.94

Table 5. Percent of cutthroat trout by 50.8 mm (2 inch) size groups sampled in the Selway River by angling, 1975-1997.

Length (mm)	1975	1976	1977	1978	1980	1982	1984	1986	1988	1990	1992	1993	1994	1995	1996	1997
102 to 151	8.7	2.2	8.7	0.8	4.6	2.8	4.2	2.4	12.4	0.1	4.3	2.7	1.5	1.4	1.7	1.9
152 to 202	31.3	16.4	20.9	20.7	13.6	19.0	22.2	15.8	14.0	22.7	23.3	13.0	12.6	25.1	23.6	22.0
203 to 253	27.0	24.8	24.5	15.7	22.2	25.2	28.2	23.3	25.1	16.5	23.6	20.2	22.3	17.7	28.5	23.9
254 to 304	21.0	35.7	27.0	34.1	30.7	31.2	24.7	27.1	24.3	26.2	30.6	36.8	22.8	27.2	24.8	24.3
305 to 355	11.2	18.4	17.0	23.2	25.3	18.9	16.8	28.0	21.0	25.7	15.7	22.8	34.0	24.0	17.4	22.8
356 to 405	0.8	2.5	1.3	5.1	3.4	2.3	3.8	3.1	3.0	4.7	2.7	4.5	7.4	3.5	4.1	5.2
Over 405	0	0	0.6	0.4	0.2	0.6	0	0.3	0.2	0.5	0	0	0	<0.01	0	0
Number of cutthroat measured	233	238	229	470	352	549	429	322	506	816	301	377	215	283	242	268

Table 6. Comparison of cutthroat trout counted in snorkel transects (1 snorkeler) and cutthroat trout caught by angling in the Selway River between White Cap Creek and Race Creek, 1975-1997.

Year	Counted in snorkel transects		--------Caught by angling--------		
	Average no. of CT counted/ transect	Percent CT >305 mm in transects	Total no cutthroat measured	Average CT total length (mm)	Percent CT caught >305 mm
1997	13.6	14	268	257	29
1996	14.2	3	242	252	21.5
1995	11.2	3.2	28	254	28
1994	5.9	11	215	272	29
1992	5.4	28	301	251	18
1990	10.5	19	816	259	31
1988	17.1	22	506	249	24
1986	21.5	20	322	264	32
1984	18.3	23	429	249	21
1982	16.1	16	549	254	22
1980	17.0	14	352	264	29
1978	13.0	19	470	262	27
1977	15.4	20	229	241	19
1976	7.1	21	238	259	22
1975	5.7	13	233	239	12
1974	5.5	10	--	--	--
1973	4.4	18	--	--	--

[1]Extremely low flows

[2] Water too turbid from rain and fire debris to get accurate count in most transects. Number of transects = 8

Table 7. Percent of cutthroat trout over 305 mm (12 inches) counted in snorkel transects (1 snorkeler) in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-1997.

Stream section	1973	1974	1975	1976	1977	1978	1980	1982	1984	1986	1988	1990	1992	1994	1995	1996	1997
White Cap Creek to Running Creek	9.5	16.7	11.8	22.2	22.6	16.2	13.2	8.9	15.9	21.3	24.5	29.6	6.7	6.7	0	0	8.3
Running Creek to Bear Creek	11.1	8.3	18.2	16.2	21.5	20.8	11.8	10.7	20.7	14.6	22.4	15.9	25.5	11.1	0	0	11.3[1]
Bear Creek to Moose Creek	34.4	15.5	8.0	25.0	25.0	21.4	9.9	15.0	22.7	18.7	22.9	16.2	48.4	12.1	9.1	0	19.1
Weighted means: White Cap Creek to Moose Creek	18.9	12.7	13.0	20.6	21.8	22.3	11.5	12.0	20.6	17.8	23.2	15.6	32.9	10.8	0.8	0	13.3
Moose Creek to Halfway Creek	8.3	--	3.6	17.5	12.5	13.6	18.6	17.9	22.1	22.7	21.6	9.5	9.1	--	10.9	0	8.3
Halfway Creek to Three Links Creek	19.0	16.2	19.0	26.3	17.5	15.9	17.2	23.8	26.1	22.7	26.7	33.0	6.7	0	0	20	22.2
Three Links Creek to Jim's Creek	23.3	5.8	12.5	38.5	27.5	25.0	17.3	22.3	28.4	24.0	23.7	16.3	11.1	0	0	10	10.0
Jim's Creek to Race Creek	--	10.0	50.0	1.8	26.5	35.7	4.1	11.1	30.4	15.5	13.6	46.7	50.0	--	0	ND	20.0
Weighted means: Moose Creek to Race Creek	17.3	8.0	13.0	21.3	18.9	19.4	17.6	19.9	29.7	21.9	21.0	19.6	18.2	0	7.1	13.5	14.2

[1] Water too turbid to get accurate count
[2] Fish not broken into length groups

Table 8. Average number of cutthroat trout counted/snorkel transect (1 snorkeler) in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-1997.

Stream section	1973	1974	1975	1976	1977	1978	1980	1982	1984	1986	1988	1990	1992	1994	1995	1996	1997
White Cap Cr. to Running Cr.	4.2	3.4	6.8	7.2	10.8	7.4	13.2	11.2	11.0	15.2	13.3	6.8	4.8	7.5	13.0	10.7	6.0
Running Cr. to Bear Cr.	7.2	4.8	6.6	6.2	18.6	10.6	18.6	11.2	17.4	19.2	11.6	16.4	9.4	9.0	13.3	15.5	26.5
Bear Cr. to Moose Cr.	5.3	7.5	5.0	6.0	17.4	19.6	16.0	16.2	19.4	21.4	21.8	7.4	6.2	8.3	13.3	15.0	7.8
Weighted means: White Cap Cr.to Moose Cr.	5.6	5.2	6.1	6.5	15.4	12.5	16.2	12.8	16.3	18.8	15.7	10.4	6.9	8.3	13.2	13.6	13.8
Moose Cr. to Halfway Cr.	6.0	9.0	5.6	8.0	24.0	19.7	14.3	19.5	28.3	21.7	18.5	10.5	3.7	--	12.0	7.0	12.0
Halfway Cr. to Three Links Cr.	3.0	7.4	7.0	9.5	20.0	22.0	29.0	21.0	23.0	32.5	30.0	3.0	5.0	3.0	0.0	10.0	9.0
Three Links Cr. toJim's Cr.	5.0	4.3	8.0	6.5	11.0	16.0	22.0	23.5	18.5	34.7	20.0	12.3	3.0	6.0	5.7	30.0	12.5
Jim's Cr. to Race Cr.	--	2.5	1.2	5.7	7.5	3.5	12.3	18.0	14.0	14.5	14.8	11.0	3.0	--	7.0	ND	17.5
Weighted means: Moose Cr. to Race Cr.	3.6	5.9	5.3	7.4	15.3	13.8	18.0	21.1	20.5	24.3	18.7	9.9	3.7	4.5	8.8	15.6	13.3

[1] Water too turbid to get accurate count

Table 9. Average number of juvenile steelhead (<8 inches) counted/snorkel transect (1 snorkeler) in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-1997.

Stream section	1973	1974	1975	1976	1977	1978	1980	1982	1984	1986	1988	1990	1992	1994	1995	1996	1997
White Cap Cr. to Running Cr	1.2	1.1	5.0	4.0	0.8	3.6	5.0	7.4	10.5	5.5	3.8	4.0	3.7	3.8	9.3	11.6	2.0
Running Cr. to Bear Cr.	3.2	7.0	2.2	2.0	0.8	3.4	6.0	14.4	3.8	4.4	4.0	2.2	2.4	1.8	2.0	7.8	1.8
Bear Cr. to Moose Cr.	4.3	3.7	11.0	13.0	3.3	3.4	9.0	19.8	17.2	11.8	18.2	15.6	7.6	10.0	8.3	19.0	3.6
Weighted means: White Cap Cr.to Moose Cr.	2.7	2.6	7.7	5.7	1.9	2.6	5.9	11.1	14.3	7.1	9.1	8.4	4.7	5.2	6.6	10.6	2.8
Moose Cr. to Halfway Cr.	27.5	17.8	17.8	13.2	5.3	22.0	9.7	40.3	43.8	23.7	22.5	34.3	1.7	--	16.0	4.0	44.0
Halfway Cr. to Three Links Cr.	14.0	17.4	25.3	19.5	9.5	12.0	19.0	28.0	31.0	21.0	35.0	42.0	9.3	3.0	0.0	26.0	7.0
Three Links Cr. ToJim's Cr.	19.3	8.8	32.5	23.5	24.7	18.7	18.9	24.2	26.7	28.7	31.8	41.0	2.3	26.0	8.7	34.0	2.25
Jim's Cr. to Race Cr.	6.2	6.7	4.3	10.5	5.8	9.8	10.0	13.0	15.0	12.3	3.3	1.8	0.7	--	14.0	ND	0
Weighted means: Moose Cr. to Race Cr.	12.8	19.2	13.8	12.0	14.9	13.5	29.6	28.1	21.6	23.2	22.5	15.8	3.5	14.5	13.0	21.33	7.5

[1] Water too turbid to get accurate count

Table 10. Average number of whitefish counted/snorkel transect (1 snorkeler) in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-1997.

Stream section	1973	1974	1975	1976	1977	1978	1980	1982	1984	1986	1988	1990	1992	1994	1995	1996	1997
White Cap Cr. to Running Cr	35.2	31.1	8.4	17.8	32.8	9.4	15.8	18.8	23.2	22.2	17.3	22.8	15.0	20.5	12.0	13.0	5.0
Running Cr. to Bear Cr.	39.2	36.4	15.0	6.5	77.8	17.4	17.6	21.2	37.4	30.6	24.2	36.8	45.4	55.5	33.3	14.5	18.3
Bear Cr. to Moose Cr.	31.1	34.2	11.8	9.0	51.3	16.6	19.0	30.2	44.2	31.6	29.6	10.2	13.8	20.0	15.3	25.0	13.8
Weighted means: White Cap Cr.to Moose Cr.	34.9	33.9	11.7	10.9	44.9	12.1	17.6	23.4	35.8	28.6	24.1	21.7	25.4	32.0	17.9	15.25	13.8
Moose Cr. to Halfway Cr.	48.8	31.5	32.4	16.6	69.5	40.3	32.0	43.8	46.2	41.0	44.7	47.3	12.0	--	42.8	31.0	11.0
Halfway Cr. to Three Links Cr	17.7	31.4	27.0	16.0	65.0	67.0	27.0	47.0	60.0	38.5	70.0	12.0	10.0	19.0	0.0	7.0	0
Three Links Cr. To Jim's Cr.	23.8	19.0	41.0	19.5	49.7	46.0	38.3	59.0	50.0	50.7	35.0	27.3	9.0	5.0	11.0	17.0	9.25
Jim's Cr. to Race Cr.	5.2	16.8	18.7	2.0	41.0	20.5	20.0	21.0	32.5	19.7	22.3	8.8	9.0	--	5.0	ND	15.5
Weighted means: Moose Cr. to Race Cr.	23.0	21.5	29.3	13.3	50.4	39.6	28.8	47.9	44.2	35.9	36.8	26.5	13.1	12.0	26.1	18.3	9.9

[1] Water too turbid to get accurate count
[1] The one transect in this section is included in Moose toTango

Table 11. Summary of fish densities (per 100 m^2) as determined by snorkeling in the Lochsa River drainage, 1997.

			---------Steelhead trout----------					Cutthroat trout		Chinook	Mountain	Bull
Stream	Date	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	salmon	whitefish	trout
Brushy Fork Creek, #1	8/16	2.62	0.0	1.31	1.31	0	0.15	0.15	0	0	0.44	0
Brushy Fork Creek, #2	8/16	1.68	0.09	0.53	1.06	0	0.09	0.09	0	0.09	0.09	0
Colt Creek	8/17	0.67	0	0.67	0	0	3.35	3.35	0	0	0	0
Crooked Fork Creek, #1	8/15	1.00	1.00	0	0	0	0	0	0	0	0.11	0
Crooked Fork Creek, #2	8/15	1.26	0	0.63	0.63	0	0.36	0.36	0	0	0.27	0
Crooked Fork Creek, #4A	8/7	0	0	0	0	0	2.49	2.49	0	0	0	0
Crooked Fork Creek, #1B	8/14	2.20	0	0.29	1.91	0	0.15	0.15	0	0.15	1.47	0
Crooked Fork Creek, #2B	8/14	4.27	3.24	0.73	0.30	0	0.18	0.18	0	0.18	0.45	0.03
Fire Creek, #1, lower	8/6	10.26	0.41	6.77	2.26	0.82	0	0	0	0	0	0.21
Fire Creek,#2, upper	8/6	14.03	3.40	7.44	2.34	0.85	0.21	0.21	0	0	0	0
Fish Creek, #1, lower	7/28	27.41	20.71	3.17	2.80	0.73	0	0	0	0	0.12	0.12
Fish Creek, #2, upper	7/28	19.18	7.17	6.58	5.41	0.15	0.29	0.29	0	0	0.73	0.15
Hopeful Creek	8/7	0	0	0	0	0	3.85	3.85	0	0	0	0.27
Lochsa River, #4, at Papoose Creek	8/9	0.03	0.03	0	0	0	0.57	0.15	0.42	0.05	0.80	0
Lochsa River, #3, at Warm SpringCreek	8/9	0.24	0.17	0	0.04	0.03	0.39	0.18	0.21	0.01	0.39	0
Lochsa River, #1, at Fish Creek	8/9	0.10	0.02	0.05	0.03	0	0.17	0.09	0.08	0.06	0.20	0
Lochsa River, #2,at Pete King Creek	8/8	0	0	0	0	0	0.003	0	0.003	0	0.13	0
Old Man Creek	8/6	2.42	0.20	0.81	1.21	0.20	0.81	0.81	0	0	0.61	0
Post Office Creek, #1, lower	8/7	0.45	0	0	0.45	0	4.94	4.94	0	0	0	0

Table 12. Chinook salmon redd counts on three tributaries of the upper Lochsa River, 1997.

Drainage	Reach	Type[1]	Description	Date	Method	Redds	-------Fish------- Live	Dead
Crooked Fork	NC-9	NT	Mouth to Hopeful Creek	9/6	Aerial	39	20	1
	NC-10	T	Rock Creek to Cliff Hole	8/26	Ground	47	40	21
Brushy Fork	NC11	T	Low Gap Bridge to one mile downstream	8/27	Ground	30	9	28
	NC12	T	Mouth to Spruce Creek	9/6	Aerial	36	2	3
White Sands	NC13	NT	Mouth to Big Flat Creek	9/6	Aerial	5	1	0
					Lochsa Drainage Aerial Total	**80**		
					Lochsa Drainage Ground Total	**77**		

[1]NT = non-traditional transect, T = traditional transect

Snake River

No chinook salmon juveniles or bull trout were observed while snorkeling two Snake River tributaries (Table 13). One adult chinook was observed in Granite Creek, and two adult hatchery chinook were seen in Sheep Creek. Historic snorkeling comparisons are found in Appendix A.

Salmon River

Nine tributaries of the lower Salmon River were surveyed by snorkeling in 1997 (Table 14). Four juvenile chinook salmon were found in Race Creek (1) and Sheep Creek (3). Bull trout were observed in Bargamin Creek (2) and Big Mallard Creek (3). Two sites were established in Big Mallard Creek to begin collecting trend information. Historic snorkeling information is found in Appendix A.

North Fork Clearwater River

Fisheries management personnel snorkeled 12 streams in this drainage as a continuation of surveys initiated in 1993. Rainbow trout were the most abundant fish observed (Table 15). Bull trout were found in Isabella, and Skull creeks.

Clearwater Region Fisheries personnel and volunteers collected 180 westslope cutthroat trout in the mainstem North Fork Clearwater River from Aquarius (rkm 104.4) up to Kelly Forks (rkm 184.5) using traditional hook and line techniques (Figures 1-3). We sampled on June 24, 25, and 26, July 15, 16, and 17, and September 15 and 16. We tagged 159 of these cutthroat with numbered size 6 and 8 metal jaw tags. We recorded; date, tag number, tagging location (rkm) and total length of fish.

Nine cutthroat trout were reported recaptured, all by anglers. Three of the recaptured fish had moved into Black Canyon, traveling between 32 and 43 kilometers from where they were tagged. Two others had moved into tributaries. The other four cutthroat were recaptured within 5 kilometers of the location they were tagged.

Clearwater River

Four tributaries were snorkeled in the drainage. Steelhead trout were the most abundant species observed (Table 16). Two juvenile coho salmon, outplanted by the Nez Perce Tribe, were observed in Mission Creek. Historic snorkeling information is found in Appendix A.

Twenty-five species were electroshocked in the North Fork Clearwater River below Dworshak Dam and in the mainstem Clearwater River below the North Fork Clearwater River mouth (Cochnauer and Putnam 1997). Length frequencies of the ten most common species are shown in Figures 4-13. Fourteen bull trout *S. confluentus*, ranging from 150 mm to 590 mm, were sampled (Figure 5). Over 2,800 mountain whitefish *P. williamsoni* were sampled (Figure10). Sixty-six wild rainbow trout, 150-600 mm, were sampled (Figure 13).

Table 13. Summary of fish densities (per 100 m^2) as determined by snorkeling in the Snake River drainage, 1997.

			----------Steelhead trout----------					---Cutthroat trout---		Chinook	Mountain	Bull
Stream	Date	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	salmon	whitefish	trout
Granite Creek, #1, lower	8/12	8.53	1.12	2.25	2.53	2.53	0	0	0	0	0	0
Granite Creek, #2, middle		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Granite Creek, #3, upper	8/12	8.01	0.28	3.31	2.76	1.66	0.83	0.83	0	0	0	0
Sheep Creek, #1, lower	8/11	19.40	0.81	3.23	6.87	8.49	0.81	0.40	0.40	0	0	0
Sheep Creek, #2, upper	8/11	14.25	0.37	6.21	4.75	2.92	0	0	0	0	0	0

Table 14. Summary of fish densities (per 100 m^2) as determined by snorkeling in the Lower Salmon River drainage, 1997

			----------Steelhead trout----------					---Cutthroat trout---		Chinook	Mountain	Bull
Stream	Date	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	salmon	whitefish	trout
Bargamin Creek, #1, lower	7/23	4.16	0.18	1.72	1.90	0.36	0	0	0	0	0.18	0
Bargamin Creek, #2, upper	7/23	6.22	0	2.42	2.30	1.50	0.35	0.12	0.23	0	1.04	0.23
Big Mallard Creek, #1, lower	7/23	13.25	5.75	5.25	1.50	0.75	0.25	0.25	0	0	0	0.50
Big Mallard Creek, #2, upper	7/23	9.65	4.31	3.28	1.85	0.21	0	0	0	0	0	0.21
Crooked Creek, #1, lower	7/22	4.48	2.52	1.45	0.34	0.17	0.51	0.51	0	0	0.85	0
Crooked Creek, #2, upper	7/22	4.35	2.84	0.93	0.41	0.17	0.12	0.12	0	0	1.04	0
Jersey Creek	7/23	21.33	7.37	10.86	3.10	0	0	0	0	0	0	0
John Day Creek, #1, lower	7/24	17.26	3.45	10.36	3.45	0	0	0	0	0	0	0
John Day Creek, #2, upper	7/24	15.92	0	11.68	2.12	2.12	0	0	0	0	0	0
Race Creek	7/24	10.53	4.29	3.51	2.73	0	0	0	0	0.39	0	0
Sheep Creek, #1, lower	7/22	4.41	0.44	2.54	0.55	0.88	0.11	0	0.11	0.33	0.44	0
Sheep Creek, #2, upper	7/22	4.69	1.65	0.28	2.07	0.69	0.14	0	0.14	0	0.83	0
Skookumchuck Creek, #1, lower	7/24	8.74	0.55	3.82	4.37	0	0	0	0	0	0	0
Skookumchuck Creek. #2, upper	7/22	13.18	1.55	8.53	3.10	0	0	0	0	0	0	0
S.F. White Bird Creek, #2	7/25	34.74	13.90	16.62	3.62	0.60	0	0	0	0	0	0
S.F. White Bird Creek, #3	7/25	17.27	2.88	11.92	2.47	0	0	0	0	0	0	0
White Bird Creek, #1	7/25	24.05	6.19	14.53	3.33	0	0	0	0	0	0	0

Table 15. Summary of snorkeling observations (fish/100 m^2) in North Fork Clearwater River drainage, 1997.

Stream – Year	Area (m^2)	------Rainbow Trout------				------Cutthroat------		Bull trout	Mountain whitefish	Brook trout
		Age 0	Age 1	Age 2	Age >2	<305 mm	>305 mm			
Beaver Creek #1										
1994	156	0	7.70	1.93	0	0	0	0	0	0
1995	236	6.36	2.54	0.42	0	0	0	0	0	0
1996	331	2.42	2.72	2.42	3.02	0	0	0	0	0
1997	260	0	0	0	0	0.77	0	0	0	0
Beaver Creek #2										
1994	324	0	2.47	1.24	0	0	0	0	0	0
1995	236	0	0	0	0	0	0	0	0	0
1996	231	0	0.87	0.43	0	0	0	0	0	0
1997	260	0	0.70	3.50	0.70	0	0	0	0	0
Collin's Creek #1										
1994	226	0	2.65	2.65	0	0	0	0	0	0
1995	265	9.43	2.64	1.89	0	0	0	0	0	0
1996	296	1.35	2.70	2.36	0.68	0.68	0	0	0	0
1997	225	0	0	0	0	1.33	0	0	0	0
Collin's Creek #2										
1994	186	0	7.52	2.14	0	0	0	0	0	0
1995	312	0.96	1.28	1.92	0	0	0	0	0	0
1996	339	2.95	5.61	2.66	2.36	0	0	0	0	0
1997	238	0	0	0	0	0	0	0	0	0
Collin s Creek #3										
1994	156	0	7.70	1.93	0	0	0	0	0	0
1995	236	6.36	2.54	0.42	0	0	0	0	0	0
1996	331	2.42	2.72	2.42	3.02	0	0	0	0	0
1997	260	0	0	0	0	0.77	0	0	0	0
Freanch Creek #1										
1994	171	0	0.58	0	0	0	0	0	0	0
1995	210	0	2.38	0	0.48	0	0	0	0	0
1996	198	0.50	0	0	0	0	0	0	0	0
1997	235	0	1.28	1.28	1.70	0	0	0	0	0
French Creek #2										
1994	79	0	0	3.78	0	0	0	0	0	0
1995	109	0	2.74	0.91	0	0.91	0	0	0	0

Table 15. continued

Stream – Year	Area (m^2)	------Rainbow Trout------				------Cutthroat------		Bull trout	Mountain whitefish	Brook trout
		Age 0	Age 1	Age 2	Age >2	<305 mm	>305 mm			
French Creek #3										
1994	90	0	0	3.34	0	0	0	0	0	0
1995	79	0	2.53	1.26	0	3.79	0	0	0	0
1996	78	5.10	0	0	0	0	0	0	0	0
1997	79	0	7.59	0	0	0	0	0		
Hemlock Creek #1										
1994	145	0	3.46	1.38	0	0	0	0	0	0
1995	161	0	3.10	1.24	0	1.24	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	154	0	0	0	0	0	0.65	0	0	0
Hemlock Creek #2										
1994	60	0	1.67	1.67	0	0	0	0	0	0
1995	206	0	0.97	0.49	0	4.37	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	372	0	0	0	0	0.27	0.27	0	0	0
Hemlock Creek #3										
1994	141	0	8.53	2.13	0.71	0	0.71	0	0	0
1995	138	1.45	2.90	0	2.90	1.45	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	293	0	0	0	0	0.68	0.34	0	0	0
Hemlock Creek L										
1993	107	0	8.39	4.66	0	0.93	0.93	0	1.86	0
1994	48	0	8.29	20.7	2.07	0	0	0	0	0
1995	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hemlock Creek #4										
1993	331	0.60	1.81	0.91	0.31	0	0	0	0	0
1994	156	0	5.75	2.56	1.91	2.56	0.64	0	0	0
1995	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isabella Creek #1										
1994	109	0	11.91	5.50	0	0	0	0	0	0
1995	131	1.53	3.05	0	0	0	0	0.76	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	166	0	1.20	0	0.60	0	0	0.60	0	0
Isabella Creek #2										
1994	100	1.00	7.02	4.01	0	0	0	0	0	0
1995	90	5.56	2.22	0	0	2.22	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	92	0	2.17	0	0	2.17	0	0	0	0
Isabella Creek #3										
1994	40	0	12.64	0	0	0	0	0	0	0
1995	98	7.14	22.45	4.08	0	0	0	1.02	1.02	0
1996	44	2.30	0	2.30	0	0	0	2.30	2.30	0
1997	92	0	2.17	1.08	1.08	1.08	0	0	1.08	0

Table 15. continued

Stream – Year	Area (m^2)	------Rainbow Trout------				------Cutthroat------		Bull trout	Mountain whitefish	Brook trout
		Age 0	Age 1	Age 2	Age >2	<305 mm	>305 mm			
Isabella Creek #4										
1994	99	0	6.06	3.03	1.01	0	2.02	0	0	0
1995	202	1.98	43.56	0	0	0	0	0	0	0
1996	68	2.95	8.86	4.43	2.95	0	0	0	0	0
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Little Moose Creek #1										
1994	181	0	2.21	3.32	0.55	0	0	0	0	0
1995	280	0	0.71	1.43	0.71	0.71	0	0	0	0
1996	222	0.45	0.90	0	0	0	0.45	0	0	0
1997	222	0	1.80	1.80	0.45	1.35	0.45	0	2.70	0
Little Moose Creek #2										
1994	191	0	2.09	2.62	0	0	0	0	0	0
1995	124	0	4.00	0.80	0	2.40	0	0	0	0
1996	237	0	0	0.84	0	1.26	0	0	0	0
1997	178	019971	0	1.69	0	2.81	0	0	0	0
Little Moose Creek #3										
1994	122	0	2.47	4.12	0	0	0.82	0	0	0
1995	125	0	0	0	0	8.79	0	0	0	0
1996	135	0	4.45	7.41	0	11.12	0	0	0	0
1997	110	0	4.55	2.73	0	3.64	0	0	0	0
Little Weitas Creek - L										
1993	180	3.34	3.34	0	0	0.56	0	0	0	0
1994	152	5.26	1.31	0	0	0.66	0	0	0	0
1995	193	1.03	1.04	1.04	0	0	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	519	0	0	0.19	0.19	0	0	0	0.58	0
Little Weitas Creek - U										
1993	205	0.49	5.37	0	1.47	1.47	0	0	0	0
1994	173	4.62	1.15	1.73	0	0	0	0	0	0
1995	191	0	0	0	0	0	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	249	0.80	0	0.40	0	0.40	0	0	0	0
Middle Creek #1										
1994	169	0	12.99	5.90	0	3.54	0	0	0	0
1995	179	0	0	0	0	1.67	0	0	0	0
1996	189	0	0	0	0	1.06	0	0	0	0
1997	370	0	3.51	1.35	0.27	0.27	0	0	0	0
Middle Creek #2										
1994	123	0	4.88	0.81	0	0	0	0	0	0
1995	120	0	1.68	0	0	5.85	0	0	0	0
1996	126	0	0.79	0.79	0	9.51	0	0	0	0
1997	106	0	6.60	2.83	0	0.94	0	0	0	0
Middle Creek #3										
1994	70	1.42	5.70	2.85	0	0	0	0	0	0
1995	30	0	10.12	0	0	16.86	0	0	0	0
1996	84	0	2.38	0	0	0	0	0	0	0
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 15. continued

Stream – Year	Area (m^2)	------Rainbow Trout------				------Cutthroat------		Bull trout	Mountain whitefish	Brook trout
		Age 0	Age 1	Age 2	Age >2	<305 mm	>305 mm			
Middle Creek - L										
1993	58	0	5.19	0	0	1.73	0	0	0	0
1994	83	0	0	0	0	0	0	0	0	0
1995	80	0	0	0	0	2.51	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Middle Creek - U										
1994	78	2.56	2.56	0	0	0	0	0	0	0
1995	94	1.07	0	0	0	0	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Orogrande Creek #1										
1994	111	0	0	0	0	0	0	0.90	0	0
1995	99	0	0	0.21	0	0	0	0	0	0
1996	160	0	0	0	0	0	0	0	0	0
1997	137	0	0	0	0	0	0	0	0	2.19
Orogrande Creek #2										
1994	162	0	3.09	0	0	0	0	0.62	0.62	0
1995	73	2.75	2.75	0	1.38	0	0	0	0	0
1996	112	0	1.78	0	0	0.89	0	0	0	0.89
1997	139	0	0	1.44	0	0	0	0	0	2.16
Orogrande Creek #3										
1994	184	0	0.54	0	0	0	0	0	0	0
1995	58	0	1.73	0	0	0	0	0	0	0
1996	90	0	0	0	0	0	0	0	0	1.11
1997	85	0	0	0	0	0	0	0	0	2.35
Quartz Creek #1										
1994	142	1.41	2.11	0	0	0	0	0	0	0
1995	140	1.43	1.43	1.43	0	0	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Quartz Creek #2										
1994	144	0.70	6.27	1.39	0	0	0	0	0	0
1995	136	2.21	4.41	0	0	0	0	0	0	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ruby Creek										
1994	74	1.36	1.36	0	0	0	0	0	0	0
1995	62	1.60	6.42	0	0	0	0	0	0	0
1996	62	4.87	11.36	0	0	3.25	0	0	0	0
1997	74	0	6.76	4.05	0	0	0	0	0	0
Skull Creek #1										
1994	277	0.36	5.78	2.88	0	0	0.36	0	0	0
1995	332	0.90	5.12	0.30	0	0.60	0	0	0	0
1996	341	1.47	2.35	2.05	0.88	0.88	0	0	0.88	0
1997	212	0	0.94	2.36	0.47	0.94	0	0	0.94	0

Table 15. continued

Stream – Year	Area (m^2)	------Rainbow Trout------				------Cutthroat------		Bull trout	Mountain whitefish	Brook trout
		Age 0	Age 1	Age 2	Age >2	<305 mm	>305 mm			
Skull Creek #2										
1994	346	1.16	2.60	2.30	0	0	0	0	0	0
1995	487	0.21	2.67	0.41	0	0.62	0	0	0	0
1996	358	0.84	1.40	1.40	0.56	0.56	0	0	0.28	0
1997	147	0	0.68	0.68	0.68	4.08	0.68	0	10.20	0
Skull Creek #3										
1994	426	0.94	3.05	2.82	0	0.70	0.94	0.70	3.52	0
1995	369	0.81	5.15	0.81	0.54	0.54	0	0	1.63	0
1996	392	5.11	6.39	3.32	1.02	0	0	0	3.32	0
1997	500	0.20	0.40	1.40	1.40	1.20	0	0	2.00	0
Skull Creek #4										
1994	576	0.35	0.69	1.91	0.35	0	1.04	0	1.56	0
1995	977	1.33	1.13	0.10	0	0.61	0	0	1.74	0
1996	502	0	0	0	0	0	0	0	0.20	0
1997	833	0	1.08	0.60	0.24	0.12	0	0	1.80	0
Weitas Creek - lower										
1993	1,380	0	0.07	0	0	0.07	0	0	0.02	0
1994	1,734	0	0.23	0.12	0.06	0	0	0	0.06	0
1995	1,895	0	0	0.26	0.16	0.37	0.11	0	0.69	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	857	0	0	0	0	0.93	0.35	0	4.32	0
Weitas - upper										
1993	634	0	1.26	0.16	0.95	0.47	0	0	9.77	0
1994	4423	0	0	0	0	0	5.42	0	12.18	0
1995	541	0	0.56	0	0	0.92	1.48	0.37	24.01	0
1996	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1997	1699	0	0	0.12	0	0.06	0.12	0	1.29	0
1994	171	0	0.58	0	0	0	0	0	0	0
1995	210	0	2.38	0	0.48	0	0	0	0	0
1996	198	0.50	0	0	0	0	0	0	0	0

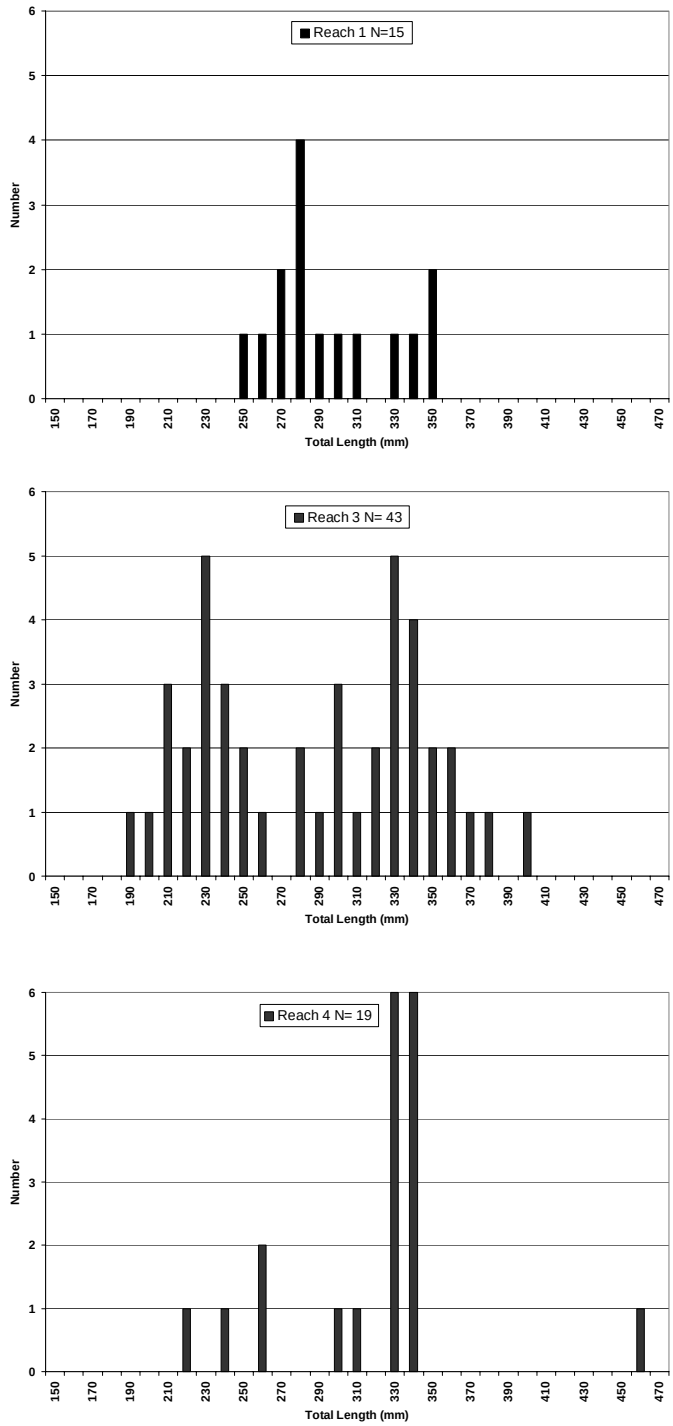

Figure 1. Length frequency of westslope cutthroat trout in the North Fork Clearwater River, July, 1997.

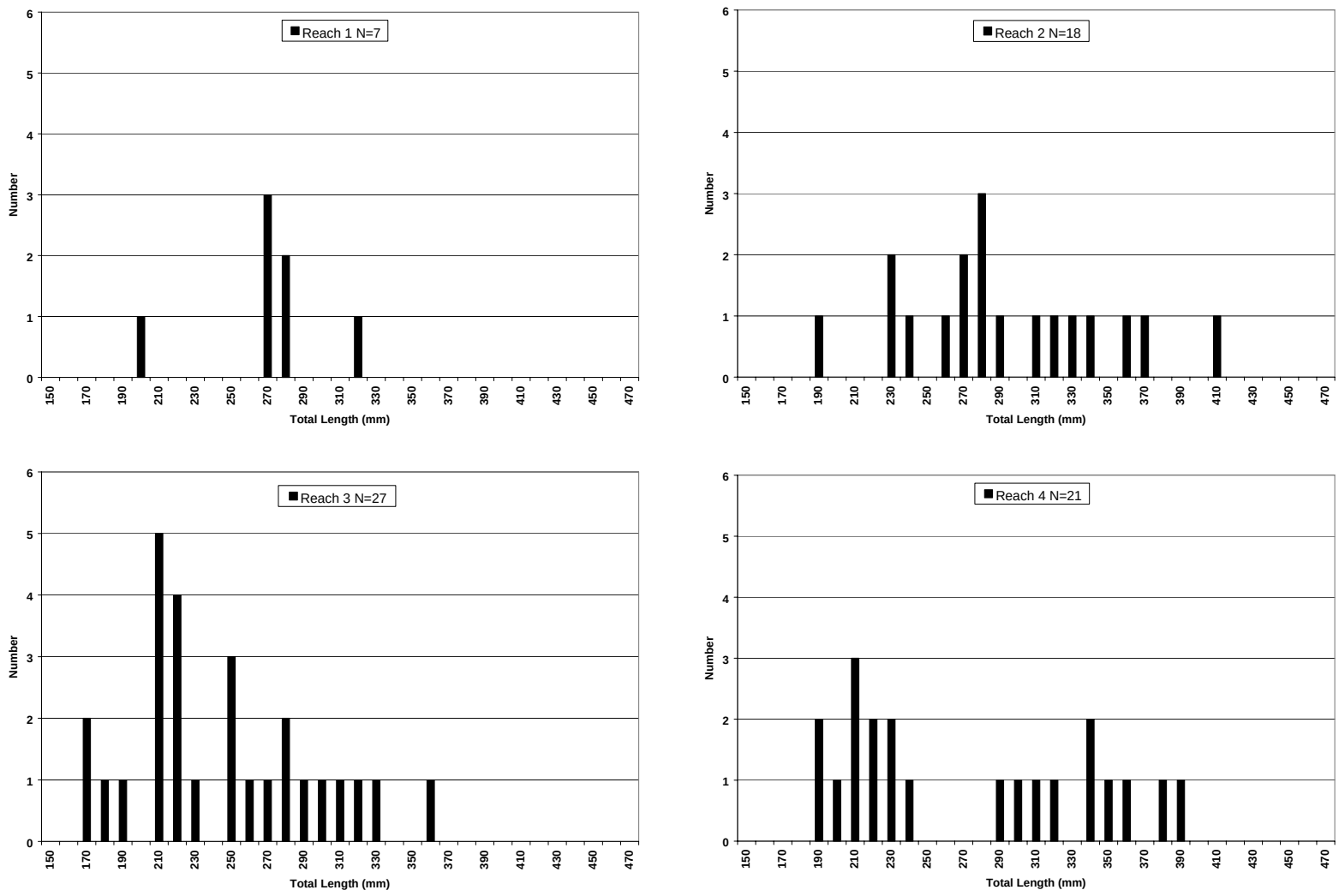

Figure 2. Length frequency of westslope cutthroat trout in the North Fork Clearwater River, September 1997. *No fish tagged in Reach 1.

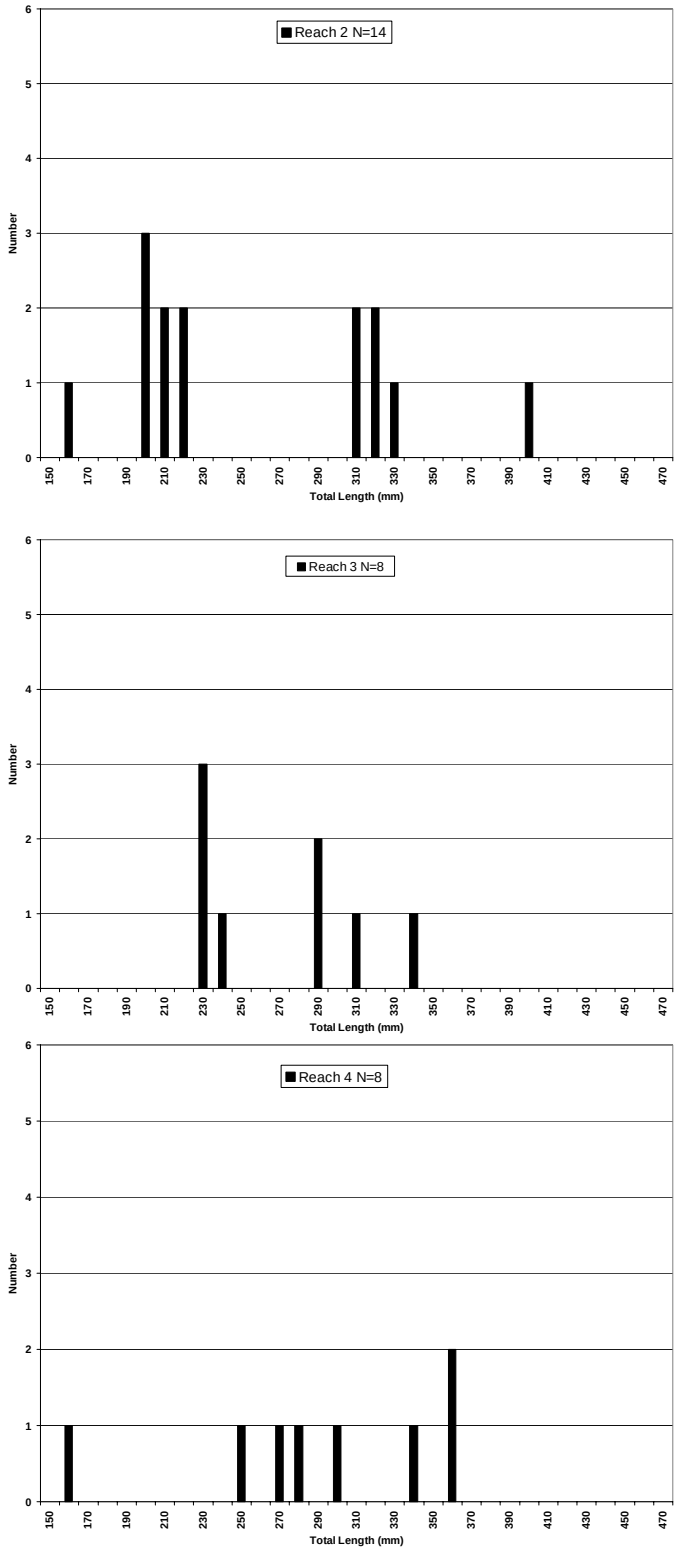

Figure 3. Length frequency of westslope cutthroat trout in the North Fork Clearwater River, September 1997. *No fish tagged in Reach 1.

Table 16. Summary of fish densities (per 100 m^2) as determined by snorkeling in the Lower Clearwater River drainage, 1997

			----------Steelhead trout----------					Cutthroat trout		Smallmouth	Mountain	Brook	Coho
Stream	Date	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	bass	whitefish	trout	salmon
Big Canyon Creek, #1, bridge	6/24	18.25	13.18	4.67	0.20	0.20	0	0	0	0	0	0	0
E.F. Potlatch River, #1, lower	6/23	0	0	0	0	0	0	0	0	0	0	0	0
E.F. Potlatch River, #2, middle	6/23	0	0	0	0	0	0	0	0	0	0	0	0
E.F. Potlatch River, #3, upper	6/23	4.82	0	2.19	2.63	0	0	0	0	0	0	0.44	0
Potlatch River, Kendrick	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
Potlatch River, #1, upper	6/23	1.32	0.04	0.50	0.78	0	0	0	0	0	0	0	0
Mission Creek, #1	6/24	19.42	12.37	2.82	2.82	1.41	0	0	0	0	0	0	0.71
Mission Creek, #2	6/24	9.16	5.56	2.29	0.33	0.98	0	0	0	0	0	0	

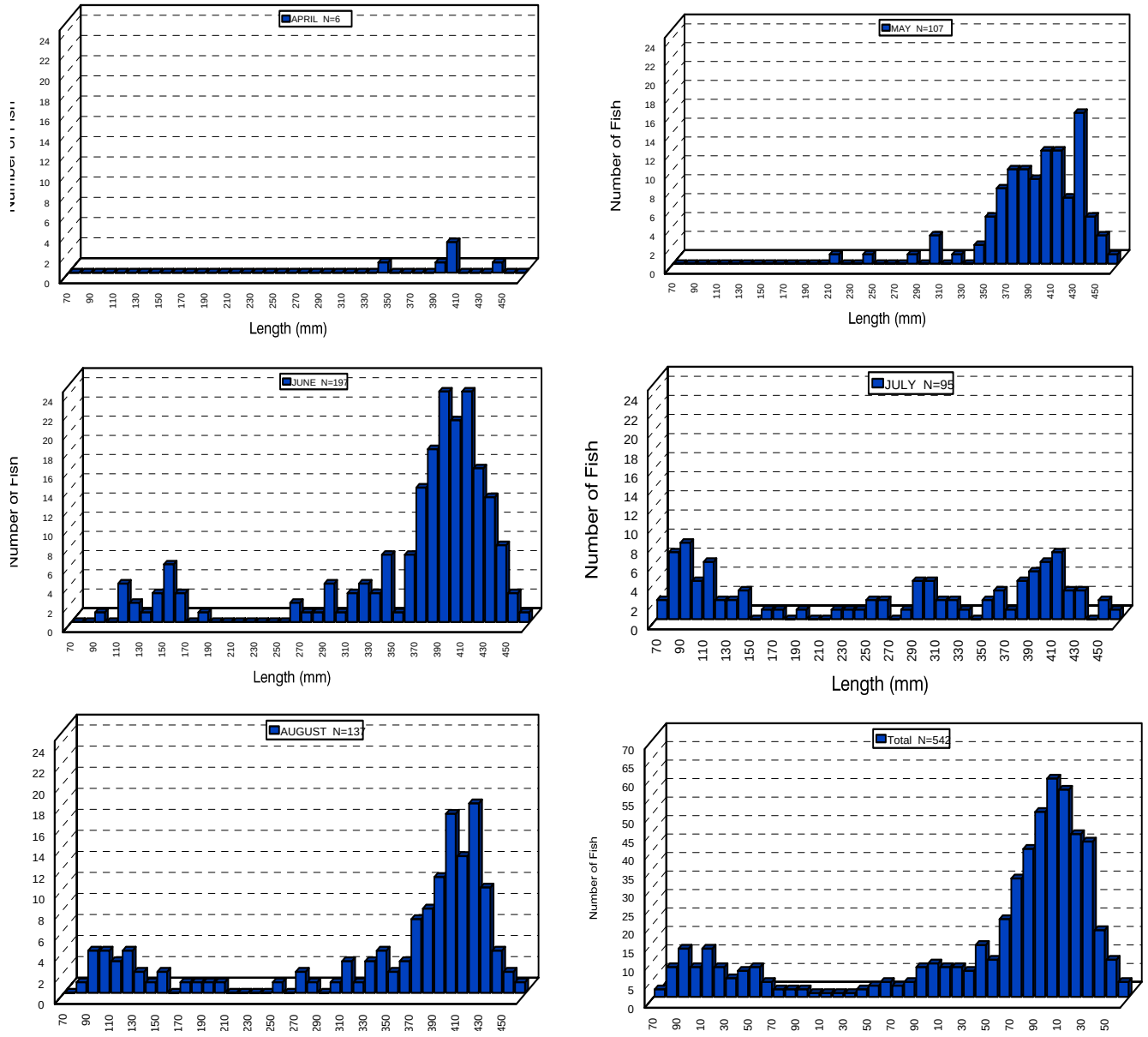

Figure 4. Fork length frequency of bridgelip sucker *Catostomus columbianus* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

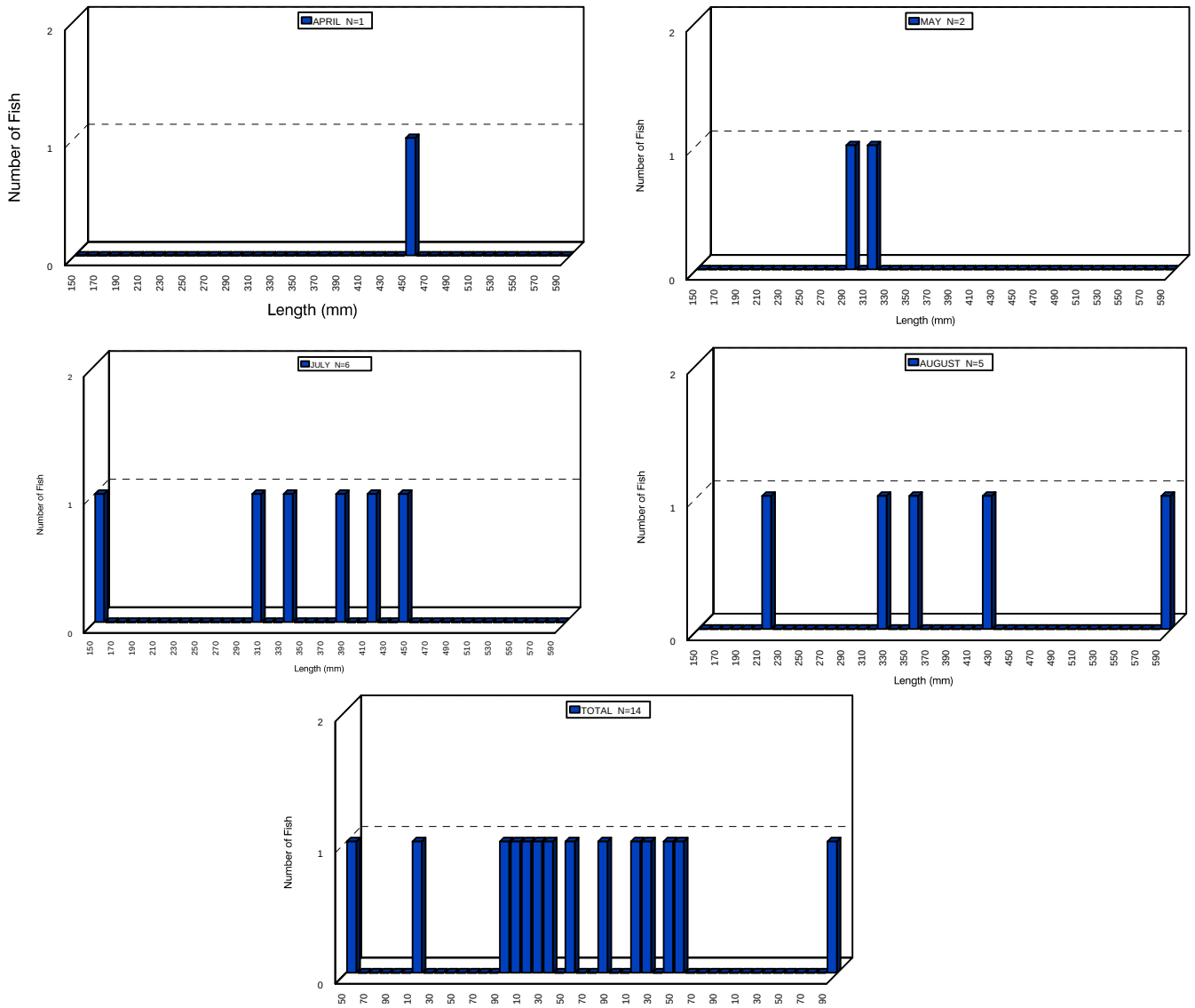

Figure 5. Fork length frequency of bull trout *Salvelinus confluentus* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997

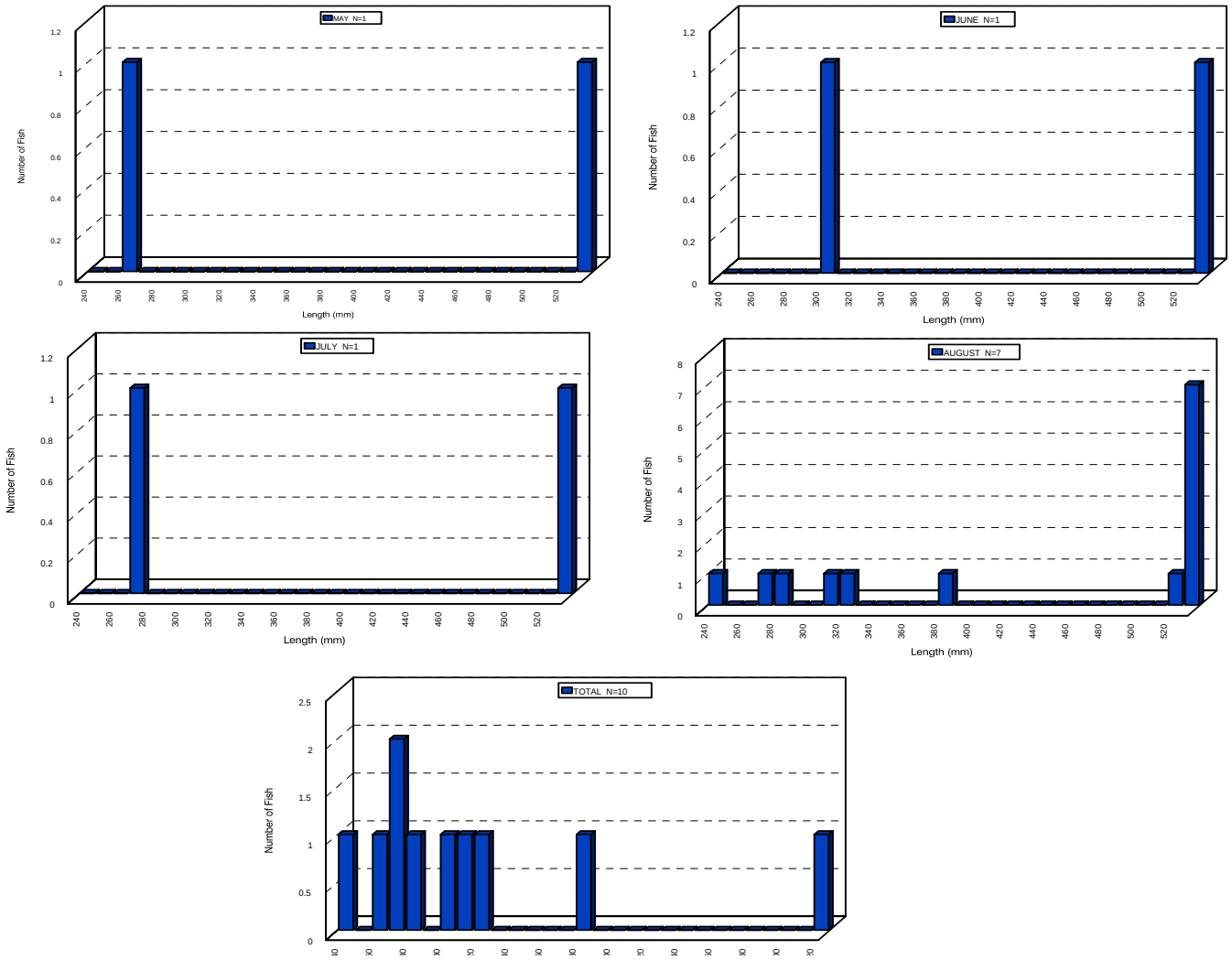

Figure 6. Fork length frequency of cutthroat trout *Oncorhynchus clarki* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997

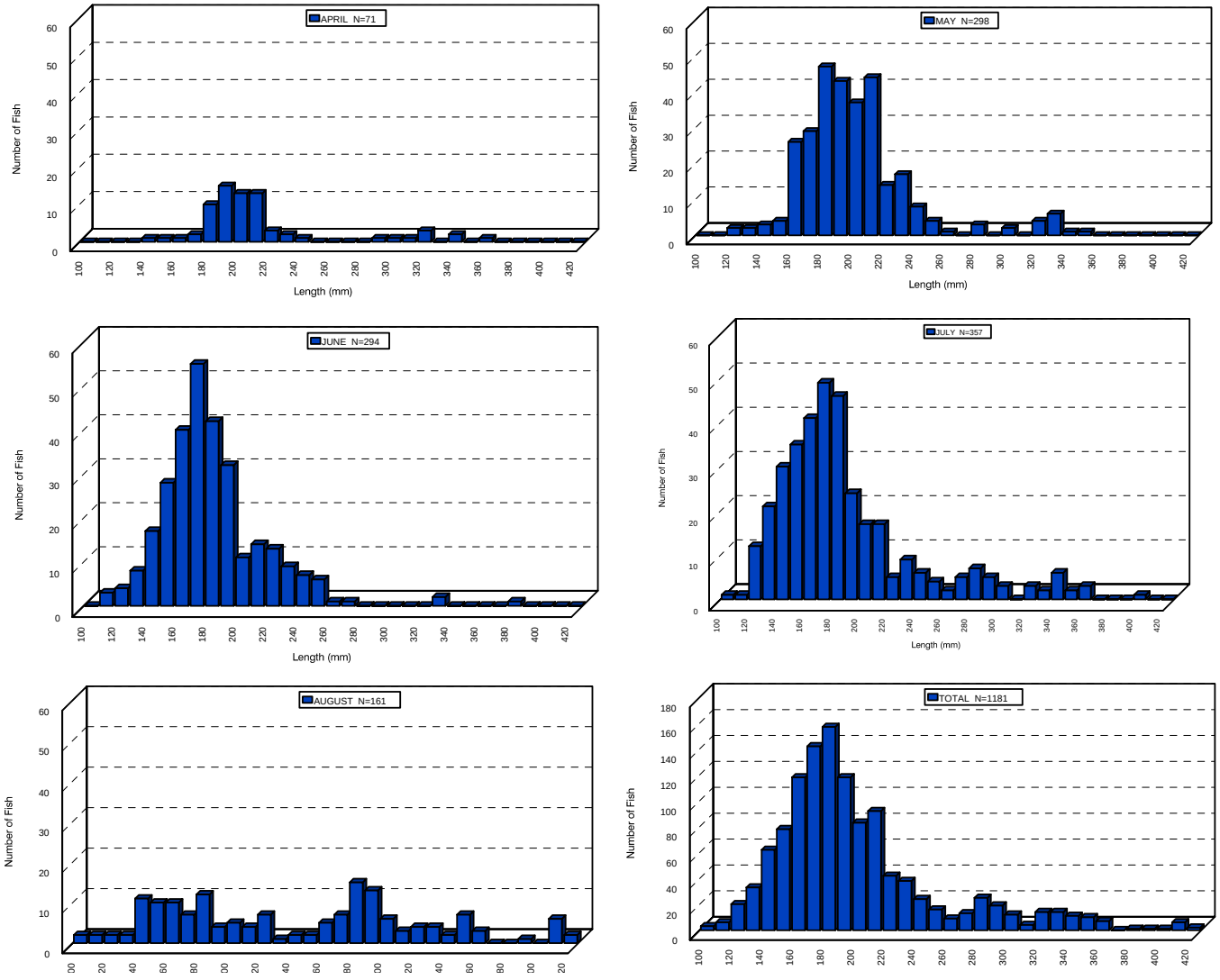

Figure 7. Fork length frequency of hatchery rainbow trout *Oncorhynchus mykiss* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

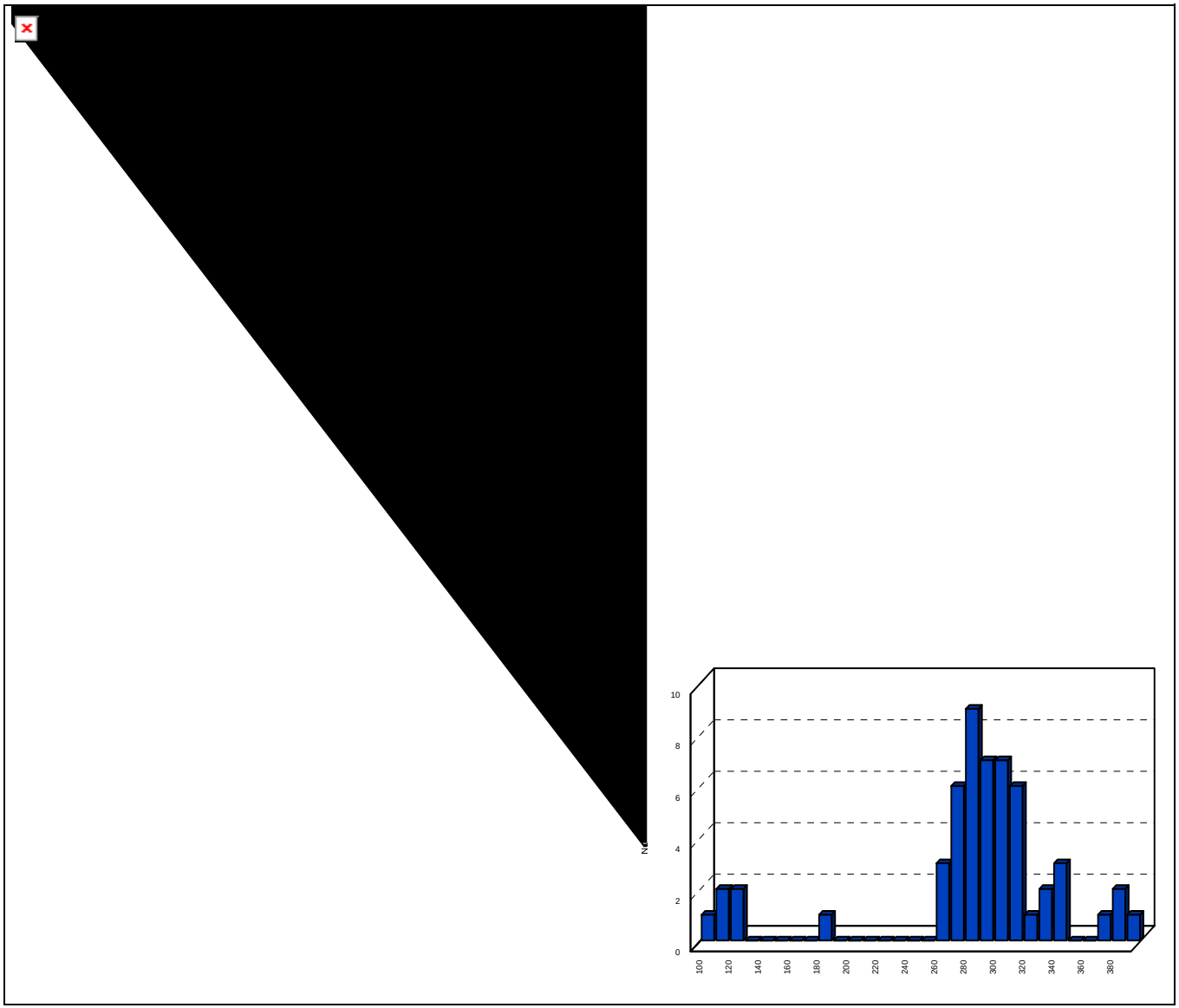

Figure 8. Fork length frequency of kokanee salmon *Oncorhynchus nerka* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

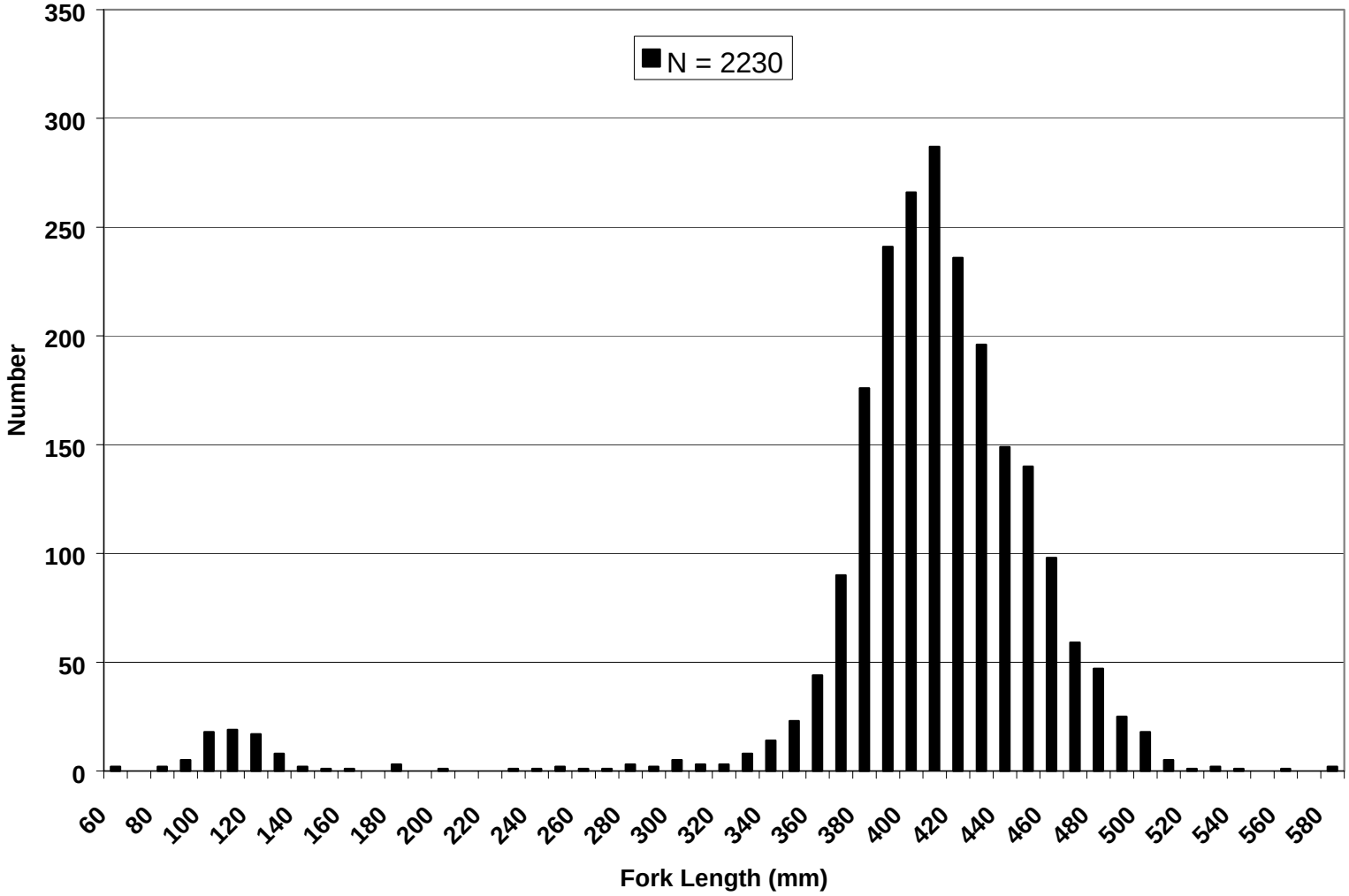

Figure 9. Fork length frequency of largescale sucker *Catostomus macrocheilus* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

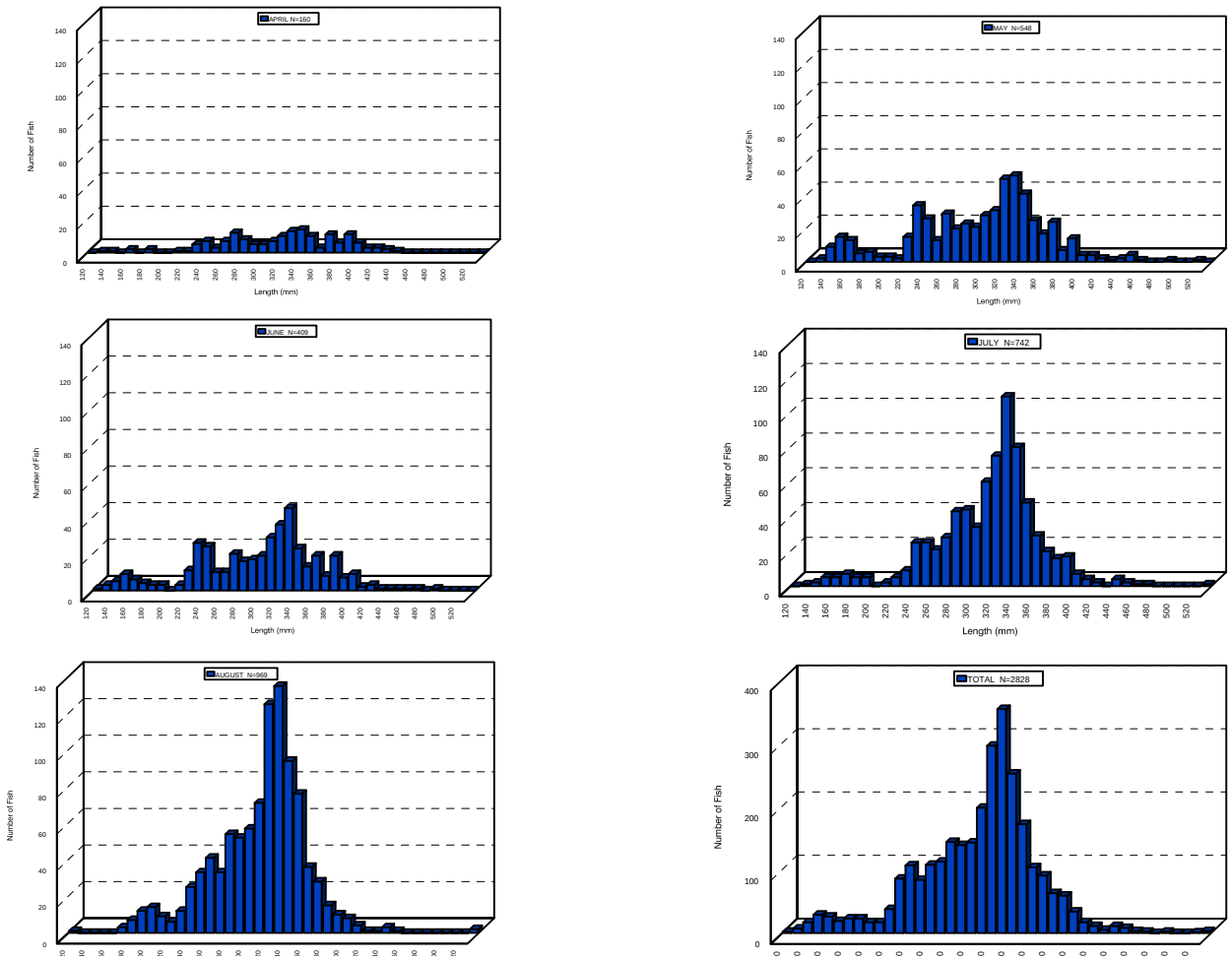

Figure 10. Fork length frequency of mountain whitefish *Prosopium williamsoni* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

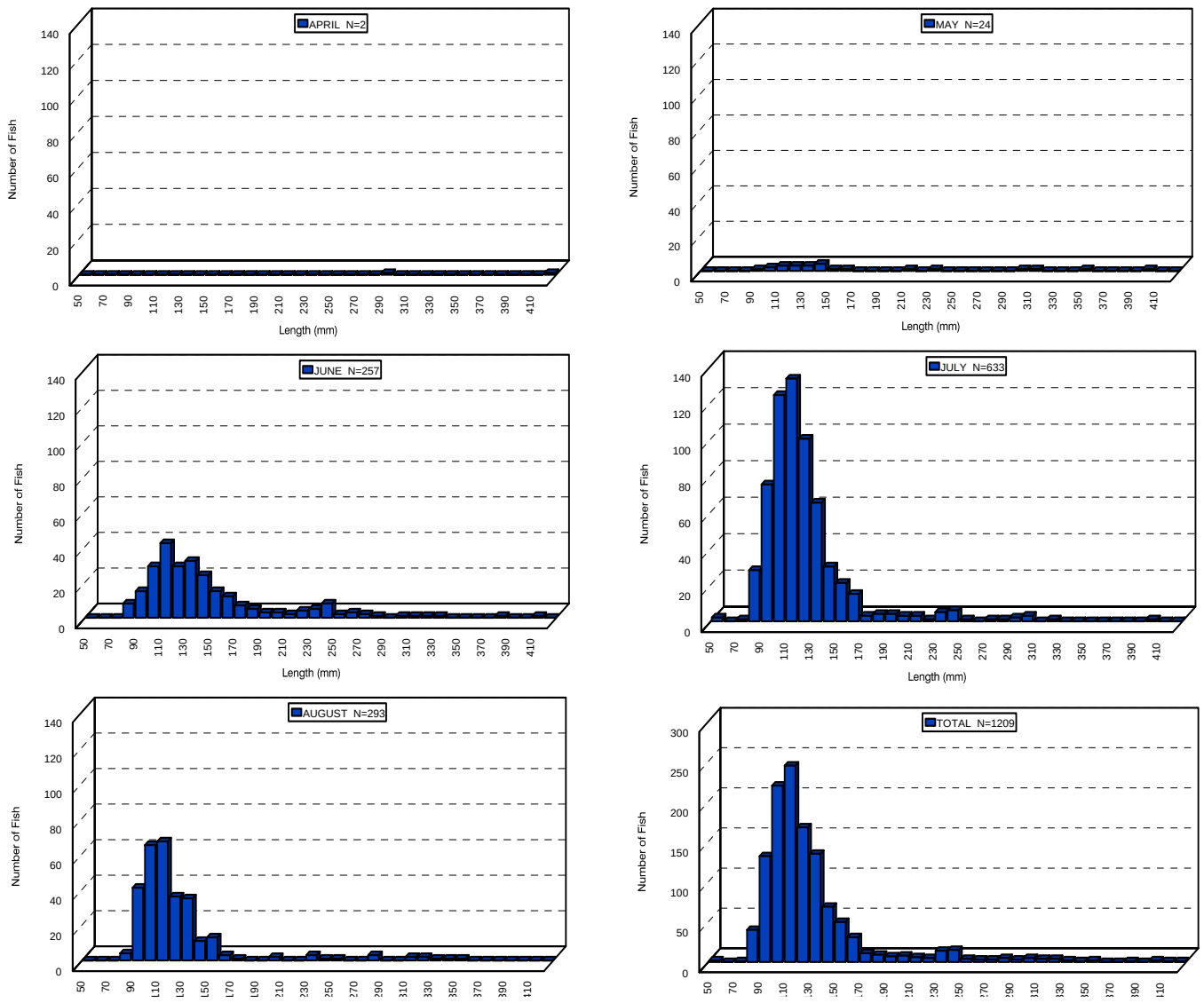

Figure 11. Fork length frequency of smallmouth bass *Micropterus dolomieu* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

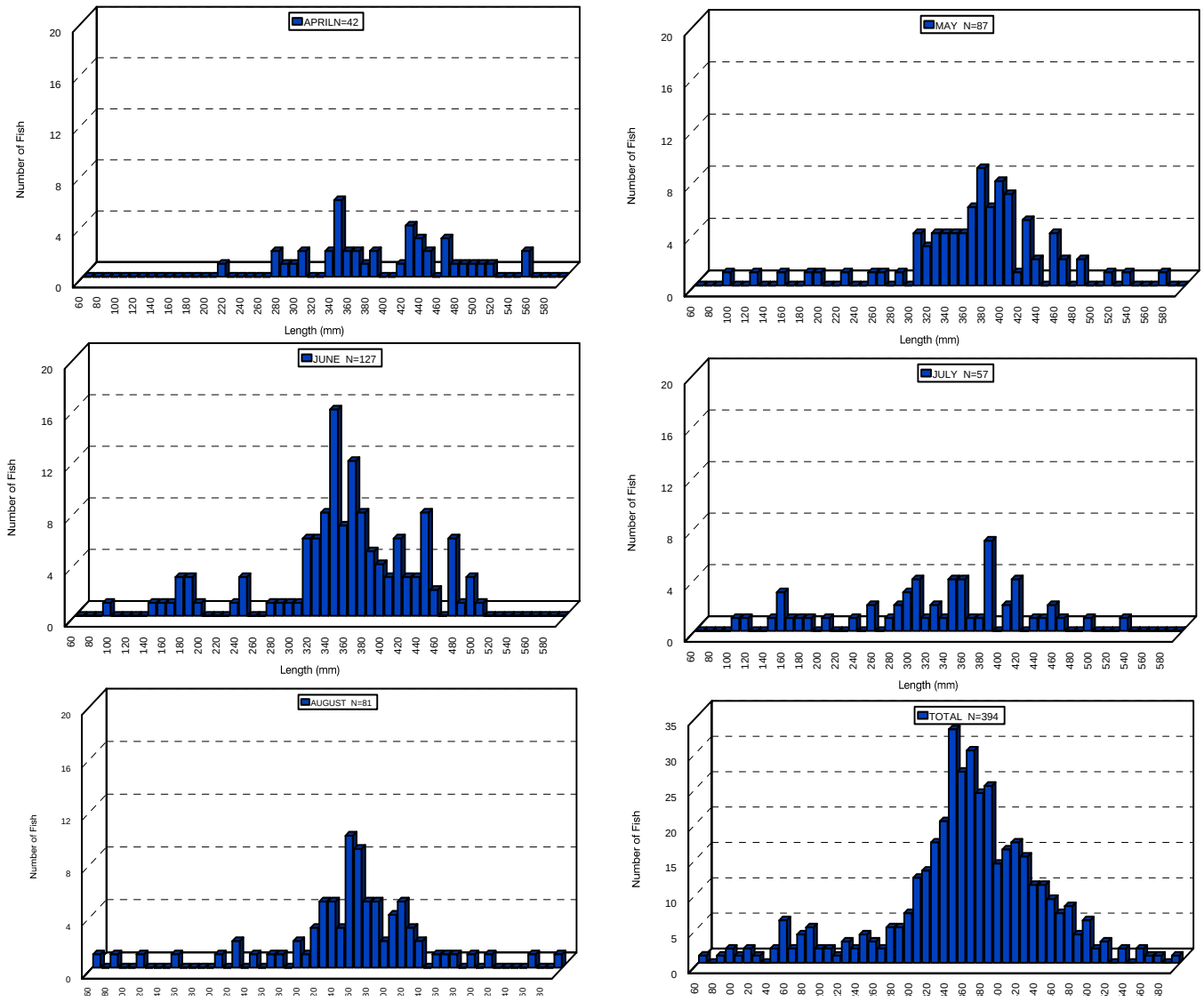

Figure 12. Fork length frequency of northern pikeminnow *Ptychocheilus oregonensis* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

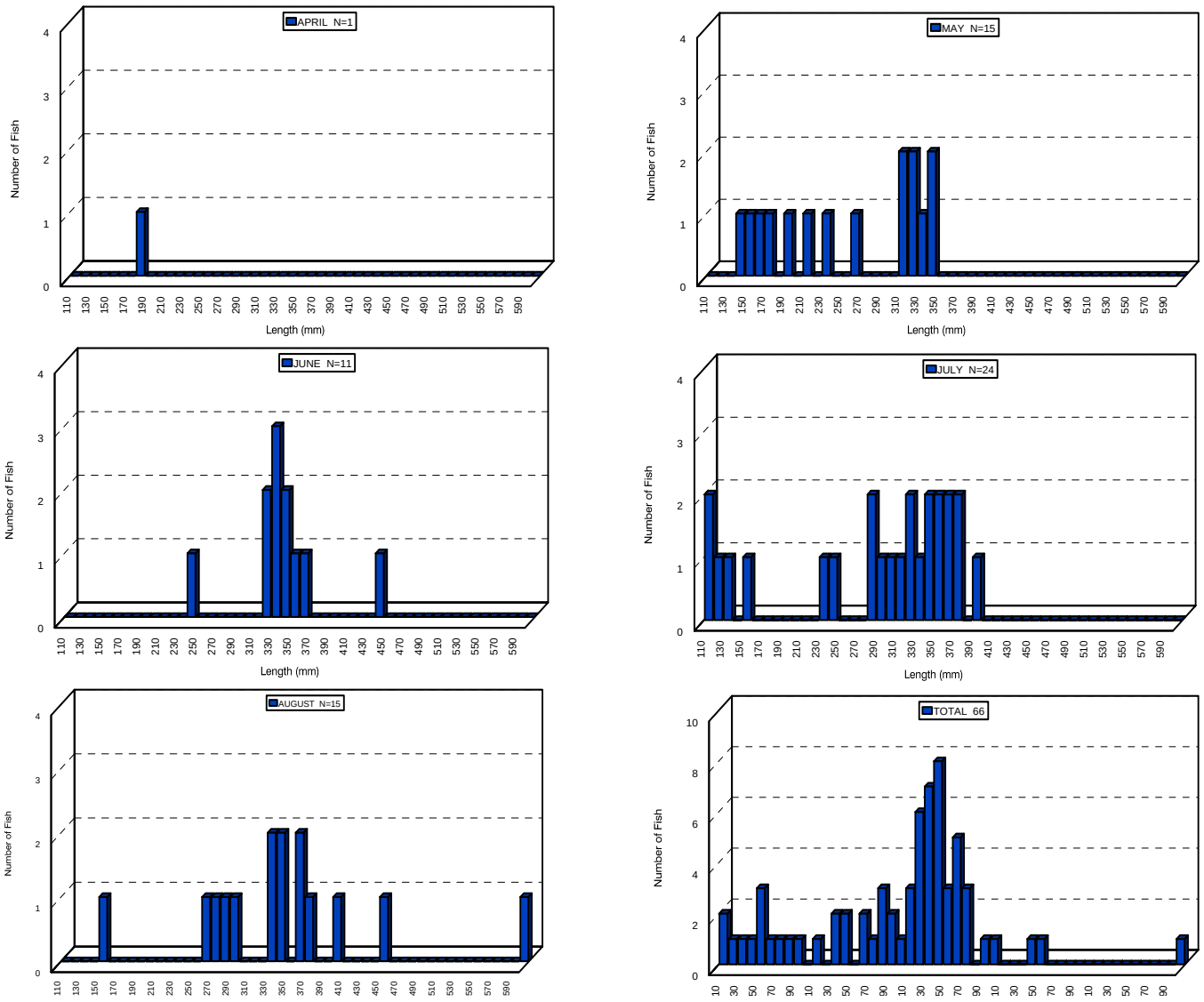

Figure 13. Fork length frequency of wild rainbow trout *Oncorhynchus mykiss* from North Fork Clearwater River below Dworshak Dam and Clearwater River below North Fork Clearwater River, 1997.

South Fork Clearwater River

One hundred sixty-seven chinook salmon juveniles were observed while snorkeling in twenty transects on six streams in the South Fork Clearwater River drainage (Table 17). Bull trout were observed in Red River, Johns Creek and Ten-Mile Creek. A total of 241 chinook salmon redds were counted in traditional aerial surveys in the South Fork Clearwater drainage (Table 18). Newsome Creek received 280 adult chinook from Rapid River that were outplanted in July, elevating the redd count.

In 1997, regional personnel took over responsibility for the Idaho Supplementation Studies (ISS) field data collection in the Crooked River drainage. Eleven transects were snorkeled that will become part of the long-term database. As this drainage has received research supplementation of Selway steelhead parr that are differentially marked, the data is presented in Table 19. A total of 196 juvenile chinook salmon were observed. No bull trout were seen.

Fourteen additional transects were snorkeled in Ten Mile Creek, one per kilometer, randomly selected. Transects began at the 415 trailhead, and ended in the headwaters. Steelhead/rainbow trout dominated the lower reaches, but were absent in the middle reaches where cutthroat trout were the most abundant (Table 20). Bull trout were observed in eight of the fourteen transects. No fish were observed in the two uppermost transects.

Palouse River

Three tributaries to the Palouse River were electroshocked in 1997 (Tables 21-23). Rainbow trout, brook trout *S. fontinalis*, sculpin *Cottus* spp., and dace *Rhinichthys* spp. were found in these streams. Sculpin were the most abundant fish observed.

Table 17. Summary of fish densities (per 100 m^2) as determined by snorkeling in the South Fork Clearwater River drainage, 1997.

		----------Steelhead trout----------						Cutthroat trout		Chinook	Mountain	Bull	Brook
Stream	Date	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	salmon	whitefish	trout	trout
American River, Strata 2, #1	7/11	0	0	0	0	0	0	0	0	2.17	0	2.17	0
American River, Strata 3, #2	7/12	0.13	0	0	0.13	0	0	0	0	0	3.80	0	0
Meadow Creek, #1, MP2	8/13	0.84	0.28	0.28	0.28	0	0	0	0	0	0	0.28	0
Meadow Creek, #2, meadow		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Red River, Strata1 control 1	7/16	0	0	0	0	0	0	0	0	0	0.61	0	4.66
Red River, Strata1 control 2	7/16	0.23	0	0	0.23	0	0.92	0.92	0	0.69	2.52	0.23	4.81
Red River, Strata 2 control 2	7/15	2.10	0	0.79	0.92	0.39	0.92	0.92	0	0	0.39	0	1.18
Red River, Strata 2 treat 2	7/15	0.72	0	0.72	0	0	0.43	0.43	0	0	0.72	0	1.15
Red River, Strata 4 control 2	7/16	0	0	0	0	0	0	0	0	0.60	0.09	0	0.09
Red River, Strata 4 treat 2	7/16	0.05	0	0	0.05	0	0.05	0.05	0	2.47	0.10	0	0.20
Red River, Strata 5 control 2	7/9	0	0	0	0	0	0	0	0	8.30	6.95	0	0
Red River, Strata 5 treat 2	7/9	0.10	0	0.05	0	0.05	0	0	0	0.10	1.67	0	0
Johns Creek, #1	8/12	5.76	3.42	2.16	0	0.18	0	0	0	0	0.36	0	0
Johns Creek, #2	8/12	4.90	0.27	2.18	2.18	0.27	1.90	1.63	0.27	0	0.27	0.27	0
Johns Creek, #3	8/11	2.37	0.43	1.51	0.43	0	0	0	0	0	0	0	0
Johns Creek, #4	8/11	2.66	0.33	1.00	1.33	0	0	0	0	0	0	0	0
Moore Creek, #1, lower	8/10	0	0	0	0	0	2.90	2.90	0	0	0	0	0
Moore Creek, #2, upper	8/10	2.14	1.07	0.71	0.36	0	0	0	0	0	0	0	0
Ten Mile Creek, #1, lower	8/21	4.39	0.42	2.30	1.67	0	0	0	0	0	0	0.10	0
Ten Mile Creek, #2, upper	8/21	2.50	1.00	1.17	0.33	0	0	0	0	0	0.17	0	0

Table 18. Chinook salmon trend redd counts on four tributaries of the South Fork Clearwater drainage 1997.

Drainage	Reach	Type[1]	Description	Date	Method	Redds	Live	Dead
American River	NC4	T	Lick Creek to Kirks Fork	Not done	Aerial	--	--	--
		ISS	Mouth to Limber Luke	9/5	Aerial	80	49	5
Crooked River	NC-6	T	Mouth to Forks above Old Orogrande	9/5	Aerial	18	3	90[a]
Newsome Creek	NC-8	T	Mouth to Radcliffe Creek	9/5	Aerial	48	22	1
Red River	NC-1	T	Weir to Cole 66 Bridge	9/3	Aerial	95	47	50[a]
			South Fork Clearwater Drainage Aerial Total			241		

T = traditional transect
[a] includes hatchery carcasses

Table 19. Summary of fish densities (per 100 m^2) as determined by snorkeling in the Crooked River drainage, 1997.

		----------Steelhead trout----------																
		Total		Age 0		Age 1		Age 2		Age >2		---Cutthroat trout---			Chinook	Mountain	Bull	Brook
Stream	Date	Nat	RV	Nat	RV	Nat	RV	Nat	RV	Nat	RV	Total	<305 mm	>305 mm	Salmon	whitefish	trout	trout
Crooked R, Strata 1, Sill Log B	7/2	0.98	5.67	0	0	0	0.59	0.78	4.10	0.20	0.98	0	0	0	0	0	0	0
Crooked R, Strata 1, Boulder B	7/2	0.94	6.80	0	0	0	0.23	0.82	5.16	0.12	1.41	0	0	0	0	0	0	0
Crooked R, Strata 1, Control B	7/2	0	6.04	0	0	0	1.41	0	3.02	0	1.61	0	0	0	0	0	0	0
Crooked R, Strata 2, Control 1	7/2	1.25	2.86	0.34	0	0.11	0.57	0.57	1.60	0.23	0.69	0.46	0.46	0	0	0.46	0	0
Crooked R, Strata 2, Treat 2	7/3	1.21	3.53	0	0	0.11	0.11	0.99	2.98	0.11	0.44	0.55	0.55	0	0	0.33	0	0
Crooked R, Strata 3, Natural 1	7/3	1.54	0	1.13	0	0.21	0	0.15	0	0.05	0	0	0	0	5.13	0	0	0
Crooked R, Strata 3, Natural 3	7/3	0.13	1.50	0	0	0	0	0.13	1.00	0	0.50	0	0	0	0.50	0.25	0	0
Crooked R, Strata 3, B-Ponds S-2	7/3	0.10	0	0	0	0	0	0.10	0	0	0	0	0	0	5.00	12.39	0	0.94
Crooked R, Strata 4, Meander 2	7/3	0.29	0.29	0	0	0.06	0	0.06	0.23	0.17	0.06	0	0	0	5.55	3.24	0	0
Relief Creek, Strata 1, 1-A	7/2	8.79	3.56	0	0	4.67	1.37	1.92	1.92	2.20	0.27	0	0	0	0	0	0	0
Relief Creek, Strata 1, 1-B	7/2	10.24	0	0	0	0.43	0	7.68	0	2.13	0	4.26	4.26	0	0	0	0.43	0

Table 20. Summary of fish densities (per 100 m^2) as determined by snorkeling in Ten Mile Creek, 1997. Section started at trailhead (=0 km), ended in headwaters.

				----------Steelhead trout----------					Cutthroat trout		Bull	Mountain	All
Stream	Date	Area	Total	Age 0	Age 1	Age 2	Age >2	Total	<305 mm	>305 mm	trout	whitefish	trout
Ten Mile Creek, 3.3 km	8/20	706	5.38	1.42	2.69	1.13	0.14	0.71	0.71	0	0.14	0	6.23
Ten Mile Creek, 4.0 km	8/20	834	7.32	0.48	4.68	1.80	0.36	0	0	0	0.12	0.12	7.44
Ten Mile Creek, 5.5 km	8/20	901	4.99	0.22	3.22	1.33	0.22	0.33	0.33	0	0.11	0	5.43
Ten Mile Creek, 6.3 km	8/20	560	4.29	0	2.32	1.43	0.54	1.07	1.07	0	0	0	5.36
Ten Mile Creek, 7.7 km	8/20	380	0.79	0	0.53	0.26	0	2.11	2.11	0	0	0	2.90
Ten Mile Creek, 8.7 km	8/20	573	0.35	0	0	0.35	0	1.05	1.05	0	0.35	0	1.75
Ten Mile Creek, 9.9 km	8/20	399	0	0	0	0	0	0.75	0.75	0	0	0	0.75
Ten Mile Creek, 10.5 km	8/20	822	0	0	0	0	0	0.85	0.85	0	0.37	0	1.22
Ten Mile Creek, 11.4 km	8/19	808	0	0	0	0	0	2.85	2.85	0	0.25	0	3.10
Ten Mile Creek, 12.6 km	8/19	650	0	0	0	0	0	0.15	0.15	0	0	0	0.15
Ten Mile Creek, 13.2 km	8/19	501	0.20	0.20	0	0	0	1.20	1.20	0	0.40	0	1.80
Ten Mile Creek, 14.1 km	8/19	303	0.33	0	0	0.33	0	0.99	0.99	0	0.33	0	1.65
Ten Mile Creek, 15.6 km	8/19	173	0	0	0	0	0	0	0	0	0	0	0
Ten Mile Creek, 16.3 km	8/19	164	0	0	0	0	0	0	0	0	0	0	0

Table 21. Densities of fish and amphibians for Big Sand Creek, Palouse River Drainage, collected by backpack electroshocking, 1997.

							Density ($100m^2$) by length group									
							----------Rainbow Trout----------									
Transect	Time	Temp (C)	Date	E.F. Time (sec)	Area (m^2)	Total Game Fish Density ($100m^2$)	<100mm	100-150mm	>150mm	<100mm	100-150mm	>150mm	Sculpin	Dace	Frog	Salamander
0.9	1140	10	06/10/97	732	310	2.26	0	0	0	0	0	0	1.94	0.32	0	0
1.3	1360	12	06/10/97	1360	309	2.91	0	0	0.32	1.62	0	0.65	4.21	0	0	0
2.2	1515	12	06/10/97	1186	256	1.56	0	0	0	1.17	0.78	0	4.3	0	0	0
3.5	1645	12	06/10/97	1429	279	0.72	0	0	0	0.36	0.36	0	4.3	0	0	0
4.9	1310	7	06/18/97	1344	242	2.07	0	0	0	0.41	1.65	0	8.26	0	0	0
5.3	1420	7	06/18/97	1137	307	3.26	0	0	0	1.95	0.98	0.33	7.82	0	0	0
6.8	1815	7	06/17/97	940	214	1.4	0	0	0	0	0.93	0	3.27	0	0	0
7.7	1720	7	06/17/97	1090	209	1.44	0	0	0	0	1.44	0	4.3	0	0	0
8.3	1415	7	06/17/97	1102	194	0.52	0	0	0	0.52	0	0	5.15	0	0	1.03
9.9	1245	9	06/17/97	850	157	0	0	0	0	0	0	0	10.2	0	0	0
10.8	1130	6	06/17/97	959	172	1.16	0	0	0	0	1.16	0	0	0	1.16	1.74
11.7	1005	6	06/17/97	825	67.3	67	0	0	0	0	0	0	0	0	0	7.46
				Total	2716.3	1.51	0	0	0.04	0.63	0.44	0.44	4.71	0.04	0.07	0.37

Table 22. Densities of fish and amphibians for North Fork Palouse River collected by backpack electroshocking, 1997.

							Density ($100m^2$) by length group									
							-----Rainbow Trout----			-------Brook Trout-----						
Transect	Time	Temp (C)	Date	E.F. Time (sec)	Area (m^2)	Total Game Fish Density ($100m^2$)	<100mm	100-150mm	>150mm	<100mm	100-150mm	>150mm	Sculpin	Dace	Frog	Salamander
0.7	1200	12	06/11/97	1322	515	0.97	0.78	0.19	0	0	0	0	2.14	0	0	0
1.7	1310	10	06/11/97	657	172	0.58	0.58	0	0	0	0	0	2.9	0	0	0
2.9	1450	10	06/11/97	1945	408	17.74	2.45	3.19	0.25	0	0	0	6.86	0	0	0
3.2	1610	10	06/11/97	1538	367	3	2.18	0.82	0	0	0	0	6.27	0	0	0
4.4	1745	9	06/11/97	1582	470	2.77	2.34	0.21	0.21	0	0	0	2.13	0	0	0
5.5	1010	7.5	06/12/97	1825	418	2.63	2.15	0.48	0	0	0	0	2.63	0	0	0
6.1	1130	6	06/12/97	1290	335	3.88	2.69	1.19	0	0	0	0	2.69	0	0	0
7.4	1600	5.5	06/12/97	1128	260	0.77	0	0	0	0.38	0.38	0	0.38	0	0	0
8.9	1330	5.5	06/12/97	480	206	2.91	0	0	0	0.49	2.43	0	0	0	0.49	0
9.1	1420	5.5	06/12/97	443	133	3.01	0	0	0	0	3.01	0	0	0	0	0
				Total	3284	2.83	1.55	0.67	0.09	0.06	0.24	0.00	2.71	0.00	0.03	0.00

Table 23. Densities of fish and amphibians in Strychnine Creek, Palouse River drainage, collected by backpack electroshocking, 1997.

							Density ($100m^2$) by length group									
				E.F. Time	Area	Total Game Fish	Rainbow Trout			Brook Trout						
Transect	Time	Temp (C)	Date	(sec)	(m^2)	Density ($100m^2$)	<100mm	100-150mm	>150mm	<100mm	100-150mm	>150mm	Sculpin	Dace	Frog	Salamander
0.9	850	11	06/16/97	1334	253	1.98	1.19	0.79	0	0	0	0	10.28	0	0	0
1.8	1010	11	06/16/97	1308	260	1.15	0	0	0	0.77	0.38	0	4.62	0	0	0
2.7	1120	10	06/16/97	1129	236	1.69	0	0	0	0.42	0.85	0.42	6.36	0	0	0
3.1	1325	11	06/16/97	928	184	1.63	0	0	0	1.63	0	0	4.34	0	0	0
4.5	1500	11	06/16/97	1122	148	4.73	0	0	0	4.73	0	0	9.46	0	0	1.35
5.2	1630	12	06/16/97	1209	185	2.16	0	0	0	2.16	0	0	7.57	0	0	0.54
6.4	1750	10	06/16/97	904	143	2.8	0	0	0	2.1	0.7	0	6.29	0	0	1.4
7.8	930	3	06/18/97	1321	159	2.52	0	0	0	1.89	0.63	0	0	0	0	1.89
8.3	1030	3	06/18/97	941	141	1.42	0	0	0	0	1.42	0	0	0	0	1.42
				Total	1709	1.93	0.18	0.12	0.00	1.29	0.35	0.06	5.44	0.00	0.00	0.59

WHITE STURGEON

Methods

We sampled white sturgeon with traditional hook and line methods in the Snake and Salmon rivers. Passive integrated transponder (PIT) tags were inserted in the left side of the fish, just below the base of the dorsal fin. Sturgeons were inspected for previous marks, tags and hook scars, measured for total length (TL) and released.

Results

Snake River

During the 1997 field season, fishery management personnel and volunteers captured and PIT tagged 26 white sturgeon on the Snake River between Lewiston and Hells Canyon Dam (Table 24). In addition, another 11 white sturgeon were captured which had previously been PIT tagged (Table 25).

SALMONID SAMPLING AND DIET ANALYSIS

Methods

As in 1992-96, we sampled residualized hatchery steelhead trout smolts and wild rainbow trout in the Salmon and Clearwater rivers. In the Clearwater River, we used pulsed D.C. current from a portable generator and a Coffelt VVP-2E pulsator. Booms and electrodes were mounted on a 5.5-m aluminum boat. Steelhead smolts were collected using traditional hook and line methods in the Salmon River.

All trout were measured for length. Residualized hatchery steelhead trout smolts in the Salmon River were sacrificed and their stomachs dissected for diet analysis. Wild rainbow trout were released unharmed. Hatchery steelhead trout juveniles were identified by a missing adipose fin.

Table 24. White sturgeon captured and PIT tagged in Snake River from Lewiston, ID, upstream to Salmon River, 1997.

PIT tag no.	Date captured	Total length (cm)	Fork length (cm)	Capture location (rkm)
7F7D0E3029	07-Mar-97	77	68	288
7F7D0F257D	08-Mar-97	113	99	288
7F7D0F2D7E	08-Mar-97	186	169	288
7F7D0E3227	08-Mar-97	90	83	277
7F7D0F3B2B	08-Mar-97	167	156	288
7F7D0E335C	20-Mar-97	165	151	356
7F7D0F2D44	23-Mar-97	92	80	291
7F7D0F2573	23-Mar-97	126	114	291
7F7D0E327E	20-Apr-97	98	87	293
7F7D0E3428	25-Jun-97	193	171	319
7F7D0F267S	06-Jul-97	95	84	297
7F7D0E2C70	06-Jul-97	84	76	297
7F7D0E3150	06-Aug-97	77	67	293
7F7D0E3173	06-Jul-97	85	75	290
7F7D0F2542	06-Jul-97	98	86	294
7F7D0E3026	13-Jul-97	178	162	287
7F7D0E2C43	13-Jul-97	85	75	285
7F7D0F2D42	27-Jul-97	117	108	285
7F7D0E3054	27-Jul-97	192	172	293
7F7D0E3172	13-Aug-97	220	200	317
7F7D0E1D19	05-Oct-97	177	157	298
7F7D0E240E	08-Oct-97	199	179	281
7F7D0F373D	18-Nov-97	80	71	287
7F7D0E237C	18-Nov-97	84	76	293
7F7D0F2C18	18-Nov-97	69		285
7F7D0F270D	18-Nov-97	160	145	287

Table 25. White sturgeon recaptures from Snake River between Lewiston, ID and Salmon River, 1997.

PIT tag No.	Date of recapture	Total length (cm)	Length increase (cm)	Rkm of recapture	Rkm moved	Days at large
F7FD0F3B2B	08-Mar-97	169	56	288	82	2015
7F7D0F3B2B	23-Mar-97	169	0	288	0	15
7F7D0F2573	20-Apr-97	126	0	291	0	28
7F7D0E2331	27-Aug-96	218	0	363		
7F7F427125	20-Apr-97	185	48	265	0	1834
7F7D0E3150	13-Jul-97	77	0	293	0	7
7F7D0B677F	27-Jul-97	91	0	293	3	1483
7F7D0B677F	10-Aug-97	91	0	293	0	1497
7F7D0D6B21	03-Oct-97	92	1	293	2	1139
7F7D0D6B21	18-Nov-97	92	0	293	0	46
7F7D0F3165	18-Aug-97	164	4	70	38	727

Results

Clearwater River

We sampled sections within the lower 70 kilometers of the Clearwater River with electrofishing gear on 65 days, from April 20 to August 30, 1997. We collected 950 hatchery steelhead trout smolts, 231 unmarked hatchery rainbow trout, and one 400-mm Kamloop trout in approximately 3,000 minutes of electrode on time (Table 26). We dissected the stomachs of 19 hatchery steelhead trout smolts and the one Kamloops trout for

diet analysis. Diet consisted primarily of aquatic and terrestrial insects, snails and green algae. No fish or fish parts were found or identified. Fingerling rainbow trout most likely experienced high emigration losses from the extremely high runoffs in 1996 and 1997. The high number of unmarked hatchery rainbow found in the Clearwater were most likely catchable-sized hatchery rainbow trout that emigrated from Dworshak Reservoir.

Salmon River

We sampled sections of the lower 80 kilometers of the Salmon River with electrofishing gear on August 14, 1997, and with hook and line gear from August 17 to August 20, 1997. We collected nine rainbow trout in 5,445 seconds of electrode on time with electrofishing gear and 25 rainbow trout in 181 hours of effort with hook and line gear. Residualized hatchery steelhead trout smolts represented 29 percent of the sample. Kamloops trout accounted for 18 percent of the sample. No Spokane strain rainbow trout were sampled. Two-year classes of fingerlings were represented in the sample (Table 27).

We dissected the stomachs of all 16-hatchery origin trout collected from the Salmon River and examined the content. Diet consisted of aquatic and terrestrial insects, aquatic snails, and green algae. No fish or fish parts were found or identified.

KOKANEE SPAWNING GROUND COUNTS

Methods

Since 1981, four to six tributaries to Dworshak Reservoir are surveyed in late September to estimate the size of the kokanee *O. nerka* spawning run from the reservoir. The survey is conducted by enumerating fish starting from the mouth of each stream upstream until kokanee are no longer observed.

Table 26. Length frequency of hatchery origin rainbow trout (Hrbt) collected by electrofishing in the lower Clearwater River, 1997.

Length (mm)	Hrbt
100	3
110	6
120	20
130	33
140	62
150	78
160	118
170	142
180	157
190	118
200	83
210	92
220	42
230	38
240	24
250	16
260	9
270	13
280	25
290	19
300	12
310	4
320	14
330	14
340	11
350	10
360	7
370	0
380	1
390	1
400	2
410	6
420	2
430	0
440	0
450	0
460	0
470	0
480	0
490	0
500	0

Table 27. Length frequency of hatchery origin rainbow trout (Hrbt) collected by electrofishing and angling in the lower Salmon River, 1997.

Water	Month	Rainbow Trout	Kokanee	Total
Clearwater River	October	5000		5000
Palouse River	May	15050		15050
Salmon River	October	49848		49848
Mann Lake	May	60028	11200	7122
Soldiers Meadow Reservoir	May	10019	5600	15619
Spring Valley Reservoir	May	25026		25026
Waha Lake	May	5031	5600	10631
Winchester Lake	May	30014		30014
Total		245016	22400	267416

Results

On September 25, 1997, we counted 144 kokanee spawners in three index tributaries of the North Fork Clearwater River (Table 28). This represents the lowest number since trend counts began in 1981 and is less than 1 percent of the average count from the previous ten years. This low number is a direct result of kokanee lost through Dworshak Dam during the floods of winter 1995-1996.

CREEL CENSUS

Methods

Clearwater Region fish management personnel and conservation officers performed spot check creel census surveys throughout the region in 1997.

Results

Twenty-four streams were censused on a random basis in 1997 (Table 29). Regional personnel checked 329 anglers who fished 495 hours. Anglers reported catching 370 game fish, averaging 0.75 fish per hour.

INCIDENTAL TRAP CATCHES

Rotary traps have been installed in selected streams in the Clearwater drainage since 1992 to monitor juvenile anadromous emigrations as part of ISS. We summarized incidental catch of resident salmonids and non-target anadromous fish at these traps for where data was available. This information is presented in Table 30. Pacific lamprey *Lampetra tridentata* have only been captured at the Red River trap. Bull trout captured at all traps since 1996 have received PIT tags to monitor movement and growth.

Table 28. Number of spawning kokanee observed in selected tributaries to Dworshak Reservoir, Idaho, 1981-1997.

	----------Trend Count Area----------					
Year	Isabella Creek	Skull Creek	Quartz Creek	Total	Dog Creek	Breakfast Creek
1981	4,000	3,220	850	8,070		
1982	5,000	4,500	1,076	10,576		
1983	2,250	135	66	2,451		
1984	9,000	2,200	1,000	12,200		
1985	10,000	8,000	2,000	20,000		
1986	ND	ND	ND	ND		
1987	3,520	1,351	1,477	6,348	700	23
1988	10,960	5,780	6,080	22,820	1,720	14,760
1989	11,830	5,185	2,970	19,985	1,720	14,402
1990	10,535	3,219	1,702	15,456	1,875	1,149
1991	4,053	1,249	693	5,995	590	3,557
1992	7,085	4,299	1,808	13,192	1,120	
1993	29,171	7,574	2,476	39,221	6,780	
1994	14,613	12,310	4,501	31,424	1,878	
1995	12,850	20,850	2,780	36,480	1,160	
1996	2,552	4	13	2,569	82	
1997	144	0	0	144	0	

Table 29. Summary of impromptu creel surveys in Clearwater Region streams, 1997.

Water/ Date	Anglers	Hours Fished	RBT	HRBT	CUT	SMB	STH	SHS	SQW	BLT	BKT	CHN	TOTAL	CPUE
Clearwater River														
02/23	3	18	1	0	0	0	0	0	0	0	0	0	1	0.06
Clearwater River, North Fork (above Dworshak Reservoir)														
05/25	1	0.5	0	0	3	0	0	0	0	1	0	0	4	8.00
06/01	13	24	2	0	0	0	0	0	0	0	0	1	3	0.13
06/25	1	3	2	0	3	0	0	0	0	0	0	0	5	1.67
07/05	27	33	6	0	31	0	0	0	0	0	0	0	37	1.12
07/06	2	2	0	0	4	0	0	0	0	0	0	0	4	2.00
07/12	2	4	0	0	5	0	0	0	0	0	0	0	5	1.25
07/19	1	2	0	0	1	0	0	0	0	1	0	0	2	1.00
07/22	2	7	0	0	8	0	0	0	0	0	0	0	8	1.14
07/23	3	9	0	0	10	0	0	0	0	0	0	0	10	1.11
07/24	1	2	0	0	2	0	0	0	0	0	0	0	2	1.00
07/26	17	36	0	0	68	0	0	0	0	0	0	0	68	1.89
07/27	7	9	0	0	39	0	0	0	0	0	0	0	39	4.33
07/30	1	6	0	0	7	0	0	0	0	0	0	0	7	1.17
08/01	4	11	0	0	13	0	0	0	0	0	0	0	13	1.18
08/13	3	17	1	0	43	0	0	0	0	0	0	0	44	2.58
08/16	4	9	0	0	7	0	0	0	0	4	0	0	11	1.22
08/17	2	1	0	0	1	0	0	0	0	0	0	0	1	1.00
Total	91	175.5	11	0	245	0	0	0	0	6	0	1	264	1.50

Table 29. continued

Water/ Date	Anglers	Hours Fished	RBT	HRBT	CUT	SMB	STH	SHS	SQW	BLT	BKT	CHN	TOTAL	CPUE
Clearwater River, South Fork														
02/01	4	12	0	0	0	0	0	0	0	0	0	0	0	0.00
02/15	1	1	0	0	0	0	0	0	0	0	0	0	0	0.00
03/26	13	24.5	5	0	0	0	0	0	0	0	0	0	5	0.20
03/29	16	17	0	0	0	0	0	0	0	0	0	0	0	0.00
04/04	11	7.5	1	0	0	0	0	0	0	0	0	0	1	0.13
04/05	10	13	0	0	0	0	0	0	0	0	0	0	0	0.00
04/12	6	5	0	0	0	0	0	0	0	0	0	0	0	0.00
04/13	4	10.5	0	0	0	0	0	0	0	0	0	0	0	0.00
05/24	2	1	0	0	0	0	0	0	0	0	0	0	0	0.00
05/25	3	5	2	0	1	0	0	0	0	0	0	0	3	0.60
06/06	1	1	0	0	0	0	0	0	0	0	0	0	0	0.00
06/07	4	3	0	0	0	0	0	0	0	0	0	0	0	0.00
06/14	7	9	0	0	0	0	0	0	0	0	0	2	2	0.22
06/15	7	6.5	0	1	0	0	0	0	0	0	0	0	1	0.40
06/19	6	18	20	0	0	0	0	0	0	0	0	0	20	1.11
06/20	2	1.5	0	0	0	0	0	0	0	0	0	0	0	0.00
06/24	8	13	0	3	0	0	0	0	0	0	0	0	3	0.20
07/21	6	5.5	6	0	0	0	0	0	0	0	0	0	6	1.09
07/22	2	6	0	0	0	0	0	0	0	0	0	0	0	0.00
07/23	1	1	0	0	0	0	0	0	0	0	0	0	0	0.00
07/25	5	8	0	1	0	0	0	0	0	0	0	0	1	0.13
07/26	3	1.5	0	0	0	0	0	0	0	0	0	0	0	0.00
07/27	16	25	5	1	0	0	0	0	0	1	0	0	7	0.28
08/09	18	26	0	0	0	0	0	0	0	0	0	0	0	0.00
08/10	3	1.5	0	0	0	0	0	0	0	0	0	0	0	0.00
08/17	5	3.5	0	0	0	0	0	0	0	0	0	0	0	0.00
Total	164	226.5	39	6	1	0	0	0	0	1	0	2	49	.22

Table 29. continued

Water/ Date	Anglers	Hours Fished	RBT	HRBT	CUT	SMB	STH	SHS	SQW	BLT	BKT	CHN	TOTAL	CPUE
Crooked River														
5/25	6	3	3	0	0	0	0	0	0	0	0	0	3	1.00
Lochsa River														
07/19	6	8	0	0	0	0	0	0	0	0	0	0	0	0.00
07/21	5	10	0	0	6	0	0	0	0	0	0	0	6	0.60
07/23	5	9	0	0	1	0	0	0	0	0	0	0	1	0.11
07/26	10	13	0	0	10	0	0	0	0	0	0	0	10	0.77
Total	26	40	0	0	17	0	0	0	0	0	0	0	17	0.42
Meadow Creek														
07/26	3	0	0	0	0	0	0	0	0	0	0	1	1	0.33
Palouse River														
05/24	4	4	2	0	0	0	0	0	0	0	0	0	2	0.50
Red River														
08/17	4	3	0	0	0	0	0	0	0	0	0	0	0	0.00
09/12	2	1	0	0	3	0	0	0	0	0	0	0	3	3.00
Total	**6**	**4**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Squaw Creek														
08/16	4	8	4	0	3	0	0	0	0	1	0	0	8	1.00
08/31	2	2	0	0	1	0	0	0	0	0	0	0	1	0.50
Total	**6**	**10**	**4**	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**9**	**0.90**

Table 29. Continued

BKT-Brook trout
BLT-Bulltrout
CHN-Chinook
CUT-Cutthroat Trout
HRBT-Hatchery Rainbow Trout
RBT-Rainbow Trout
SMB-Smallmouth Bass
SQW-Northern Squawfish
STH-Steelhead Trout

JOB PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management
Project IV: Population Management Subproject IV-B: Clearwater Region

Contract Period: July 1, 1997 to June 30,1998

ABSTRACT

Stocking 25,200 fry, 222,416 fingerling size and 252,151 catchable size salmonids into lakes, reservoirs, rivers, and streams enhanced resident fish populations and sport fishing in the Clearwater Region.

Clearwater Region personnel distributed 243 bluegill sunfish *Lepomis macrochirus*, and 164 largemouth bass *Micropterus salmoides* (<200 mm) to local farm pond owners for private pond stocking. These fish were collected from Spring Valley Reservoir on May 23, 1997.

Clearwater Region personnel collected 536 black crappie *Pomoxis nigromaculatus* from Mann Lake and traded them to Washington Department of Fisheries for 150 tiger muskie *Esox lucius* X *E. masquinongy*. The tiger muskie were stocked in Winchester Lake to establish a population, diversify the warm water fishery and provide some control of yellow perch *Perca flavescens*.

Author:
Ed Schriever
Regional Fishery Biologist

RESULTS

Stocking approximately 25,200 fry, 22,416 fingerling size and 252,151 catchable size salmonids in 1997 enhanced supplemented resident fish populations and sport fishing in the Clearwater Region.

Idaho Department of Fish and Game personnel stocked 22,700 cutthroat fry trout Oncorh*ynchus clarki* into 22 alpine lakes and 2500 rainbow trout *O. mykiss* into four alpine lakes in 1997 (Table 1). Regional waters were stocked with 230,118 fingerling size rainbow trout and 22,400 fingerling size kokanee *O. nerka* in 1997 (Table 2). Lakes, ponds and reservoirs were stocked with 250,656 catchable size rainbow trout in 1997 (Table 3). Rivers and streams were stocked with 11,469 catchable size rainbow trout in 1997 (Table 4).

Clearwater Region personnel distributed 243 bluegill sunfish *Lepomis macrochirus* and 164 largemouth bass *Micropterus salmoides* to 14 local farm pond owners for private pond stocking. These fish were collected during routine population sampling in Spring Valley Reservoir. Only bass less than 200 millimeters and bluegill sunfish less than 160 millimeters were given away.

Clearwater Region personnel collected 536 black crappie *Pomoxis nigromaculatus* from Mann Lake on May 1, 1997. The crappie were collected with electrofishing gear and trap nets and were traded to Washington Department of Fisheries for 150 tiger muskie *Esox lucius* X *E. masquinongy*. The tiger muskie were stocked in Winchester Lake to establish a population, diversify the warm water fishery and provide some control of yellow perch *Perca flavescens*.

Table 1. Trout fry stocked in waters of the Clearwater Region, 1997.

Water	Species	Number
Beaver Lake #2	Westslope Cutthroat	1000
Elizabeth Lake	Westslope Cutthroat	2000
Elk Lake	Westslope Cutthroat	500
Fire Lake	Rainbow Trout	500
Gold Lake	Westslope Cutthroat	500
Grouse Lake	Westslope Cutthroat	700
Moose Lake	Rainbow Trout	1000
Mud Lake	Westslope Cutthroat	500
Post Office Lake (lower)	Westslope Cutthroat	2000
Post Office Lake (upper)	Westslope Cutthroat	2000
Pot Lake	Rainbow Trout	500
Rudd Lake	Westslope Cutthroat	1000
Shasta Lake	Westslope Cutthroat	1000
North Shoot Lake	Westslope Cutthroat	1000
Silver Lake	Westslope Cutthroat	1000
Stripe Creek Lake #1	Westslope Cutthroat	1000
Stripe Creek Lake #2	Westslope Cutthroat	1000
Stripe Creek Lake #3	Westslope Cutthroat	1000
Stripe Creek Lake #4	Westslope Cutthroat	1000
Surprise Creek Lake #3	Westslope Cutthroat	1000
Surprise Creek Lake #4	Westslope Cutthroat	1000
Thirteen Creek Lake #1	Westslope Cutthroat	1000
Thirteen Creek Lake #2	Westslope Cutthroat	1000
Three Lakes Creek Lake #5	Westslope Cutthroat	1000
Three Lakes Creek Lake #6	Westslope Cutthroat	500
West Dennis Lake (Upper)	Rainbow Trout	500
Total		25200

Table 2. Fingerling rainbow trout and kokanee stocked in the waters of the Clearwater Region, 1997.

Water	Month	Rainbow Trout	Kokanee Salmon	Total
Clearwater River	October	5000		5000
Palouse River	May	15050		15050
Salmon River	October	49848		49848
Mann Lake	May	60028	11200	7122
Soldiers Meadow Reservoir	May	10019	5600	15619
Spring Valley Reservoir	May	25026		25026
Waha Lake	May	5031	5600	10631
Winchester Lake	May	30014		30014
Total		200016	22400	222416

Table 3. Catchable size rainbow trout stocked in lakes, ponds, and reservoirs of the Clearwater Region, 1997.

Water	March	April	May	June	July	August	September	October	Total
Camp Grizzly Pond				500					500
Campbells Pond		1000	3000	2000	1000			3424	10424
Dobbyns Pond	251	749	248	255					1503
Dworshak Reservoir		40000							40000
Dworshak Hatchery		6150							6150
Elk Creek Reservoir		7505	9990	10000				3000	30495
Fenn Pond			755	750	1250		750	250	3755
Five Mile Pond				1500	500				2000
Henrys Gulch		506							506
Hordeman Pond		253							253
Levee Pond	400	799	201	255	200			200	2055
Mann Lake	8880	11470	7150					9568	37068
Moose Creek Res.		12510						5000	17510
Powell Pond			1500	500	1000		500		3500
Robinson Pond	1017	1000		1835				3424	7276
Soldiers Meadow Res.		5000	5001		1900				11901
Spring Valley Res.		17556	7444					9988	34988
Tolo Lake								4968	4968
Waha Lake		7500	1001						8501
Wilkins Pond				248					248
Winchester Lake		20005	7495					1050	28550
Total	10548	132003	43785	17843	5850	0	1250	40872	252151

Table 4. Catchable size rainbow trout stocked in rivers and streams of the Clearwater Region, 1997.

Water	April	May	June	July	Aug	Total
American River		500	500	500		1500
Big Elk Creek		500	500	500		1500
Crooked Creek			738	262		1000
Lawyers Creek		496	496			992
Orofino Creek			250	500		750
Palouse River		511	525			1036
Quartz Creek		250	250	119		619
Potlatch River		1007	975			1982
Red River			1000	500		1500
Rhodes Creek		248	250	119		617
Total		3512	5484	2500		11496

JOB PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-22

Project II: Technical Guidance

Subproject II-B: Clearwater Region

Contract Period: July 1, 1997 to June 30,1998

ABSTRACT

Clearwater Region fishery management personnel provided technical review and advice to private individuals, organizations, state and federal agencies, Indian tribes, and public schools on various projects and activities that affect the fishery resources in north central Idaho. Technical guidance also included numerous angler informational meetings, presentations, and letters.

Author:
Ed Schriever
Regional Fishery Biologist

OBJECTIVES

Create improved fish habitat and fishing opportunity in Moose Creek Reservoir, Latah County, ID.

METHODS

Bulldozers and track-mounted excavators were used to excavate dried reservoir substrate. Islands and other features were constructed using compacted soil excavated from adjacent areas in the reservoir. Clearwater Regional personnel and volunteers constructed fishing dock abutments. New fishing docks were built to specifications by prison labor at Idaho Department of Corrections, Orofino ID.

Fish emigrating from Moose Creek Reservoir during draining were trapped and moved to Spring Valley Reservoir and local farm ponds.

RESULTS

Clearwater Region personnel drained Moose Creek Reservoir during July 1998. Lake substrate dried and portions of the middle 1/3 of the reservoir were excavated to provide deeper areas and reduce nuisance aquatic macrophytes. Excavation was performed with heavy equipment. Deeper, plant-free areas will improve predator- prey interactions and fishing access. Excavated material was used to construct two islands and three jetties. Trout bag limits were removed from the reservoir in June. Numerous largemouth bass and bluegill were salvaged and moved to Spring Valley Reservoir. The physical renovation of Moose Creek Reservoir was part of a larger project that included; new docks and fishing platforms, replacing the outlet pipe in the dam and adding seasonal dam boards to the spillway to increase depth 20 inches from June to October.

JOB PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management

Project III: Habitat Management

Subproject III-B: Clearwater Region

Contract Period: July 1, 1997 to June 30,1998

ABSTRACT

We developed initial plans to renovate Moose Creek Reservoir by deepening channels for anglers.

Author:
Ed Schriever
Regional Fishery Biologist

Submitted by:

Tim Cochnauer
Regional Fishery Biologist

Jody Brostrom
Regional Fishery Biologist

Ed Schriever
Regional Fishery Biologist

Larry T. Barrett
Fishery Technician

Approved by:

Cal Groen
Regional Supervisor