

IDAHO DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

FEDERAL AID IN SPORT FISH RESTORATION

FISHERY MANAGEMENT PROGRAM
F-71-R-19

ANNUAL FISHERIES MANAGEMENT PERFORMANCE REPORTS* 1994



Project I.
Project II.
Project III.
Project IV.
Project V.

Surveys and Inventories
Technical Guidance
Habitat Management
Population Management
Coordination

*Copies of complete reports available from IDFG, P.O. Box 25, Boise, Idaho 83707

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This document contains abstracts of reports for the five projects under the Federal Aid in Sport Fish Restoration grant F-71-R-19, Fish Management. Abstracts are provided by subproject for each of eight Administrative/Management regions within the state. No work was reported for Subprojects III-B, IV-B, III-C, III-D, III-E, III-H, and IV-H. Project V (Coordination) has no subprojects.

**IDAHO
DEPARTMENT OF FISH AND GAME**

Jerry M. Conley, Director

**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
PANHANDLE REGION (Subprojects I-A, II-A, III-A, IV-A)**

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

By

**Lance Nelson, Regional Fishery Biologist
James A. Davis, Regional Fishery Biologist
Ned Horner, Regional Fishery Manager**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-A: Panhandle Region
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Noseeum and Steamboat lakes were surveyed in September 1994. Both lakes are located in the Little North Fork Clearwater River drainage. The lakes are within 2 km of the trailhead and receive heavy fishing pressure. The annual stocking of Steamboat Lake with Arctic grayling *Thymallus arcticus* appears to be adequate for the fishing pressure. The length range of grayling sampled was 160 to 300 mm and mean length was 185 mm, with a total of 44 fish sampled. The biennial stocking of Noseeum Lake does not appear to be adequate for the fishing pressure. A total of 13 cutthroat trout *Oncorhynchus clarki* were collected. The length range was 160 to 230 mm, with a mean length of 176 mm. Catch rate in Noseeum and Steamboat lakes were 2 fish/h and 4.9 fish/h, respectively. Stocking of Noseeum Lake should be increased to every year.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-A: Panhandle Region
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

A creel survey was conducted on Hayden Lake from July 1 to November 30, 1994. Anglers fished for an estimated 28,374 hours. Anglers caught an estimated 28,131 fish for a catch rate of 0.99 fish/h. No fin-clipped rainbow trout *Oncorhynchus mykiss* or cutthroat trout *O. clarki* were observed in the creel. This may be a result of marked trout not obtaining legal size, 356 mm (14 inches), and the creel survey beginning after the major trout fishing season was over. In 1995, the creel survey will be conducted from March or April through June 1.

Survey questionnaires were mailed to Hayden Lake property owners and handed out to anglers fishing Hayden Lake. Anglers and lake front property owners supported the quality fishery management program on Hayden Lake.

An angler creel census was conducted on Priest Lake from January 1 to December 31, 1994. An estimated 62,602 hours of effort were expended in 17,198 angler days. Nonresident anglers accounted for 51% of the effort. Anglers harvested an estimated 13,987 lake trout *Salvelinus namaycush* with an average weight of 1.4 kg/fish. Yield of lake trout from Priest Lake in 1994 was estimated at 19,632 kg or 2.05 kg/ha. The average catch rate for lake trout in 1994 was 5 h/fish.

Of the 116 angler questionnaires returned, 108 anglers were specifically fishing for lake trout. Seventy-five percent of the angler questionnaire respondents considered "trophy" size lake trout to be fish in excess of 20 pounds (9.1 kg).

The estimated number of kokanee *O. nerka kennerlyi* in Coeur d'Alene Lake in 1994 was the highest since 1979. The increase in kokanee abundance was due to the high number of age 1 and age 2 kokanee. Mean length of kokanee spawners was 248 mm and 228 mm for male and female kokanee, respectively.

The number of chinook salmon *O. tshawytscha* redds counted in the Coeur d'Alene and St. Joe rivers in 1994 totaled 118. A total of 17,267 chinook salmon fingerlings were stocked into Coeur d'Alene Lake in 1994.

Two midwater trawl estimates of kokanee population abundance were made in Lake Pend Oreille in 1994. The August estimate totaled 4,350,000 kokanee and the September estimate totaled 9,680,000 kokanee.

Hatchery personnel released 383,550 age 0 kokanee in Spirit Lake on May 27, 1994. The Spirit Lake kokanee population was estimated at 189,000 fish during August trawling.

A total of 61,030 one- and two-year-old westslope cutthroat trout *O. clarki lewisi* were released from eight net pens located in Ellisport, Scenic, and Garfield bays on Lake Pend Oreille in April and May of 1994.

Standard lowland lake surveys were conducted on three lakes in the lower St. Joe River drainage. The fish populations in Benewah, Chatcolet, and Round lakes appear to have good species diversity and reasonable growth rates. The largemouth bass *Micropterus salmoides* population for all three lakes combined had a Proportional Stock Density of 47.6. Most of the relative weight values for largemouth bass were between 85 and 105, which indicated a balanced population. Some channel catfish *Ictalurus punctatus* stocked into the St. Joe and St. Maries rivers in 1989 and 1990 have moved down into Chatcolet Lake. The most abundant fish species collected by gill nets, trap nets, and electrofishing were brown bullheads *Ameiurus nebulosus*, followed by yellow perch *Perca flavescens*, northern squawfish *Ptychocheilus oregonensis*, and suckers *Catostomus sp.* In Round Lake, the alkalinity was 30 mg/L in 1994, a decline from 60 mg/L in spring 1966. The pH, dissolved oxygen, and temperature did not differ significantly from data collected in 1966.

Standard lowland lake surveys were conducted on Blue and Chase lakes in Bonner County. Channel catfish have established and provided a unique fishing opportunity in Blue Lake. Chase Lake produced some of the largest yellow perch in northern Idaho.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-A: Panhandle Region
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Westslope cutthroat trout *Oncorhynchus clarki lewisi* densities estimated from snorkeling transects in the catch-and-release sections of the North Fork Coeur d'Alene, Little North Fork Coeur d'Alene, and St. Joe rivers were 98, 26, and 133 trout/ha, respectively. Cutthroat trout densities in the catch-and-keep sections of the same rivers were 35, 3, and 29 trout/ha, respectively.

The number of trout estimated by electrofishing in transects in the catch-and-release and catch-and-keep sections of the North Fork Coeur d'Alene River were 42 trout/ha and 26 trout/ha, respectively.

The number of trout estimated by electrofishing in transects in the catch-and-release and the catch-and-keep sections in the Little North Fork Coeur d'Alene River were 137 trout/ha and 64 trout/ha, respectively. In both transects, trout were concentrated in two sections where the shoreline was rip-rapped. The remainder of the transects were almost devoid of trout.

The total number of bull trout *Salvelinus confluentus* redds counted in the Pend Oreille, Priest, and St. Joe river drainages in 1994 were 516, 28, and 61, respectively. No bull trout redds were observed in the upper Little North Fork Clearwater River and Marble Creek drainages in 1994.

Bull trout adults and juveniles were observed in the Priest Lake drainage during summer surveys in Lion, Two Mouth, and Indian creeks. No bull trout were found in Granite or South Fork Granite creeks in 1994.

The number of kokanee *O. nerka kennerlyi* spawners counted in Boundary, Long Canyon, Parker, and Smith creeks in the Kootenai River drainage in 1994 were 6, 0, 6, and 50+, respectively.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project II: Technical Guidance

Subproject II-A: Panhandle Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Region 1 fisheries management personnel provided private individuals, organizations, public schools, and state and federal agencies with technical review and advice on various projects and activities that affect the fishery resources in northern Idaho. Technical guidance also included numerous angler informational meetings, presentations, letters, development of the Panhandle Region portion of the 1-800-ASK-FISH program, and fishing clinics.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project III: Habitat Management

Subproject III-A: Panhandle Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

In November of 1994, assistance was provided to the Lake Pend Oreille Idaho Club to design and obtain permits for a rock check dam and removable fishway to aid in the passage of spawning kokanee salmon *Oncorhynchus nerka kennerlyi* from Lake Pend Oreille into Trestle Creek.

During the winter of 1994-1995 and the early spring of 1995, the fishway at the outlet of McArthur Reservoir was rebuilt to facilitate fish passage into McArthur Reservoir from Deep Creek.

During March of 1995, a rock check dam and removable fishway were installed near the mouth of Yellowbanks Creek, a tributary to Hayden Lake, to improve upstream fish passage through a road culvert.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project IV: Population Management

Subproject IV-A: Panhandle Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

No waters in the Panhandle Region were renovated with rotenone during this contract period.

One private fish pond, located in the Hayden Lake drainage, was gillnetted to remove an unwanted fish species.

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**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
CLEARWATER REGION (Subprojects I-B, II-B)**

- | | |
|--------------------|--|
| 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 |

By

**Ed Schriever, Regional Fishery Biologist
Tim Cochnauer, Regional Fishery Manager
Jody Brostrom, Regional Fishery Biologist
Stephen Dove, Fishery Biological Aide**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-B: Clearwater Region
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Thirteen mountain lakes were surveyed in the North Fork Clearwater River drainage of the Clearwater National Forest during August and September 1994. Jack Lake and Mush Lake were found to be fishless, while Heather Lake and Ice Lake supported abundant populations of brook trout *Salvelinus fontinalis*. Of the 13, only 5 were recommended for continued stocking. Pete Ott Lake and Tillie Lake are recommended to be resurveyed in 1996.

Author:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-B: Clearwater Region
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Standard survey in Soldiers Meadow Reservoir indicates rainbow trout *Oncorhynchus mykiss* stocked as fingerlings dominate the fish community. Recent illegal introductions of black crappie *Pomoxis nigromaculatus* have established a population. Black crappie are documented to reach lengths in excess of 300 mm and are providing sport fishing opportunity in Soldiers Meadow Reservoir. Game fish dominated the survey, accounting for 98.2% of the sample.

Standard survey in Waha Lake indicates that lowering stocking rates of kokanee *O. nerka kennerlyi* has resulted in larger size kokanee in the fishery. Smallmouth bass *Micropterus dolomieu* are the most abundant game fish in Waha Lake. Game fish made up 100% of the fish community sampled in Waha Lake.

Largemouth bass *M. salmoides* in Spring Valley Reservoir continue to show improvement in both age and size structure as a result of forage introduction.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-B: Clearwater Region
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Clearwater Region personnel snorkeled 133 stream transects within the Clearwater, Snake, and Salmon river drainages. Chinook salmon *Oncorhynchus tshawytscha* juvenile numbers continued to be low throughout the drainages sampled. Only 28 adult chinook salmon redds were counted in traditional transects in 1994.

The Selway River steelhead trout *O. mykiss* broodstock program entered its second year. Thirty-one adult fish were collected in 1994 yielding 101,000 eggs to the program. The first releases of offspring were made into Crooked River. Approximately 72,000 juveniles were released along with a 104,000 companion group of hatchery origin fish.

Two hundred and three hatchery origin rainbow/steelhead trout were collected from the three main rivers within the region. Diet analysis revealed only one unidentified fish in the 203 stomachs.

Management personnel captured 105 white sturgeon *Acipenser transmontanus* from the Snake River and 2 from the Salmon River. All were tagged with Passive Integrated Transponder (PIT) tags.

Rainbow trout were the most abundant fish observed throughout the North Fork Clearwater River drainage. Kokanee salmon *O. nerka kennerlyi* spawner numbers in the drainage were the second highest on record.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project II: Technical Guidance Subproject II-B: Clearwater Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Clearwater Region fish management personnel offered technical guidance to 18 state, federal, and tribal agencies and 53 private entities on timber sales, mining, stream channel alteration permits, hydropower development, farm pond permits, and other proposed activities.

We investigated three fish kills, one each on Tommy Taha Creek, Middle Fork Clearwater River, and Winchester Lake. All of these kills were attributed to warm water conditions during the late summer.

We sponsored or co-sponsored 12 youth fishing clinics throughout the region on Free Fishing Day. We also sponsored youth educational clinics for fly fishing and steelhead fishing.

We produced printed informational brochures on fishing the Selway and Lochsa rivers.

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**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
MCCALL SUBREGION (Subprojects I-C, II-C, IV-C)**

PROJECT I.	SURVEYS AND INVENTORIES
Job a.	McCall Subregion Mountain Lakes Investigations
Job b.	McCall Subregion Lowland Lakes Investigations
Job c.	McCall Subregion Rivers and Streams Investigations
Job d.	McCall Subregion Salmon and Steelhead Investigations
PROJECT II.	TECHNICAL GUIDANCE
PROJECT IV.	POPULATION MANAGEMENT

By

**Paul J. Janssen, Regional Fishery Biologist
Donald R. Anderson, Regional Fishery Manager
Kimberly Apperson, Regional Fishery Biologist**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-C: McCall Subregion
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

In a cooperative project with the U.S. Forest Service, 15 mountain lakes were surveyed in 1994 to assess fish population status, physical habitat parameters, and past stocking strategies. In 5 of the 15 lakes sampled, we collected no fish. Three of the lakes contained natural reproducing rainbow trout *Oncorhynchus mykiss* populations. Brown trout *Salmo trutta* were unexpectedly found in one lake. Arctic grayling *Thymallus arcticus* were collected from two of the lakes.

Authors:

Paul Janssen
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-C: McCall Subregion
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

In 1994 on Payette Lake, we completed a standard lake survey and conducted our annual kokanee *Oncorhynchus nerka kennerlyi* age class population estimate. Eleven species of fish were collected in a total of 907 fish from 14 gill net units of effort. We found that largescale suckers *Catostomus macrocheilus* and squawfish *Ptychocheilus oregonensis* made up 68% and lake trout 22.5% of the total biomass of fish.

Due to concerns of vulnerability and possible overharvest of lake trout *Salvelinus namaycush*, we also began the process of repeating the lake trout reward tagging study that was begun in 1988. In 1994, we also tagged eight lake trout with sonar transmitter tags. We used sonar tags to determine fish movement, population isolation, and spawning location.

We estimated the total population size of wild age 0+ kokanee in Payette Lake on August 10, 1994 to be 152,689 fish. We estimated survival of the wild age 0+ 1993 cohort to age 1+ in 1994 to be 16%. Estimated mean densities (fish/ha) of age 0+ and 1+ were 89 and 27 fish/ha, respectively.

In Little Payette Lake during the last three years, squawfish and largescale sucker biomass had increased significantly to where it threatened the trophy rainbow trout fishery. In 1994, we surveyed the fish population to monitor trout growth (using marked fish), condition, and relative abundance of nongame fish populations.

On October 28, 1994, we set six standard lake survey gill nets in Little Payette Lake. We collected six species in a 186 fish sample. Rainbow trout made up 38.5% of the biomass and 57% by number of all fish collected. Of the rainbow trout collected, 15% were greater than 16 inches. Average condition factors were low for all length groups of rainbow trout at 0.85 and 0.90 for fish less than and greater than 16 inches, respectively. Average daily growth was slow at 0.24 and 0.38 mm for fish stocked in 1993 and 1994, respectively.

We completed a comprehensive creel survey and a standard lake survey on Horsethief Reservoir in 1994. In 1993, we received reports of, and then verified, that yellow perch *Perca flavescens* had become reestablished in Horsethief Reservoir. We estimated that a total of 78,900 angler hours, or 285 angler h/acre, were spent fishing on Horsethief Reservoir. We estimated that 39,721 fish were harvested for an average catch rate of 0.503 fish/h. Of the total catch, 32,216 or 81.1% were rainbow trout and 4,077 or 10.3% were yellow perch. The remainder of fish harvested were trout of various species.

Results of the standard lake survey showed that by number yellow perch, rainbow trout, brown trout, and splake made up 88%, 8.5%, 2% and 1.5%, respectively. In biomass, these same four species made up 51.5%, 29.6%, 12.8%, and 6%, respectively.

Cascade Reservoir has been stocked annually with 150,000 to 300,000 8- to 10-inch rainbow trout and up to 600,000 coho *O. kisutch* and/or kokanee salmon. To help monitor stocking success, we gillnetted the lake in July 1994. During the weeks of July 26 and August 2, 1994, we set three midwater gill nets at six different locations on six different days. The three nets were suspended from the surface to fish just above, at, and just below the thermocline. We fished gill nets a total of 366 net hours to collect a total of 27 salmonids. Of those collected, there were 15 kokanee, 11 rainbow trout, and 1 coho salmon.

Both Upper Payette Lake and Granite Lake were stocked in the fall of 1992 with 165 mm (6.5-inch) splake *S. fontinalis* x *S. namaycush*. Upper Payette Lake was also stocked on June 30, 1993 with 330 mm (13-inch) splake, all of which were marked with an adipose fin clip. These lakes were gillnetted in 1994 to track growth and condition of these fish.

In Granite Lake and Upper Payette Lake, we collected 21 and 23 splake, respectively. In Granite Lake, splake averaged 281 mm and 220 g, with a condition factor of .915. In Upper Payette Lake, we collected only one splake from the original 1992 stocking. This fish was in poor condition at 210 mm and 70 g and a condition factor of .75. The 22 splake collected from the second stocking averaged 341 mm and 387 g, with a condition factor of 0.90.

An angler survey conducted on Warm Lake from May 28 through September 16 revealed that hatchery catchable rainbow trout comprised 96% of the harvest. Forty-seven percent of the fish stocked in 1994 were harvested. Anglers fished 17,405 hours throughout the summer. The average catch rate was 0.48 fish/h. The gill net sample collected in July was dominated by whitefish and suckers. Anglers were generally satisfied with the fishing.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-C: McCall Subregion
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

The North Fork Lake Fork Creek drainage was involved in a forest fire during the summer of 1994. We completed a standard stream survey on the North Fork Lake Fork, which flows directly through the burn area, and on the South Fork Lake Fork, which was not effected by any of the fires.

We conducted a creel survey on the Salmon River between Corn Creek and Wind River from June 17 through September 8, 1994. Of the 1,143 people interviewed, 191 had fished at some time during their float trip down the river. Those 191 people fished a total of 1,441.5 hours for an average of 7.5 h/angler. They caught a total of 527 fish, of which only 16 were harvested. The species harvested included eight rainbow trout, two cutthroat trout *O. clarki*, two bull trout *S. confluentus*, and four smallmouth bass. The cutthroat trout and bull trout were illegally taken.

The spawning run of kokanee *O. nerka kennerlyi* in the North Fork Payette River from Payette Lake has been monitored since 1988 to assess spawning escapement and to serve as a method of validating kokanee population/density estimates and survival estimates from trawling. We made the peak count of 25,550 live kokanee on September 19, 1994 and calculated a total run estimate of 44,201 fish in 1994.

Currently, timber in this drainage is being harvested at a significant rate by both the U.S. Forest Service and the Idaho Department of Lands. To determine if any of these streams are suffering from impacts of logging activities in terms of temperature stress, we set *thermographs* in the North Fork Payette River at two locations, in three tributaries, and in one spring. We found no obvious problems with temperature profiles in the North Fork Payette River and its tributaries that we sampled.

An angler survey and population estimate of the East Fork South Fork Salmon River and lower Johnson Creek indicated exploitation of steelhead parr was 11%, with bounds on the estimate of 5% to 19%. Densities of steelhead parr appear to be higher than in 1984 and 1985, though physical conditions for snorkeling and sites sampled were not consistent among years.

Anglers were guided by Wapiti Ranch Outfitters in a three-mile section of the South Fork Salmon River below the confluence with the East Fork. All fishing was catch-and-release. Catch rate for cutthroat, rainbow/steelhead, bull trout, and mountain whitefish *Prosopium williamsoni* combined was 2.27 fish/h. Cutthroat trout dominated the fishery. Snorkeling indicated average densities of cutthroat at 0.14 fish/100 m².

Temperature recorders monitored the upper Little Salmon River throughout the summer. July and August temperatures in 1994 averaged from 15°C to 20°C, and were often higher than temperatures tolerated by rainbow trout.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-C: McCall Subregion
Job: d Title: Salmon and Steelhead Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

McCall Subregion salmon and steelhead investigations are incorporated in a separate, statewide "Salmon and Steelhead Investigations" report.

Author:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project II: Technical Guidance

Subproject II-C: McCall Subregion

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

McCall Subregion fishery management personnel responded to 211 requests and opportunities for technical input. Comments were provided to state and federal agencies on proposed activities for which they have regulatory authority. Advice and technical assistance were provided for private businesses and the public on activities associated with fish, or having impacts on, fish populations or fish habitat. The major topics of involvement included stream channel alterations, logging, mining, and land management planning.

We also gave presentations to schools, sportsmens groups, and civic organizations. We answered many questions from the public on fishing opportunities, rules, techniques, and specific waters.

Author:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project IV: Population Management

Subproject IV-C: McCall Subregion

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

We enhanced fish populations and fishing in the McCall Subregion waters by stocking approximately 1.46 million salmonids.

We chemically eradicated Lost Valley Reservoir with rotenone to remove yellow perch *Perca flavescens* in October 1994. This treatment was done to enhance growth and survival of stocked rainbow trout *Oncorhynchus mykiss*.

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**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
SOUTHWEST REGION (Subprojects 1-D, II-D, IV-D)**

- PROJECT I. SURVEYS AND INVENTORIES**
 - Job a. Southwest Region Mountain Lakes Investigations**
 - Job b. Southwest Region Lowland Lakes Investigations**
 - Job c. Southwest Region Rivers and Streams Investigations**
 - Job d. Southwest Region Salmon and Steelhead Investigations**
- PROJECT II. TECHNICAL GUIDANCE**
- PROJECT IV. POPULATION MANAGEMENT**

By

**Dale B. Allen, Regional Fishery Biologist
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-D: Southwest Region
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Gill nets were set in 11 lakes and visual observations were made in 3 additional lakes in the Goat Creek drainage to determine the status of fish populations and to monitor the effectiveness of the mountain lakes stocking program. Westslope cutthroat trout *Oncorhynchus clarki lewisi* were found in Upper and Lower Bead, Lone Warbonnet, Warbonnet, Blue Rock, Feather, Cony, McWillards, Little McWillards, Oreamnos, Packrat, Three, and Limber lakes. Brook trout *Salvelinus fontinalis* were found in Meadow Lake and Three Lake. Stocking records indicate westslope cutthroat trout are stocked every two years in Upper and Lower Bead, Blue Rock, Feather, Cony, McWillards, Oreamnos, Packrat, Three, and Limber lakes. Based on stocking records and evaluation of length frequencies of gillnetted fish, natural production is likely occurring in most lakes.

Gill net sampling and visual observations were conducted on 13 high mountain lakes near Red Mountain, the Cat Creek lakes chain, and two lakes on Cache Creek, a tributary to Bear Valley Creek drainage, during September 1994. The sampling was done to document the species composition and the success of the high lake stocking program. All Red Mountain lakes contained westslope cutthroat trout. Westslope cutthroat were present in five of six Cat Creek lakes. Rainbow trout *O. mykiss* were present in Cat Creek Lake Number 1 (the lowest lake of the chain) and in the two lakes on Cache Creek. Fish length frequencies and scale analysis indicate problems with lake naming or identification from the air while stocking, because few of the lakes' fish populations could be matched with the stocking records. The stocking program has generally created excellent fisheries; adjustments were recommended to better organize and fine-tune stocking rates.

Authors:

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Steven P. Yundt
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-D: Southwest Region
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Gill nets and trap nets were set in Lucky Peak Reservoir in May, and gill nets were set in June to document species composition and relative abundance of the fish population. In May, game fish species contributed 18.23% of the total weight of netted fish, with bull trout *Salvelinus confluentus*, hatchery rainbow trout *Oncorhynchus mykiss*, smallmouth bass *Micropterus dolomieu*, splake *S. fontinalis* x *S. namaycush*, whitefish *Prosopium williamsoni*, and yellow perch *Perca flavescens* contributing 3.90%, 7.74%, 2.61 %, 0.62%, 2.80%, and 0.56%, respectively. In June, game species contributed 6.4% of the total weight of netted fish, with bull trout, hatchery rainbow trout, splake, whitefish, and yellow perch contributing 0.22%, 3.43%, 0.08%, 2.23%, and 0.44%, respectively.

Floating and sinking gill nets, trap nets, and electrofishing were used to monitor fish populations in Lake Lowell in 1994. Electrofishing catch per hour was 5.24, 9.62, 2.62, 8.74, 95.33, and 20.99 fish/h for brown bullheads *Ameiurus nebulosus*, carp *Cyprinus carpio*, channel catfish *Ictalurus punctatus*, largemouth bass *M. salmoides*, largescale suckers *Catostomus macrocheilus*, and smallmouth bass, respectively. Catch for trap nets was .2, .4, .2, and .2 fish per net night for black crappie *Pomoxis nigromaculatus*, bluegill *Lepomis macrochirus*, carp, and madtom catfish *Noturus gyrinus*, respectively. Catch for sinking gill nets was 6.25, 3.37, .12, 5.87, .25, .5, .12 fish per net night for carp, channel catfish, chiselmouth *Acrocheilus alutaceus*, largescale sucker, rainbow trout, squawfish *Ptychocheilus oregonensis*, and yellow perch per net night, respectively. Catch for floating gill nets was 4.8, 2.0, 27.4, .2, and .2 fish per net night for carp, channel catfish, largescale sucker, smallmouth bass, and squawfish.

One hundred fifty-one largemouth bass and 279 bluegill were salvaged from Beech's pond and transplanted to Lake Lowell.

Gill and trap nets were set in Shoofly, Little Blue Creek, and Bybee reservoirs to document the success of planting Lahontan cutthroat trout *O. clarki henshawi* in these reservoirs. A total of 102, 22, and 2 Lahontan cutthroat trout were collected from Shoofly, Little Blue Creek, and Bybee reservoirs, respectively. Length of netted Lahontan cutthroat trout ranged from 170 to 480 mm, 80 to 510 mm, and 230 to 510 mm in Shoofly, Little Blue Creek, and Bybee reservoirs, respectively.

Two mountain lake gill nets were set overnight in Bull Trout Lake to monitor the status of the fish population. Six Atlantic salmon *Salmo salar*, 86 brook trout, and 2 bull trout were collected. Mean length, weight, and condition factor was 253 mm, 154 g, and .95; 190 mm, 68 g, and .96; and 344 mm, 404 g, and .98, respectively, for Atlantic salmon, brook trout, and bull trout.

An electrofishing survey was done on Paddock Reservoir on October 13, 1994 collected 280 largemouth bass in 2,644 seconds of energized time for a rate of 381 largemouth bass/h. All largemouth bass captured were left ventral fin-clipped and transported to Lake Lowell.

A creel survey was conducted on Sagehen Reservoir from June 1 through October 2, 1994. Anglers fished 27,876 hours to catch 17,840 and harvest 12,026 rainbow trout. Seasonal catch and harvest rates were .64 and .43 rainbow trout/h, respectively. At least 55% of the hatchery rainbow trout planted in the lake were harvested.

Gill and trap nets were set overnight in Sagehen Reservoir the night of April 28 1994. Fifty-eight wild and 26 hatchery rainbow trout were collected. Mean length of wild and hatchery trout collected was 288 and 296 mm, respectively. No other species was collected.

A creel survey was conducted on the Wilson Pond Complex immediately behind the Idaho Department of Fish and Game regional office in Nampa. Anglers fished 64,217 hours to catch and harvest 38,273 and 14,357 fish, respectively. Annual harvest and catch rates were 0.22 and 0.60 fish/h, respectively. Of the total angling use, 88.2% occurred on waters where anglers were allowed to harvest fish. Of the total number of anglers interviewed, 74.9%, 6.6%, and 18.5% fished with bait, lures, and flies as terminal tackle.

Cove Arm off of C.J. Strike Reservoir was gill net sampled on May 11, 1994. A total of 190 fish were collected, lengths and weights were taken, and means and S.E. were calculated.

Mountain Home Reservoir was sampled with 2 gill nets and 2 trap nets on May 10, 1994. The reservoir was drained for irrigation water by the summer of 1994, and all fish were lost.

Gill nets and trap nets were set in Caldwell Ponds #1 and #2, Caldwell City Pond, Duff Lane, and Sawyers Pond to monitor fish populations. Catch-per-unit-effort for both numbers of fish collected and weight of fish collected per net night were calculated.

Indian Creek Reservoir was sampled May 10, 1994 to assess the success of restocking after the October 1992 rotenone renovation. Largemouth bass, bluegill, and brown bullhead adults had been stocked in the spring of 1993. Channel catfish were purchased from a commercial source and stocked in the fall of 1993.

Deadwood Reservoir was sampled with gill nets on July 8, 1994 and November 4, 1994. Mean lengths and weights and S.E. were calculated for all species captured.

Crane Falls Lake was sampled with 2 gill nets on May 11, 1994 and electrofished on June 2, 1994. Mean length, weight and S.E. were calculated for fish species captured.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-D: Southwest Region
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Stream surveys were conducted under a U.S. Bureau of Land Management (BLM) cooperative project to continue identifying stream systems that currently contain redband rainbow trout *Oncorhynchus mykiss gairdneri* and compare against any historical survey data. Jump, Reynolds, Battle, and Sheep creeks and a reach of the Owyhee River were sampled in 1994. Stream segment population densities of redband trout greater than 100 mm ranged from 0 to 26.1 trout/ 100 m². Of 11 sample sites, 4 contained redband trout. Reynolds Creek had historically contained redband trout, but was severely impacted by drought conditions, and no trout were captured in the sample sites. Jump Creek and Sheep Creek contained redband trout as had been previously documented. No previous sampling had been conducted on Battle Creek and the reach of Owyhee River, and no trout were captured in these sites. Habitat sampling documented substrate composition, stream bank stability, riparian vegetation, and solar input.

Electrofishing surveys were conducted on the South Fork Payette and Payette rivers to document the presence of bull trout *Salvelinus confluentus* in the drainage from near Garden Valley to Gardena, Idaho. This investigation was a cooperative project with the Boise District BLM to provide information for recreational planning of BLM controlled lands in the drainage. All perennial streams flowing into the study area were also surveyed. No bull trout were found during the surveys.

Stream electrofishing surveys were conducted in the Boise River within the Boise metropolitan area. An electrofishing raft was utilized in the fall of 1993 to collect fish in the reach between Barber Park and Municipal Park. In March 1994, a five-probe hand-held electrofishing method was employed to sample the fishery and obtain population estimates. Results were compared against previous samples, although methods differed significantly. In general, all species densities were reduced in the Boise River. Winter flows were identified as the probable cause of continued fish population declines.

Eight sites on the Middle Fork Boise River inside of the special rule waters were sampled using a three-pass removal electrofishing method. Population estimates for wild rainbow trout *O. mykiss* were calculated for seven reaches and averaged 1.26 trout > 100 mm/100 m²; densities ranged from 0.28 to 3.19 trout > 100 mm/100 m². A total of 6 bull trout were captured and ranged in size from 130 to 590 mm. Standard IDFG habitat measurements were collected at each sample site.

Eleven sites in the upper Squaw Creek drainage above Ola were sampled, and population densities of redband trout were calculated. Ten of 11 sites contained redband trout and three contained bull trout. Densities of redband trout ranged from 0 to 30.2 trout > 100 mm/100 m². Densities of bull trout ranged from 0 to 0.36 bull trout/100 m². These bull trout were considered unique because of their isolation in the upper end of the drainage and no connectiveness to other populations.

Densities of resident fish were calculated from snorkel observations collected during salmon and steelhead, parr monitoring surveys. Five snorkel transects were completed on Bearskin and Elk creeks, respectively. Thirty-three snorkel transects were completed on Sulphur Creek and four on North Fork Sulphur Creek.

Three electrofishing surveys were conducted on Logger's Creek, an irrigation/side channel on the Boise River in Boise. Habitat measurements confirm very degraded habitat exists in this channel. No adult trout were captured; the area may well serve as a nursery area for natural spawned trout from the river.

One hundred steelhead trout were stocked in the Payette River below Black Canyon Dam on March 10, 1994. All fish were tagged with individually numbered Floy tags prior to release. A creel survey estimated anglers fished 2,104 hours for steelhead between March 10 and April 3, 1994.

Baseball caps were given as rewards to all anglers catching tagged steelhead and returning tags to Idaho Fish and Game personnel or the Emmett Sports Emporium. A total of 20 steelhead was accounted for as harvested or caught and released. Twenty percent of the steelhead planted were harvested or caught and released.

The same 9.6 km section of the South Fork Boise River electrofished in 1993 was electrofished in September 1994. Objectives were to estimate trout population size, biomass, and growth rates. Comparison of 1994 estimates with 1993 estimates will document annual variability in population estimates. Work goals are to estimate baseline population parameters and to determine trout population limiting factors.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-D: Southwest Region
Job: d Title: Salmon and Steelhead Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Regional fisheries staff conducted snorkel surveys for chinook salmon *Oncorhynchus tshawytscha* parr monitoring in Bearskin, Elk, and Sulphur creeks in 1994. Snorkeling was also conducted for chinook supplementation sites in Sulphur and the North Fork Sulphur creeks. A total of 25, 117, and 124 chinook parr were observed in the parr monitoring sites of Bearskin, Elk, and Sulphur creeks, respectively. Sulphur Creek supplementation monitoring sites contained 719 chinook juveniles. The North Fork Sulphur Creek supplementation sites contained no juvenile chinook.

Salmon spawning ground surveys were conducted in Bear Valley, Elk, and Sulphur creek trend areas on August 22-25, 1994. Redds numbered 10, 8, and 0 in Bear Valley, Elk, and Sulphur creek trend areas, respectively. Redd count trend areas in 1994 were 6.7%, 1.9%, and 0% of trend data area counts in 1993.

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project II: Technical Guidance Subproject II-D: Southwest Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Regional fisheries staff continue to provide a large amount of information about regional and statewide fisheries to the general public. Staff coordinated with the Natural Resource Policy Bureau staff biologists on comment letters on various topics. Several publications were developed during the year by regional fisheries staff, including:

Allen, D.B., B.J. Flatter, and K. Fite. 1995. Redband Trout (*Oncorhynchus mykiss gairdneri*) Population and Habitat Surveys in Jump, Reynolds, and Sheep creeks, and Sections of the Owyhee River, Owyhee County, Idaho. Idaho Bureau of Land Management, Technical Bulletin No. 95-6. March 1995.

Allen, D.B., S.P. Yundt, and B.J. Flatter. 1995. Populations of Bull Trout (*Salvelinus confluentus*) in the Payette River Drainage in the Cascade Resource Area of the Boise District of the Bureau of Land Management. Idaho Bureau of Land Management, Technical Bulletin No. 95-10. April 1995.

State of Idaho. 1994. Pre-decisional Draft Working Document, Bull Trout Conservation Strategy, Boise, Idaho.

Authors:

Dale B. Allen
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project IV: Population Management

Subproject IV-D: Southwest Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Warmwater fish species were captured and transferred to eight small drought-affected lakes or reservoirs to rebuild fish populations. A total of 1,388 largemouth bass *Micropterus salmoides*, 4,235 bluegill *Lepomis macrochirus*, 3,000 channel catfish *Ictalurus punctatus*, 2,812 crappie *Pomoxis sp.*, and 5,000 yellow perch *Perca flavescens* were stocked.

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**IDAHO
DEPARTMENT OF FISH AND GAME**

Jerry M. Conley, Director

**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
MAGIC VALLEY REGION (Subprojects I-E, II-E, IV-E)**

PROJECT I.	SURVEYS AND INVENTORIES
Job a.	Magic Valley Region Mountain Lakes Investigations
Job b.	Magic Valley Region Lowland Lakes Investigations
Job c.	Magic Valley Region Rivers and Streams Investigations
PROJECT II.	TECHNICAL GUIDANCE
PROJECT IV.	POPULATION MANAGEMENT

By

**Charles D. Warren, Regional Fishery Biologist
Fred E. Partridge, Regional Fishery Manager**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-E: Magic Valley Region
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

A total of 43 high mountain lakes were stocked with rainbow trout *Oncorhynchus mykiss* and cutthroat trout *O. clarki* fry (see subproject IV-E, this report). No surveys and inventories were done on high mountain lakes within this region for this contract period.

Author:

Charles D. Warren
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-E: Magic Valley Region
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Standardized lowland lakes sampling protocols were followed on the Bruneau Sand Dunes ponds, Lower Salmon Falls Reservoir, Little Camas Reservoir, and several of the Hagerman Wildlife Management Area warmwater fish ponds. Results from the Bruneau Sand Dunes ponds indicate that the 20-inch (505 mm) minimum length limit for largemouth bass *Micropterus salmoides* has created a good population of fish in the 200 to 450 mm length range, with a fair number of bluegill *Lepomis macrochirus* and pumpkinseed *L. gibbosus* also present. The presence of numerous carp *Cyprinus carpio* in the upper pond has caused the water to become turbid, thus possibly decreasing pond productivity. The Lower Salmon Falls Reservoir survey sampled several species of nongame fish, hatchery rainbow trout *Oncorhynchus mykiss*, brown trout *Salmo trutta*, largemouth bass, smallmouth bass *M. dolomieu*, and bluegill. The Hagerman Wildlife Management Area pond surveys sampled largemouth bass, bluegill, brown bullhead *Ameiurus nebulosus*, and yellow perch *Perca flavescens*. One carp was also sampled from the West Highway Pond. Little Camas Reservoir survey results indicated a high density of small black crappie *Pomoxis nigromaculatus* present, with some hatchery rainbow trout and smallmouth bass.

Electrofishing on Salmon Falls Creek Reservoir sampled smallmouth bass, walleye *Stizostedion vitreum*, yellow perch, rainbow trout, and kokanee *O. nerka kennerlyi*. Nighttime midwater trawling sampled 95 kokanee from age 0+ through age 2+, and bottom trawling sampled 13 walleye ranging in total length from 150 to 190 mm. Beach seining on Salmon Falls Creek Reservoir indicated good numbers of young of the year yellow perch and spottail shiners *Notropis hudsonius* as forage. Oakley Reservoir beach seining results indicated spottail shiners still present.

Nighttime midwater trawling on Anderson Ranch Reservoir sampled 287 kokanee ranging from age 0+ through age 2+. Kokanee of hatchery and wild origin were present in the age 0+ sample. Kokanee spawner trend surveys on the upper South Fork Boise River counted a total of 1,362 adult kokanee in 1994, the second highest number observed since counts began in 1989. These fish were smaller than the previous year's mature kokanee, with mean size in 1994 being 248 mm compared 380 to 400 mm average length in 1993 and 1992.

Author:

Charles D. Warren
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-E: Magic Valley Region
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Salmon Falls Creek downstream of Salmon Falls Creek Dam to Balanced Rock was extensively surveyed. Good populations of smallmouth bass *Micropterus dolomieu* and wild rainbow trout *Oncorhynchus mykiss* were found in the lower reaches and wild rainbow trout and brook trout *Salvelinus fontinalis* within the upper reaches. Habitat has been impacted by a lack of annual natural flushing flows.

The South Fork Boise River was electrofished near the mouth of Deadwood Creek. Results indicate slight increases in numbers and size of wild rainbow trout, decreases in numbers of mountain whitefish *Prosopium williamsoni* in most size classes, and a decrease from ten bull trout *Salvelinus confluentus* sampled in 1991 to three sampled in 1994.

The Big Wood River highway diversion channel and a downstream control reach were snorkeled for fish counts. Observations indicate some use of the artificial stream channel by all size classes of rainbow trout and mountain whitefish. Densities were similar in both channels for rainbow trout > 100 mm at 3.3 and 4.0/100 m², however fry densities were higher in the artificial channel (14.0/100 m²) compared to the control channel (3.3/100 m²).

Fish were sampled in Trout Creek, a tributary to Goose Creek, within and outside of a livestock enclosure. A total of 28 cutthroat trout *O. clarki* were sampled within the enclosure and 20 upstream of the enclosure.

Other work performed included obtaining temperature data with continuously recording thermographs on the Bruneau, Jarbidge, and Big Wood rivers. A habitat assessment was done on Cedar Draw Creek, a private habitat improvement project on lower Silver Creek was investigated, and we assisted the Department of Environmental Quality with numerous stream surveys. We also assisted the U.S. Bureau of Land Management with fishery surveys on Birch and Cold creeks, tributaries to Goose Creek.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project II: Technical Guidance Subproject II-E: Magic Valley Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Magic Valley Region fishery management personnel furnished verbal and written comments of technical guidance to other agencies, consultants, and private individuals and organizations. Fishing information was provided to anglers in the forms of brochures, angler guides, public meetings, news releases, by telephone, and in person.

Many miscellaneous activities were commented on, participated in, or otherwise addressed, and numerous meetings regarding fisheries were attended.

Investigation of a waste water treatment pond break on March 29, 1994 found fish had been killed up to 8 km downstream with nearly 100% kill in the first 5 km in Rock Creek, Twin Falls County. Estimated fish loss consisted of 1,338 brown trout *Salmo trutta*, 112 rainbow trout, 718 sucker *Catostomus sp.*, and 2,853 dace *Rhinichthys sp.*, sculpin *Cottus sp.*, and chiselmouth chub *Acrocheilus alutaceus*.

Author:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project IV: Population Management Subproject IV-E: Magic Valley Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Fish populations and fishing in the Magic Valley Region was enhanced by stocking approximately 2.37 million fingerlings and fry and 0.66 million catchable size fish into lakes, reservoirs, rivers, and streams accessible by vehicle. High mountain lakes were stocked with 28,800 rainbow trout *Oncorhynchus mykiss* and cutthroat trout *O. clarki* fry.

Little Camas Reservoir was chemically renovated in October 1994 with rotenone after one unit of lowland lakes sampling protocol indicated the presence of large numbers of black crappie *Pomoxis nigromaculatus* present. Prior to treatment, 12,000 black crappie were transplanted to Salmon Falls Creek Reservoir.

Author:

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**IDAHO
DEPARTMENT OF FISH AND GAME**

Jerry M. Conley, Director

**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
SOUTHEAST REGION (Subprojects I-F, II-F, III-F, IV-F)**

PROJECT I.	SURVEYS AND INVENTORIES
Job b.	Southeast Region Lowland Lakes Investigations
Job c.	Southeast Region Rivers and Streams Investigations
PROJECT II.	TECHNICAL GUIDANCE
PROJECT III.	HABITAT MANAGEMENT
PROJECT IV.	POPULATION MANAGEMENT

By

**Richard J. Scully, Regional Fishery Manager
James Mende, Regional Fishery Biologist**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-F: Southeast Region
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

We established a mandatory check station at the Interstate 15 Port of Entry near Inkom to survey anglers returning from fishing trips during the three-day Memorial Day weekend. We obtained catch and fishing effort information from 819 anglers who had fished at 20 reservoirs and at Bear Lake. They fished 4,570 hours and had a catch rate of 1.0 fish/h. Trout catch rates ranged from 3.3/h at Condie Reservoir to 0.1 /h at Winder Reservoir. Catch rates for warmwater fish, mainly largemouth bass *Micropterus salmoides*, yellow perch *Perca flavescens*, and bluegill *Lepomis macrochirus* ranged from 14.0/h at Lamont Reservoir to 0.4/h at Johnson Reservoir.

We placed HOBO miniature temperature loggers in two locations in Blackfoot Reservoir and another in the mouth of the upper Blackfoot River on April 29. The loggers provided temperature information relative to the suitability of Blackfoot Reservoir for smallmouth bass *M. dolomieu* and their possible interaction with migrating juvenile wild cutthroat trout entering the reservoir from the upper Blackfoot River. Water temperatures warmed gradually through late June into early July. In mid-July, water temperature began to show wide daily swings from highs greater than 30°C to lows around 10°C.

Authors:

Richard Scully
Regional Fishery Manager

James Mende
Regional Fishery Biologist

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-F: Southeast Region
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

We sampled the six stream pairs established in 1991 to assess the response of the fish populations with and without the Area 6 cutthroat trout slot limit. As in 1991, trout density by species and habitat and substrate quality were estimated. No significant increase in fish size was found in any of the streams except Cub River. The average size of Cub River cutthroat trout *Oncorhynchus clarki* increased from 179 mm in 1991 to 207 mm in 1994 ($t_{0.05(1)}$). During the 1995 fishing rules review, the public will be presented with this information and asked for their thoughts concerning the Area 6 slot limit.

We electrofished four sections of the Thomas Fork River in July 1994 to collect information on species composition and cutthroat trout abundance. Population estimates were only made on the upper most and lowest sections due to lack of trout collected. The river, particularly in this area, is highly impacted by irrigation withdrawals and cattle grazing. Cutthroat trout density for the uppermost section was .02 fish/100 m² with a 7.7-inch average length. Cutthroat trout density for the lower section was < .001 fish/100 m² with a 13.7-inch average size. Nongame species, Utah suckers *Catostomus ardens* and redbelt shiners *Richardsonius balteatus*, were the most numerous species collected.

We assisted Paul Cowley (U.S. Forest Service fishery biologist) in collecting cutthroat trout from selected streams in the Caribou and Cache National Forests in extreme southeastern Idaho. The intent was to determine presence or absence of the Bonneville cutthroat trout *O. clarki utah* in Bailey, Beaver, Georgetown, Montpelier, and North Canyon creeks. A 100-m-long reach was sampled at an upper and lower site of each stream. Cutthroat trout were collected from Beaver, Georgetown, and Montpelier creeks. No population estimates were made due to an insufficient number of fish collected. Ten fish from each site were sacrificed to assess subspecies purity.

We established a mandatory check station at the Interstate 15 Port of Entry near Inkom to survey anglers returning from fishing trips during the three-day Memorial Day weekend. We obtained catch and fishing effort information from 230 anglers who had fished at 17 rivers and streams. They had fished 780 hours and had a catch rate of 0.7 fish/h. All fish reported were rainbow trout *O. mykiss*, cutthroat trout, and brook trout *Salvelinus fontinalis*. The highest catch rates were 4.0, 3.3, and 2.0 trout/h at Rapid, Garden, and Whiskey creeks, respectively.

The 1987 through 1992 drought nearly drained the Blackfoot Reservoir and devastated the upper Blackfoot River wild cutthroat population. With a return to greater water volumes in the Blackfoot Reservoir wild cutthroat nursery area, we established an opening day check station to survey the upper Blackfoot River fishery. The station was located near the Sucker Trap, approximately 2 miles upriver from Blackfoot Reservoir. All survey results were from completed fishing trips. We surveyed 36 anglers who fished 155 hours, an average of 4.3 h/angler. They caught 288 trout of which only 5 were kept. Catch rate was 1.9 trout/h. Most (78%) of the trout caught were wild cutthroat. Only one brook trout was caught. The remaining catch was hatchery rainbow trout located only in the lower river reach between the reservoir and the lower narrows. Cutthroat trout released represented several age classes, with anglers releasing fish from 8 to 17 inches long. The legal minimum size limit for cutthroat trout in the upper Blackfoot River is 18 inches. The few fish harvested were 18 and 19 inches long.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project II: Technical Guidance

Subproject II-F: Southeast Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Southeast Region fisheries personnel consulted and provided limited assistance to the regional environmental staff biologist with issues pertaining to fisheries resources. Responsibility for most technical assistance issues dealing with natural resources have been transferred to the Bureau of Natural Resource Policy.

We monitored dissolved oxygen, water temperature, and turbidity twice weekly during the nearly complete drawdown of 1.7 million acre-feet American Falls Reservoir in August and September 1994. This study was done in cooperation with the state's Division of Environmental Quality. Turbidity values in the reservoir exceeded state water quality standards when the reservoir was reduced below 50,000 acre-feet on September 20. The reservoir was further drawn down to a low of 17,000 acre-feet on September 29. Dissolved oxygen and water temperature were adequate for trout survival throughout the study period.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project III: Habitat Management

Subproject III-F: Southeast Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Fisheries personnel worked with the Friends of the Portneuf River, the Division of Environmental Quality, and private land owners on St. Charles Creek and Marsh Creek and the Caribou National Forest to establish riparian corridor fencing. Project goals were to exclude livestock from critical riparian and stream channel habitat as a means of restoring native trout populations. Fisheries received a \$33,700 grant to fence two miles of Marsh Creek on private land; the Friends of the Portneuf River received a \$65,000 grant to fence two miles of the upper Portneuf River; and the Caribou National Forest and permittees received a Soil Conservation Commission grant for \$10,000 to fence sections of the Thomas Fork tributaries. The Department of Fish and Game issued \$18,000 in challenge grants to private land owners on St. Charles Creek to build corridor fence and to assist the Portneuf-Marsh Valley Canal Company in its project to reduce the erosive force of the river in a channelized reach of the upper Portneuf River.

Region personnel assisted by 20 volunteers placed approximately 400 donated Christmas trees in four of the eight McTucker Ponds. The trees were to provide spawning sites and cover for both bluegill and largemouth bass recently planted in the ponds. The trunks were laced together in clumps of five and weighted using a combination of cinder blocks and bricks. Clumps (ten trees) were placed on the ice along the pond's perimeter roughly equidistance from each other. The number of clumps varied with the size of the pond, ranging from 8 in pond #6 to 24 in pond #1.

Authors:

Richard J. Scully
Regional Fishery Manager

James Mende
Regional Fishery Biologist

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project IV: Population Management

Subproject IV-F: Southeast Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Three reservoirs and one small pond were chemically renovated with rotenone to remove undesirable fish species in 1994. Little Valley Reservoir in Bear Lake County near Ovid was treated with 60 gallons (@ 1.5 ppm) to remove a stunted population of yellow perch *Perca flavescens*. Rose Pond in Bingham County near Blackfoot was treated with 30 gallons (@ 1.5 ppm) to remove carp *Cyprinus carpio* and yellow perch. Twin Lakes was treated with 780 gallons (@ 2 ppm) to remove a large population of carp. McTucker Pond #8 in Bingham County near Springfield was treated with 2 gallons to remove carp which had reentered the pond during spring 1994 high water. Roussel Bio Corporation Nu-Syn Noxfish, a 2.5% synergized formulation was used at all sites. The renovations were considered complete in all waters.

Regional personnel, assisted by eight Pocatello High School students, salvaged 440 cutthroat trout from a dewatered section of Cub River. The main flow of the river had been diverted to fill area irrigation reservoirs downstream. The collected fish were transported approximately five miles above the diversion and returned to the river in a series of deep pools capable of overwintering the fish. This dewatering is an annual event, and probably results in a significant loss of cutthroat trout from the lower Cub River.

The third and final year of the evaluation of catchable and fingerling size trout stocked in seven southeast Idaho reservoirs was 1994. The Springfield Reservoir survey was discontinued after discovery that piscivorous birds, mainly double crested cormorants, were removing most of the stocked fish shortly after the fish were planted. The Winder Reservoir evaluation was discontinued based on the first two years of data which documented that fall fingerlings did not survive. The Twin Lakes evaluation was discontinued in 1994 because it was to be renovated that fall to eliminate common carp. Creel surveys and electrofishing continued on Chesterfield, Treasureton, Daniels, and 24-Mile reservoirs. These reservoirs contain only trout. Excellent survival of fall 1993 stocked fingerlings occurred in Treasureton and Chesterfield reservoirs, producing high catch rates in the spring of 1994. Growth was fastest at Chesterfield where the general fishing limit resulted in

removal of a significant part of the population. Growth was slowest at Treasureton because of the very high density of fingerlings stocked in the fall of 1993, followed by a change from general fishing rules to a restrictive harvest slot limit. Growth of trout in Daniels and 24-Mile reservoirs, which are managed for trophy trout, improved slightly, probably in response to the previous two years of reduced stocking density.

Authors:

Richard Scully
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**IDAHO
DEPARTMENT OF FISH AND GAME**

Jerry M. Conley, Director

**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
UPPER SNAKE REGION (Subprojects I-G, II-G, III-G, IV-G)**

- | | |
|----------------------|--|
| PROJECT I. | SURVEYS AND INVENTORIES |
| Job a. | Upper Snake Region Mountain Lakes Investigations |
| Job b ¹ . | Upper Snake Region Lowland Lakes Investigations
Henrys Lake |
| Job b ² . | Upper Snake Region Lowland Lakes Investigations
Island Park Reservoir, Palisades Reservoir, Ririe
Reservoir, Mud Lake, Roberts Gravel Pond |
| Job c ¹ . | Upper Snake Region Rivers and Streams Investigations
South Fork Snake River |
| Job c ² . | Upper Snake Region Rivers and Streams Investigations
Henrys Fork Snake River, Birch Creek, Little Lost River |
| PROJECT II. | TECHNICAL GUIDANCE |
| PROJECT III. | HABITAT MANAGEMENT |
| PROJECT IV. | POPULATION MANAGEMENT |

BY

**Mark Gamblin, Regional Fishery Manager
Bruce Rich, Regional Fishery Biologist
Thomas Herron, Regional Fishery Biologist
William Schrader, Senior Fishery Research Biologist**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-G: Upper Snake Region
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

No mountain lakes were surveyed by Idaho Department of Fish and Game personnel in 1994. We stocked 1 mountain lake in the White Knob Mountains, 13 lakes in the Pioneer Mountains, and 3 lakes in the Lost River Range. Total fry planted was 21,500 in the 17 lakes. We used the Challis National Forest fire standby helicopter (jet Llama) to stock all lakes on September 7, 1994 at no cost to the Department. Horseshoe Lake in the Fall River Highlands was not stocked by Ashton Hatchery personnel in 1994 due to unavailability of Arctic grayling *Thymallus arcticus* fry.

We also updated the three-year rotation stocking schedule to reflect current angler use, to adjust for carrying capacity, and to make more efficient use of flight time.

Results of a trailhead user survey conducted by the U.S. Forest Service, Lost River Ranger District, are included in the Appendix.

Authors:

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Mark Gamblin
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-G: Upper Snake Region
Job: b¹ - Henrys Lake Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

From March 1 through May 25, 1994, 11,309 cutthroat trout *Oncorhynchus clarki* (55% male) were counted and marked (right pelvic fin clip) in the Hatchery Creek spawning run at Henrys Lake. Male cutthroat averaged 490 mm and females averaged 445 mm total length. A total of 4,490,223 cutthroat eggs were collected.

A total of 3,520 hybrid (cutthroat x rainbow [*O. clarki* x *O. mykiss*]) trout (54% male) were counted and marked (right pelvic fin clip). Hybrid males averaged 540 mm total length and hybrid females averaged 526 mm total length. A total of 2,622,200 hybrid eggs were collected in the spawning run.

From October 3 through December 12, 1994, the fish ladder was operated on Hatchery Creek for the purpose of collecting brook trout *Salvelinus fontinalis* for spawning. A trap net was deployed from October 20 through 28, 1994. A total of 429 brook trout (36% male) were collected. Male brook trout averaged 387 mm and females averaged 414 mm total length. Brook trout green eggs totaled 527,406 from 268 females.

The 1994 population estimate of cutthroat trout larger than 350 mm in Henrys Lake was 583,401. The 1994 population estimate of hybrid trout larger than 350 mm in Henrys Lake was 228,656.

Mean total length of cutthroat trout in the creel was 418 mm with a range of 240 mm to 712 mm. The percentage of cutthroat greater than 508 mm in total length was 4.5%. Mean total length of hybrid trout in the creel was 437 mm with a range of 240 mm to 875 mm. The percentage of hybrid trout greater than 508 mm in total length was 15.2%. Mean total length of brook trout in the creel was 425 mm total length with a range of 310 mm to 511 mm. A total of 29% of brook trout examined in the creel were greater than 457 mm.

Angling pressure was estimated to be 177,826 hours in 1994. Idaho residents accounted for 70.7% of the total effort. Boat anglers made up 60% of fishermen, float tubes comprised 24.5%, and bank anglers comprised 15.5% of fishermen. Bait fishing accounted for 31.5% of fishing methods, lure fishing was 42.5%, and fly fishing comprised 26% of fishing methods.

The estimated catch was 116,796 fish. The overall season catch rate was 0.66 fish/h with an estimated season harvest of 21,008 fish. Of fish caught, 82% were released.

During the fishing season in 1994, water clarity steadily decreased. Secchi depths decreased from 6 meters on May 5 to 0.5 meters on September 26. This coincides with peak chlorophyll-a concentrations ranging from 16.5 to 158 $\mu\text{g/L}$. Total ammonia as N was at its highest recorded level for 1994 on October 25 at 0.324 $\mu\text{g/L}$.

Gillnetting effort consisted of one net night per location at six locations. A total of 14 cutthroat trout, 18 hybrid trout, and 2 Utah chubs *Gila atraria* were captured. Purse seining was conducted at four locations, producing 232 fish of which 168 were cutthroat trout, 61 hybrid trout, 2 brook trout, and 1 Utah chub.

Authors:

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Mark Gamblin
Regional Fishery Manager

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-G: Upper Snake Region
Job: b² - Island Park Reservoir,
Palisades Reservoir, Ririe
Reservoir, Mud Lake, Roberts
Gravel Pond Title: Lowland Lakes Investigations

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

An on-the-water creel survey was conducted in the summer of 1994 on Island Park Reservoir. Fishing was generally poor (rating given by 56% of angling parties interviewed). While most anglers did poorly (45% harvested no fish), a small minority did quite well (9% harvested six fish). Angling pressure (41,000 hours) and catch rate (0.2 fish/h) were among the lowest recorded in the nine creel surveys conducted since 1960. A simultaneously conducted postcard creel survey produced results similar to those from the on-the-water survey, but appeared to be biased toward more successful angling parties due to differential response rates.

Anecdotal observation revealed a significant spawning run of kokanee *Oncorhynchus nerka kennerlyi* out of Island Park Reservoir into Moose Creek. This was the first spawning run since the 1992 renovation, indicating that fingerling kokanee stocked in Moose Creek in fall 1992 returned as 16- to 22-inch spawning adults only two years later (in fall 1994).

A lowland lake survey at Island Park Reservoir revealed the lowest catch per unit effort (4.4 fish/gill net night) and proportion of gill net catch (11 %) for suckers *Catostomus sp.* and Utah chub *Gila atraria* in two pre- and two post-renovation sampling efforts conducted since 1991.

Dissolved oxygen monitoring in Mud Lake during the winter of 1993-94 indicated sufficient dissolved oxygen to overwinter fish, unlike in the winter of 1992-93 when a major fish kill occurred.

Mid-water trawling resulted in the capture of no kokanee in two nights of sampling at Palisades Reservoir, and 41 kokanee were captured in one night of effort at Ririe Reservoir. The Ririe Reservoir kokanee had length modes at 45, 130, 240, and 340 mm total length, and a total kokanee biomass of 4.3 kg/ha was calculated based on the trawling results.

A lowland lake survey at Roberts Gravel Pond revealed a fishable number of rainbow trout *O. mykiss*, and large numbers of generally small panfish of the following species: yellow perch *Perca flavescens*, bluegill *Lepomis macrochirus*, pumpkinseed *Lepomis gibbosus*, and bullhead *Ameiurus sp.*

Authors:

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Mark Gamblin
Regional Fishery Manager

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-G: Upper Snake Region
Job: c¹ - South Fork Snake River Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

In the South Fork Snake River, a total of 918 new trout were captured during two days of electrofishing at the Palisades section in September 1994. Trout species composition and relative abundance were wild and hatchery cutthroat trout *Oncorhynchus clarki* (62%), wild rainbow trout *O. mykiss* and hybrids (33%), wild brown trout *Salmo trutta* (4%), and lake trout *Salvelinus namaycush* (<1%). A total of 1,104 new trout were captured during three days (two marking runs) of electrofishing at the Conant section in October 1994. Trout species composition and relative abundance were wild and hatchery cutthroat (79%), wild rainbow trout and hybrids (9%), wild brown trout (12%), and kokanee *O. nerka kennerlyi* (<1%).

The proportion of cutthroat trout at Palisades section has declined 20%, while wild rainbow and hybrid trout have increased over 20% since 1989. At Conant over the same time period, the proportion of cutthroat has declined 10%, while wild rainbow trout and hybrids have increased 5%. At Conant, the cutthroat proportion is now the same as in 1982, prior to special regulations, whereas rainbow and hybrids have increased 8%. We consider these trends a serious threat to the genetic integrity and long-term viability of wild cutthroat populations in the South Fork.

The proportion of brown trout at Palisades has also declined since 1989, from 8% to 4%, but may not be statistically significant. The proportion at Conant has varied from 7% to 13% since 1987, and from 9% to 19% since 1982, but there is no apparent trend.

Relatively large numbers of age 1 trout at both South Fork sections probably reflects good water conditions during their first year of life (1993). We cannot explain the relative decline in large rainbow or hybrid and brown trout since 1989, and would have expected an increase after special regulations were implemented in 1992. Our results are confounded by our lack of density estimates and age and growth data.

Capture probabilities (estimated by electrofishing efficiencies, R/C) at both South Fork sections over time appears to be greatest for cutthroat, followed by rainbow and hybrid, followed by brown trout, although the differences may not be statistically significant. Differences between species might be due to different habitats occupied, better selectivity, or other factors, but needs to be accounted for when reporting relative abundance.

South Fork electrofishing marking runs were completed, but recapture runs were not because of high flows at Palisades (9,400 cfs) and low flows (1,200 cfs) at Conant. Recapture runs were not completed at Conant in 1992 and 1987 for the same reason. Plots of historic efficiencies against mean sampling flows suggest a positive relationship up to nearly 9,000 cfs. South Fork hydrographs for the last 12 years indicate we could begin sampling September 1, but should be done by mid-October most years.

The 1994 South Fork brown trout redd count was 306, the lowest count since 1984. This continues a downward trend since the record count in 1991 (889 redds), although counts were less than 300 prior to and including 1984. On average, about half again as many redds were counted using rotary-wing aircraft (447) compared to fixed-wing aircraft (306) in 1994.

Significant numbers (945) of wild cutthroat trout fry were captured moving downstream in Rainey Creek, a tributary of the South Fork, from mid-July to early October 1994. Fewer yearlings (41) and adults (15) were captured. We do not know to what extent outmigration occurred prior to or after these dates when the trap was not operating. Most fry movement occurred after mid-August and peaked in early October. Captured fry were mostly <102 mm or what we believe to be age 0. The average size of all captured fish was 53 mm, but the median was 40 mm (n = 998).

Authors:

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Mark Gamblin
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-G: Upper Snake Region
Job: c² - Henrys Fork Snake River, Birch Creek, Little Lost River Title: Rivers and Streams Investigations

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

We conducted a low-intensity postcard creel survey on the Upper Henrys Fork (Henrys Lake Outlet to the Mack's Inn reach of the Henrys Fork Snake River). Response rate was 18%, and angling parties rated their days fishing as follows: Excellent (7%), Good (25%), Fair (25%), and Poor (43%).

A total of 746 wild rainbow trout were captured by electrofishing in late summer on the Upper Henrys Fork. Most of the catch was young-of-the-year and yearling individuals. We calculated a population estimate of 2,718 wild rainbow trout (≥ 150 mm total length) for the reach, or 755 fish per linear river mile.

A low-intensity effort survey on the Upper Henrys Fork revealed that only 52% of individuals using the river were fishing. This reach is heavily used by recreational boaters/floaters and is designated as a National Water Trail.

We conducted a low-intensity postcard creel survey on the Box Canyon reach of the Henrys Fork. Response rate was 26% overall and 33% for residents. Angling parties rated their days fishing as follows: Excellent (11%), Good (26%), Fair (36%), and Poor (30%). Catch rates were 0.64, 0.87, and 0.53 fish/h for all, guided and nonguided anglers, respectively. Guided trips made up 22% of the effort accounted for by returned postcards.

A total of 1,226 wild rainbow trout were captured by electrofishing prior to the spring opener on the Box Canyon reach of the Henrys Fork. Fish ranged in size from 75 mm to 550 mm total length. We calculated a reach population estimate of 7,976 fish (3,323 fish per linear river mile) and 7,976 fish (3,323 fish per linear river mile) using Modified Peterson and Log-likelihood methods, respectively.

A total of 725 wild rainbow trout were captured by night electrofishing in early summer on the Last Chance reach of the Henrys Fork. Like in the Box Canyon, fish ranged in size from 75 mm to 550 mm total length. We calculated a reach population estimate of 1,158 fish (772 fish per linear river mile) and 1,988 (1,325 fish per linear river mile) using Modified Peterson and Log-likelihood methods, respectively.

A total of 269 wild rainbow trout were captured by night electrofishing in early summer on the Harriman State Park reach of the Henrys Fork. Like in the Box Canyon and Last Chance reaches, fish ranged in size from 75 mm to 550 mm total length. We calculated a reach population estimate of 659 fish (220 fish per linear river mile) and 1,976 (659 fish per linear river mile) using Modified Peterson and Log-likelihood methods, respectively.

A total of 702 wild rainbow trout were captured by electrofishing in early summer on the Pinehaven to Riverside reach of the Henrys Fork. Fish ranged in size from 75 mm to 600 mm total length. We calculated a reach population estimate of 3,218 fish (1,463 fish per linear river mile) using the Modified Peterson method.

We assisted the Bureau of Land Management personnel in conducting extensive fish population surveys for Birch Creek and the Little Lost River.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project II: Technical Guidance Subproject II-G: Upper Snake Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Technical guidance was provided to federal, state, county, municipal, and private agencies/entities upon request. Technical guidance was also provided to organized sportsmen's groups, conservation organizations, and private citizens in the form of fish pond development, stocking and management advice, funding requests and project feasibility opinions, and various conservation and educational programs.

Regional fishery management personnel contributed over 120 man-days to technical guidance requests in 1994.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project III: Habitat Management

Subproject III-G: Upper Snake Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

Significant efforts were made to protect and enhance fish habitat in the Henrys Fork River. Regional personnel participated in the Island Park Hydro Advisory Committee, both in monitoring impacts of operations and especially in the planning stages of the proposed Fall River Rural Electric Cooperative spillway modification (collar). Regional personnel also provided technical assistance for fish passage at the Buffalo River hydro plant, and significant gains were made with responsible and affected entities toward project implementation.

Riparian exclusion fence was built on 1/2 mile of Kelly Spring Creek, one mile of Howard Creek, and 1/3 mile of Targhee Creek, tributaries to Henrys Lake.

A cooperative stream habitat survey was conducted with The Nature Conservancy (TNC) staff for the Henrys Lake Outlet channel on the newly acquired TNC Flat Ranch property. A total of seven monitoring sections were established to assess fish abundance and species composition, pool/riffle ratios, width/depth profiles, substrate characteristics, bank stability, bank shading, and riparian vegetation type.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project IV: Population Management

Subproject IV-G: Upper Snake Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

An attempt to salvage fish below Mackay Reservoir was made but aborted due to sufficient leakage through both the dam and temporary coffer dam constructed by the Big Lost River Irrigation District. Until repairs are made to remedy this background leakage, salvage operations will be unnecessary even at zero managed flow through the dam.

At Palisades Reservoir, approximately 3,500 game fish, including cutthroat trout *Oncorhynchus clarki*, rainbow trout *O. mykiss*, brown trout *Salmo trutta*, lake trout *Salvelinus namaycush*, and mountain whitefish *Prosopium williamsoni*, were salvaged from the three dewatered stilling basins and released in the river below. A new method of transporting the fish with the assistance of the Bureau of Reclamation personnel made the operation much more efficient and safe than in the past, and should set a standard for future salvage operations at this site.

Regional personnel and local anglers transferred 61 largemouth bass *Micropterus salmoides*, 76 bluegill *Lepomis macrochirus*, and incidental yellow perch *Perca flavescens* from the Southeast Region waters to Mud Lake in a joint effort to further bolster the Mud Lake fishery after the 1993 winterkill.

Authors:

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**IDAHO
DEPARTMENT OF FISH AND GAME**

Jerry M. Conley, Director

**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

**REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
SALMON REGION (Subprojects I-H, II-H)**

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

BY

**Mark Liter, Regional Fishery Biologist
Mike Larkin, Regional Fishery Manager
Tom Curet, Regional Fishery Biologist**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-H: Salmon Region
Job: a Title: Mountain Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

No mountain lakes were stocked in the Salmon Region during summer 1994 due to the extreme fire season, smoke, and lack of available helicopters.

Surveys were conducted on 15 alpine lakes in the Frank Church River of No Return Wilderness area. Each lake was surveyed for use, status of fishery, and fish population.

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Mike Larkin
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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-H: Salmon Region
Job: b Title: Lowland Lakes Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

No formal sampling was conducted by regional fishery personnel in lowland lakes during 1994.

Authors:

Mark Liter
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Regional Fishery Manager

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-19
Project I: Surveys and Inventories Subproject I-H: Salmon Region
Job: c Title: Rivers and Streams Investigations
Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

During summer 1994, 25 tributaries in the Salmon River drainage were surveyed in order to assess fish populations and size structure of salmonids. Tributaries surveyed included those draining into the North Fork of the Salmon River, East Fork of the Salmon River, Pahsimeroi River, Lemhi River, and mainstem Salmon River between the towns of Stanley and Shoup. Tributaries to the mainstem Salmon River were divided into two categories; those entering downstream of the town of Salmon, and those entering upstream.

Each stream was sampled by electrofishing, using multiple-pass removals to derive population estimates. Age 0 fish (<70 mm) were not included in the population estimates due to their reduced capture probability. In all but two cases, streams were sampled at two sites, one site within 1 km of the mouth, and the second site further up the drainage above geographic features such as major side streams, steep gradient sections, or significant mining activity.

Rainbow/steelhead trout *Oncorhynchus mykiss* were the most abundant fish observed in 19 of the 25 streams sampled. Cutthroat trout *O. clarki* were sampled in 15 streams, bull trout *Salvelinus confluentus* in 8, brook trout *S. fontinalis* in 4, and juvenile chinook salmon *O. tshawytscha* in 2. Sculpin *Cottus sp.* (four streams) were also enumerated but not included in population estimates.

Authors:

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1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project II: Technical Guidance

Subproject I-H: Salmon Region

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

During 1994, technical assistance was provided to all state and federal agencies upon request. Comments were submitted to various agencies and private entities concerning stream alterations, bank stabilizations, mining operations and reclamation plans, fish rearing proposals, private ponds, water right applications, grazing allotments, timber sales, highway reconstruction, habitat improvements, bridge construction, and hydropower projects. On-site inspections of proposed, on-going, and completed projects were conducted.

Also, we responded to the general public in person, by telephone, and by mail to inquiries about fishing opportunities, techniques, rules, and area specific information.

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DEPARTMENT OF FISH AND GAME,**

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**Federal Aid in Sport Fish Restoration
1994 Annual Performance Report
Program F-71-R-19**

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS

PROJECT V. COORDINATION

By

**Dexter R. Pitman, State Fishery Manager
William D. Horton, Resident Fishery Coordinator
Clark Shackelford, Fishery Technician**

1994 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-19

Project V: Coordination

Title: Regional Coordination and Assistance

Contract Period: July 1, 1994 to June 30, 1995

ABSTRACT

The State Fishery Manager, Resident Fishery Coordinator, and Fishery Technician provided program guidance, coordination, and assistance to fisheries management personnel in eight regions. Midwater trawling to estimate kokanee salmon *Oncorhynchus nerka kennerlyi* abundance was conducted in 11 waters (Payette Lake, Palisades Reservoir, Ririe Reservoir, Anderson Ranch Reservoir, Salmon Falls Creek Reservoir, Lucky Peak Reservoir, Redfish Lake, Alturas Lake, Pettit Lake, Stanley Lake, and Spirit Lake). This work is coordinated through the Bureau of Fisheries where all equipment is stored and maintained; however, regional personnel assisted in sampling, and findings are reported in regional reports.

Coordination and assistance was also provided through annual work plan meetings, a three-day Fisheries Manager Coordination meeting, Region-Fisheries Bureau Coordination meetings, and numerous smaller meetings. Interstate management coordination included meetings with bordering states of Nevada, Oregon, Utah, and Wyoming. Interagency coordination meetings were held with federal land management agencies, other state agencies, the U.S. Fish and Wildlife Service, and the Columbia Basin Fish and Wildlife Authority-Resident Fish Committee.

White sturgeon *Acipenser transmontanus* catch information, angler effort, and population status was summarized from a mail survey to 5,420 permit holders (Appendix A). The information was then communicated back to sturgeon anglers with a sturgeon newsletter (Appendix B). We estimated anglers spent 15,956 days to catch-and-release 9,497 sturgeon in Idaho.

The Bureau of Fisheries also coordinated the issuance of 143 permits for fishing tournaments. Mandatory report forms for these tournaments have been filed for future trend analysis. Scientific collecting permits were issued to 196 individuals for the study of aquatic species. Most investigators (117) receiving collecting permits are resource agency biologists; however, university students and professors, utility companies, timber companies, Indian tribes, and consultants also received permits.

To obtain anglers' input for development of the 1996-2000 Fisheries Management Plan, the Department conducted a mail survey of 1,000 Idaho anglers in 1994 (Appendix C). Similar surveys were conducted in 1967, 1977, and 1987. Names were selected at random from a

list of all types of license buyers, resident and non-resident. The number of anglers who sent in completed surveys is twice the number in typical political surveys, and results are accurate to within a few percentage points of what surveying all 400,000 Idaho anglers would have provided. This information is being reported separately by the Fishery Research Section, since the survey activities and analysis was done by that group.

As Sport Fish Restoration Coordinator, the former State Fishery Manager attended one-on-one and group coordination meetings with Federal Aid staff in Portland and the Regional Coordinator's meeting.

Authors:

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William D. Horton
Resident Fishery Coordinator

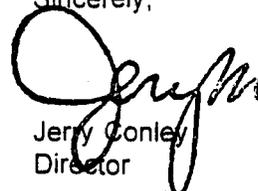
Clark Shackelford
Fishery Technician

5. How many days did you catch-and-release more than one sturgeon? _____

6. What was the average number of hours you fished per day? _____

Thank you for your time and cooperation and have a great year fishing.

Sincerely,



Jerry Conley
Director

SECTION CODES 1 THROUGH 12

- | | |
|---|--|
| 01 Snake River, below Salmon River | 07 Snake River, Shoshone Falls to Bliss Dam |
| 02 Snake River, Hells Canyon to Salmon River | 08 Snake River, Minidoka Dam to Shoshone Falls |
| 03 Snake River, Walters Ferry to Hells Canyon Dam | 09 Snake River, American Falls to Minidoka Dam |
| 04 Snake River, Swan Falls Dam to Walters Ferry | 10 Kootenai River |
| 05 Snake River, C.J. Strike Dam to Swan Falls Dam | 11 Salmon River, downstream of Little Salmon River |
| 06 Snake River, Bliss Dam to C.J. Strike Dam | 12 Salmon River, upstream of Little Salmon River |

STURGEON NEWSLETTER

The Idaho Department of Fish and Game (Department) is sending all 1994 sturgeon permit holders information about the sturgeon program. This will let you know that information you have provided since 1989 is used, and let you know about recent changes that may affect your sturgeon fishing. **This is one way we can thank you for your help in managing this magnificent resource.**

The mandatory sturgeon permit program started in 1989 to gather information about the many different populations of sturgeon in the state. That year we issued 2,843 mandatory permits to sturgeon anglers. With more anglers becoming aware of the program, and with the increasing popularity of fishing for sturgeon, the number of permits more than doubled by 1994 when 6,022 permits were issued. The following pages provide an overview of where and when anglers caught sturgeon and at what size they were caught. Much of this information comes from permits you have returned to the Department during the last five years. In addition, we have added some general comments to help you understand more about sturgeon.

HISTORY AND LIFE HISTORY

The white sturgeon were once common in the Snake River upstream to Shoshone Falls (Figure 1). They have been found in the Salmon River as far upstream as the town of Salmon, but are more common downstream of Riggins. There is also a race of sturgeon in the entire Idaho portion of the Kootenai River. The decline of the sturgeon in Idaho began in the 1880s when demand for smoked sturgeon and caviar caused them to be overfished. Construction of dams in the early 1900s accelerated the decline. Commercial fishing for sturgeon was stopped in 1943. Catch-and-release rules were implemented in 1970 for the Snake River and in 1984 for the Kootenai River. **Because of the continued decline in population, the Kootenai River is closed to sturgeon fishing this year** (see page 3 for more information).

Sturgeon reproduce during the spring of the year when water conditions may provide velocity, depth, and temperature needed to successfully spawn. Sturgeon in Idaho do not become sexually mature until at least 12 years of age, and then may spawn for a 35-pound female to produce as many as 700,000 eggs, and large fish to produce 3 to 4 million. eggs. Factors that limit the fish's ability to successfully reproduce include inadequate swift current sections between dams, poor water quality, and reduced water quantity in some years. The sturgeon prefer pools over 20 feet deep where they feed on almost anything that is available on the bottom. Insects, crayfish, and clams make up most of the diet of young fish. In addition to these foods, adult sturgeon eat fish as the primary part of their diet.



Figure 1

From information you have provided on sturgeon permits from 1989 through 1993, we have tabulated over 8,000 sturgeon caught and released statewide. We know that nearly half of these fish are caught in the early summer months of May, June, and July (Figure 2). We also have information available by area fished and size of fish caught, but will only present part of that information in this newsletter.

Sturgeon have been reported to live over 100 years. However, the oldest aged in Idaho by biologists with the Department was an 11-foot sturgeon that was 65 years old. The state record white sturgeon for a sport angler is a 394-pound fish caught in the Snake River in 1956. A larger giant weighing 675 pounds was caught in 1908 on a set line. Many reports (and historic photos) from the early 1900s mention sturgeon weighing 1,000 pounds or more. We have received reports from you of 9- and 10-foot sturgeon, and we have even heard of a 12-foot fish out there. We will likely never be able to match the 20-foot sturgeon seen in the photographs or talked about in the old stories, because the food source is no longer available, and it is doubtful these fish can live for the 100 plus years needed for them to grow to very large sizes.

FISHING ACTIVITY BY MONTH
for 5 years based on returned permits

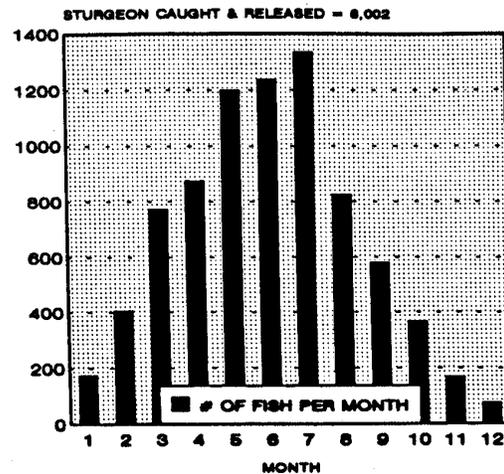


Figure 2

STURGEON POPULATION STATUS

Figure 3 identifies the size structure of all the sturgeon caught and released from 1989 through 1993. About half the fish caught by anglers are between 3 and 6 feet long. Most anglers are pleased that nearly one out of every four sturgeon caught is more than 6 feet long. The fact that you catch small sturgeon is important too. If you see small fish, you know there is a reproducing population of sturgeon, and an indication that future sturgeon fishing may be good.

The two strongest populations of sturgeon are in the Snake River between Lewiston and Hells Canyon Dam (areas 1 and 2) and between C.J. Strike Dam and Bliss Dam (area 6). Figure 4 displays the number of fish caught by anglers as reported on the returned sturgeon permits for the past five years. These areas not only have the most fish (nearly 60% of all sturgeon caught come from areas 1, 2 and 6), but are the areas where anglers spend most of their time. These two sections also have the highest reproducing

PERCENT OF CATCH - 1989 through 1993
STURGEON CATCH ON THE SNAKE, SALMON, & KOOTENAI RIVERS

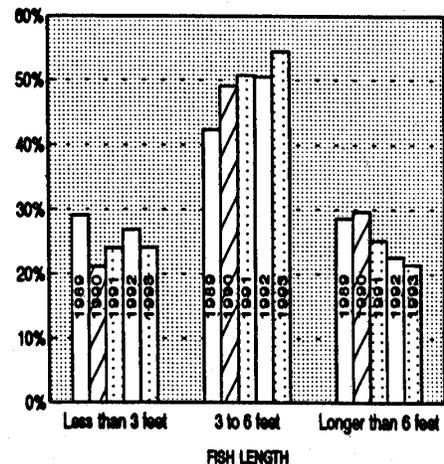


Figure 3.

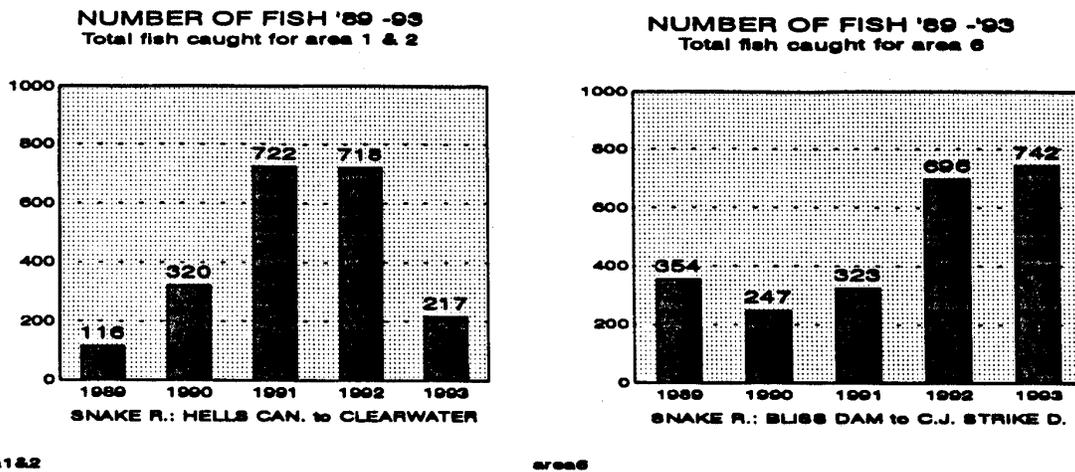


Figure 4.

populations in the Snake River. The Hells Canyon reach has more sturgeon longer than 6 feet than the reach between C.J. Strike and Bliss dams. We do not have room in this letter to tell you about the population status in all the areas (maybe we can in future letters if you think this information is worthwhile).

SPECIAL STUDIES

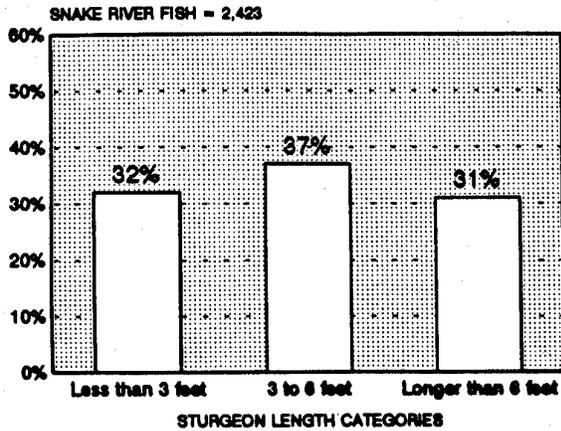
If you have fished in the last couple of years between Swan Falls Dam and Bliss Dam, you may have seen Department personnel, College of Southern Idaho (CSI) personnel, Idaho Power Company (IPC) personnel, or volunteer anglers working with these groups on some sturgeon research. IPC biologists are gathering information relative to relicensing of hydropower facilities, and have been capturing and tagging sturgeon to make population estimates. CSI and Department personnel, and volunteer anglers are attempting to capture and spawn adult sturgeon for a hatchery rearing program in conjunction with private fish hatcheries in the Hagerman Valley. Both programs will be continuing in 1995 and likely in the future. If you see these people out there, they should be willing to answer any questions about their activities. In addition, the Department has a sturgeon research project on the Kootenai River.

KOOTENAI RIVER PROBLEMS

It is important to take this opportunity to tell you about the Kootenai River sturgeon. It was listed in 1994 by the U.S. Fish and Wildlife Service as an endangered species under the Endangered Species Act. Because of the endangered status, **the Kootenai River is now closed to sturgeon fishing.** All 1995 sturgeon permits are stamped with that message so all sturgeon anglers will be aware that it is illegal to fish for them. The Department will be actively involved in monitoring the Kootenai River sturgeon as the recovery plan, being developed by the U.S. Fish and Wildlife Service, is implemented.

Very few small sturgeon are being caught in the Kootenai River. Figure 5 compares the size structure of the sturgeon populations in the Kootenai River and the Snake River of Hells Canyon. It shows a healthy Snake River population, and an aging population in the Kootenai River. Research by Department personnel shows that the few sturgeon less than 3 feet long caught in the Kootenai River were the result of eggs hatched in 1974. This also reflects that growth of these fish is very slow because much of their food supply was cut off when Libby Dam (in Montana) was built. Department research confirms your permit information that spawning sturgeon are not successfully reproducing now. If the operation of Libby Dam is modified to mimic springtime flows, we believe that the Kootenai sturgeon will successfully spawn again.

SNAKE RIVER



KOOTENAI RIVER

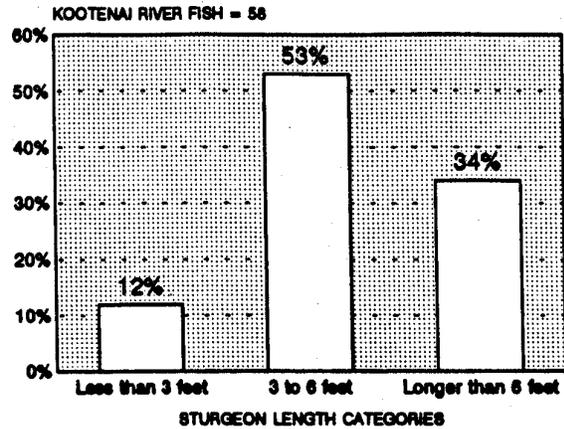
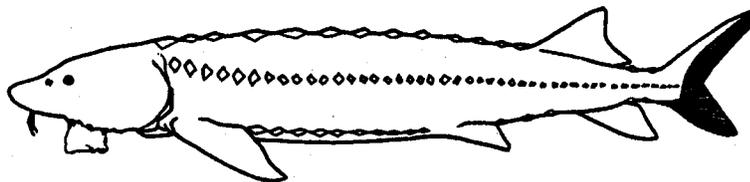


Figure 5.

STURGEON PERMIT CHANGES

Even though it is mandatory for all sturgeon anglers to return their 1994 sturgeon permits by January 15, 1995, only 13% of you have done so. Because most of you have not returned your 1994 permits, we are sending a questionnaire along with this letter and a prepaid return envelope to send back the questionnaire. It basically asks for the same information you would normally put on the permit when you go sturgeon fishing. If you are one of the few who has returned your permit, please tell us and we will match your license number against our files to look up the information. Thank you for taking the time to complete the questionnaire.

We are trying a new approach for 1995. When you pick up your free permit this year, please note that the instructions now ask you to keep your permit until April 1, 1996 or until a Department caller has contacted you for a survey. After April 1 of each year, you may throw away your permit. We expect to contact about 15% of you each year before April to make our estimates on sturgeon catch throughout the state. If you catch and release more sturgeon than there are spaces on your current permit, keep the completed permit and either pick up another permit, or keep a diary with the necessary information on all your additional sturgeon adventures. If you use a diary, be sure to keep your current year's sturgeon permit with you while fishing.



Appendix C.

YOUR FISHING HABITS AND PREFERENCES

1. If you fished in Idaho during 1994, please list the three waters you fished the most and your best recollection of the number of days fished.

Water: _____ County: _____ Days: _____
Water: _____ County: _____ Days: _____
Water: _____ County: _____ Days: _____

2. Please list the three Idaho waters you would fish most often if the time, distance, and difficulty of getting there were not a factor.

Water: _____ County: _____
Water: _____ County: _____
Water: _____ County: _____

3. Please list the three species you most refer to fish for (1=most preferred):

1. _____ 2. _____ 3. _____

4. Please tell us, as well as you can remember, the total number of days you fished in Idaho during 1994 and the number of days you took part in each of the different types of fishing listed below (because you may have done more than one kind of fishing in the same day, it may add up to more than the total number of days fished)

Total days fished during 1994: _____

Days fished for:

_____ Steelhead	_____ Catfish in lakes or reservoirs
_____ Trout in high mountain lakes	_____ Catfish in rivers or streams
_____ Trout in other lakes or reservoirs	_____ Landlocked chinook in lakes or reservoirs
_____ Trout in rivers or streams	_____ Whitefish in lakes or reservoirs
_____ Bass in lakes or reservoirs	_____ Whitefish in rivers or streams
_____ Bass in rivers or streams	_____ Other kinds of fish in lakes and reservoirs
_____ Sturgeon	_____ Other kinds of fish in rivers or streams
_____ Kokanee	_____ Nothing in particular (anything that bites) in lakes or reservoirs
_____ Perch	_____ Nothing in particular (anything that bites) in rivers or streams
_____ Crappie	
_____ Bluegill or pumpkinseed	
_____ Walleye	
_____ Northern pike or tiger muskies	

5. How many of the days that you fished for trout were spent on waters where special regulations required you to release all or a certain size of the trout that you might catch? _____

6. How many of the days that you fished for bass were spent on waters where special regulations required you to release bass larger than the 12" general size limit? _____

ANGLER INFORMATION

7. Should Fish and Game provide more information to anglers?

Yes _____ No _____ Not sure _____

8. If yes or not sure, how would you like to get the information?
Newspaper _____ Radio _____ TV _____ Phone "hot line" _____ Pick up at vendors _____
Direct mail _____ Public meetings _____ Other (specify) _____

9. If yes or not sure, what type(s) of information would you like to get more of? (Please check all that apply).
_____ Places to go fishing
_____ Current fishing conditions
_____ Results of fish population surveys
_____ Fishing tips
_____ Environmental issues that affect fish resources
_____ Fishing regulations
_____ Other (specify) _____

10. Were you contacted by any Idaho Department of Fish and Game employee while fishing during 1994?
Yes _____ No _____

11. If yes, how was your opinion of the Department affected by the contact?
_____ It improved _____ It didn't change _____ It was worse

MANAGEMENT

Currently, regulations are used to manage fisheries one of three basic ways: 1) **general statewide regulations**; 2) **"special regulations"** that restrict sizes and numbers of fish that can be harvested in order to have more and larger fish to catch; and 3) **"protective regulations"** to protect threatened or sensitive fish populations from overharvest. There are also numerous "non-biological" regulations (no motors, no boats, etc.) that regulate how anglers fish in order to minimize conflicts with other users.

In waters where angler use is high enough that most fish get harvested at a young age, using **"special regulations"** that require some sizes of fish to be released results in more and larger fish to catch (but not harvest).

12. I would like more _____ fewer _____, the same _____ number of waters managed this way for trout.

13. I would like more _____, fewer _____, the same _____ number of waters managed this way for bass.

14. Which best describes your feelings about restrictive regulations for trout where current harvest is not endangering the population? (Choose only one)

_____ I support restrictive regulations if they will result in significantly more and larger fish to catch
_____ I support restrictive regulations if they will result in any increase in numbers and size of fish
_____ I support restrictive regulations even if they don't change trout numbers or size
_____ I don't support restrictive regulations at all where the trout population is not in danger

"Protective regulations" are needed to prevent permanent damage to sensitive populations due to overharvest in some areas or at some times. Putting regulations on numerous specific streams where there is a problem requires numerous individual regulations. This complicates the regulation brochure. However, simpler drainage-wide or area-wide regulations may needlessly restrict harvest where there is not a problem.

15. If current research shows that an 8-inch minimum size for trout is needed to protect young steelhead in some areas, how would you like the regulation applied? (Choose only one)

_____ Just the individual streams where there is an overharvest problem
_____ Entire drainages or rivers which have streams where there is a problem
_____ All drainages or rivers where young wild steelhead occur
_____ Statewide

16. A reduced bag limit of two trout, with no gear or bait restrictions, has been applied to over 3000 of Idaho's 26,000 miles of rivers and streams. It has been applied to prevent overharvest of wild trout, How do you think the regulation should be applied? (Choose only one)

- Only on individual new streams where harvest needs to be limited
- Entire wild trout drainages which have streams where harvest needs to be limited
- All wild trout drainages or rivers

REGULATION BROCHURE

17. How often do you have difficulty knowing what the fishing regulations are for the area you want to fish?
Almost always _____ More times than not _____ Sometimes _____ Not very often _____ Rarely _____

18. Many things can make it difficult to know what the regulations are. Please rank the following, with 1 being the most important and 10 the least.

- The wording in the brochure is confusing
- The regulations change so often its hard to keep them straight
- The way the actual regulations are presented in the tables makes it difficult to figure them out
- The brochure is organized poorly
- There are too many different areas with exceptions to the general regulations
- There are too many different types of regulations
- Its hard to find out what the regulation is where I want to fish
- Its hard to figure out where the boundaries are for the regulations
- There is too much extra information and ads in the brochure
- Other (specify) _____

SOME ANGLERS HAVE PROPOSED

19. Anglers in some parts of the state have suggested allowing the use of a second rod. They'd like to cast for bass while sturgeon fishing, improve their odds when trolling, or just improve their success when still fishing for catfish or hatchery trout in reservoirs. Overharvest of wild trout is always a concern, but few people still-fish in streams. The use of a second rod could be prohibited in trout streams. Whether or not to pursue this idea is primarily a matter of angler preference. Would you like to see the use of a second rod legalized if it could be done in a way that did not hurt the future of fish populations?

- Yes
- No
- Not sure

20. Most trout streams are now open to fishing during the winter because of the whitefish season. The harvest of trout is not legal, but they do get caught and released. Some anglers have suggested dropping the whitefish season. Others have suggested legalizing what is now happening and having an actual winter catch and release season for trout. Research has shown that in cold water the number of released fish that die is very low. Restricting the use of bait or allowing only whitefish bait would essentially eliminate trout mortality. Whether or not to establish a winter catch and release trout season is primarily a matter of angler preference. How do you feel about it?

- (1) Strongly support
- (2) Support
- (3) Not sure
- (4) Opposed
- (5) Strongly opposed

21. Some anglers have suggested having a trout stamp or conservation stamp to specifically fund certain fisheries programs. The reasons most often expressed have been to provide money to purchase or get easements to property along trout streams, to do more habitat work, to construct new fishing reservoirs, or to help fund expensive hatchery trout programs. How do you feel about some type of stamp or fee increase to raise money for specific purposes?

- (1) Strongly support
- (2) Support
- (3) Not sure
- (4) Opposed
- (5) Strongly opposed

22. If you support it, would you prefer it be done with a stamp _____ or a license fee increase _____?

23. If you support a stamp, who do you think it should apply to?

_____ Anglers who fish for hatchery trout

_____ All trout anglers

_____ All anglers

24. If you support a stamp or fee increase, what would you like to see the money spent on? (fill in the percent)

_____ Rearing and stocking trout

_____ Acquiring easements or title to trout streams

_____ Stream habitat improvements on private land

_____ Building lakes, ponds or reservoirs for fishing

_____ Other (specify)

25. How much would you recommend for the stamp or fee increase? \$ _____

26. Is the recovery of Chinook and Sockeye salmon important to you?

_____ (1) Extremely Important

_____ (4) Unimportant

_____ (2) Important

_____ (5) Extremely Unimportant

_____ (3) Not Sure

27. Would you be willing to pay \$5 more per month on your electric bill if it could recover salmon?

_____ Yes _____ No _____ Not sure

28. There are two options being discussed to recover salmon.

One option is called "**The Flush**," which means maintaining the four Snake River reservoirs below Lewiston at full capacity while flushing water (many millions of acre feet) from Idaho's reservoirs to move salmon smolts through the hydrosystem. This would leave many upstream reservoirs very low or empty, but would not impact barging or hydrogeneration downriver.

The other option would be "**The Drawdown**." It would drawdown the four reservoirs below Lewiston to create a river effect, which will increase the water speed that the smolts require to get to the ocean. After several weeks of the drawdown, those four reservoirs would be refilled with less than one million acre feet of water from Idaho reservoirs. This option would have minor impact on Idaho reservoirs, but would impact barging and hydrogeneration downriver. Which option would you favor?

_____ The Flush

_____ The Drawdown

_____ Neither

Submitted by:

See individual Abstracts

Approved by:

IDAHO DEPARTMENT OF FISH AND GAME

Steven M. Huffaker, Chief
Bureau of Fisheries

Dexter Pitman
State Fisheries Manager