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IDAHO
DEPARTMENT OF FISH AND GAME

Rod Sando, Director

FEDERAL AID IN SPORT FISH RESTORATION

FISHERY MANAGEMENT PROGRAM
F-71-R-25

ANNUAL FISHERIES MANAGEMENT PERFORMANCE REPORTS*
2000

Project	I.	Surveys and Inventories
Project	II.	Technical Guidance
Project	III.	Habitat Management
Project	IV.	Population Management
Project	V.	Coordination

*Copies of complete reports available from Idaho Department of Fish and Game, PO Box 25, Boise, ID 83707

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IDAHO
DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Panhandle Region (Subprojects I-A, II-A, III-A)

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

By

Ned Horner, Regional Fisheries Manager
Jim Fredericks, Regional Fisheries Biologist
Mark D. Liter, Regional Fisheries Biologist

2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project I:	Surveys and Inventories	Subproject:	I-A Panhandle Region
Job No.:	a	Title:	Mountain Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

There were no mountain lake survey related activities in the Panhandle Region during this contract period.

Author:

Ned Horner
Regional Fisheries Manager

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project I: Surveys and Inventories | Subproject: I-A Panhandle Region

Job No.: b | Title: Lowland Lake Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

A midwater trawl was used to estimate the kokanee *Oncorhynchus nerka* population in Coeur d'Alene Lake in early August. Trawl results indicated continued low numbers of adult kokanee, with the total population of age-3 fish estimated at 75,000, or 8 fish/ha. We estimated 784,000 age-1 and 169,000 age-2 kokanee. The estimated population of age-0 kokanee was 4.18 million fish. The standing stock of kokanee was 5.8 kg/ha. Kokanee fry collected in the trawl ranged from 30 to 80 mm TL, age-1 kokanee ranged from 100 to 170, age-2 fish ranged from 180 to 250 mm, and age-3 kokanee ranged from 240 mm to 340 mm. Hydroacoustic surveys confirm that the trawler underestimates the older age-classes of kokanee, but is accurate for age-0.

We counted 45 chinook salmon *Oncorhynchus tshawytscha* redds in the Coeur d'Alene River drainage and five in the St. Joe River. All redds were left undisturbed to provide natural production. We stocked 28,200 age-0 chinook salmon at the Mineral Ridge boat ramp. Volunteer anglers implanted $10 spaghetti tags in chinook salmon to monitor exploitation. Based on angler returns of reward tags and a correction factor for non-reporting, chinook salmon exploitation in Coeur d'Alene Lake in 2000 was around 20%.

A midwater trawl was used to estimate the kokanee population in Spirit Lake in early August. We estimated a total kokanee population in Spirit Lake of 901,900 fish. Age-3 kokanee ranged from 250 to 280 mm at the time of trawling, and the population was estimated at 7,800 fish, or 13 fish/ha. This is much lower than the average density in recent years of around 100 fish/ha. Age-2 kokanee were also very low in abundance. The age-2 population was estimated at only 6,800 fish, or 12 fish/ha. Age-1 kokanee ranged from 150 to 190 mm. The age-1 population was much improved over the age-1 estimate form 1999 and was 73,000 fish.

An additional 365 lake trout *Salvelinus namaycush* were tagged by the Priest Lake volunteer angler. Fish ranged from 300 to 590 mm (TL), with a mean size of 474 mm. Twenty-nine tags from previous tagging efforts were returned in 2000. Annual growth of tagged fish ranged from 0 to 84 mm, with an average of 40 mm. The return rate for tagged fish since 1983 for the first full year after tagging ranged from 0 to 16.8%, with a weighted mean of 6.8%. The mean annual decline in tag returns was 25%, which would likely be a close approximation of natural mortality (including tag loss).

We conducted a fish population survey of the northwest Smith Creek Slough, located on the Boundary Creek WMA, on June 21-22, 2000. The purpose of the survey was to determine fish species composition, assess size structure of game fish, and assess the potential for developing and/or enhancing sport-fishing opportunities. We collected seven species of fish in the four gill nets including yellow perch *Perca flavescens*, pumpkinseed *Lepomis gibbosus*, and black

bullhead *Ameiurus melas*. Game species collected were not of a size to attract significant angling effort. Although fish abundance in the surveyed areas was moderately high, the size structure, macrophyte cover and difficult shoreline access greatly limit the value of the Smith Creek Slough as a sport fishery.

We conducted a creel survey on Pend Oreille Lake from February 1, 2000 through January 30, 2001, with the primary objective of assessing rule changes designed to increase harvest of rainbow trout *O. mykiss* and lake trout. Anglers fished a total of nearly 364,000-rod hours during the survey period, or 232,200 angler hours during 33,140 angler days. Nearly 86% of the effort was for rainbow trout, and around 8% was for lake trout. The remaining effort was by anglers targeting "any" fish (3%), warmwater fish (2%), or cutthroat trout *O. clarki* (1%). Estimated harvest of rainbow trout was 8,827 fish. Around 40% of the rainbow trout landed were harvested. The mean catch rate of rainbow trout for the entire season by anglers targeting rainbow trout was around 20 rod h/fish. Estimated harvest of lake trout was 4,707 fish. Anglers harvested around 78% of the lake trout landed. The mean catch rate of lake trout for the entire season by anglers targeting lake trout was 8 rod h/fish. The estimated harvest of cutthroat trout was 1,032, with anglers harvesting almost 70% of the fish landed.

Authors:

Jim Fredericks
Regional Fishery Biologist

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project I: Surveys and Inventories | Subproject: I-A Panhandle Region

Job No.: c | Title: Rivers and Streams Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We used boat mounted electrofishing equipment to conduct a mark-recapture population estimate of westslope cutthroat trout *Oncorhynchus clarki lewisi*, rainbow trout *O. mykiss* and mountain whitefish *Prosopium williamsoni* in the lower Coeur d'Alene River during May 2000. We estimated a population of 2,265 cutthroat trout >100 mm or 440 trout/km in the 5.1 km transect. Cutthroat trout ranged from 90 to 480 mm in total length, with a mean of 252 mm. Approximately 41% of cutthroat trout were protected by the 8-16 in slot limit. We estimated a total population of 9,615 mountain whitefish >100 mm or 1,867 whitefish/km. Mountain whitefish ranged from 37 to 425 mm, and also had a mean length of 252 mm.

A total of 38 cutthroat trout, 28 rainbow trout, three cutthroat x rainbow trout hybrids, and eight brook trout *Salvelinus fontinalis* ranging from 175-480 mm were tagged with reward tags in 2000 in the lower Coeur d'Alene River. Anglers reported four tagged cutthroat and one tagged brook trout, for a combined return rate of 9.5%. After adjusting for noncompliance, estimated cutthroat exploitation in 2000 was around 16%.

In July 2000, we snorkeled a total of 59 index transects in the St. Joe, North Fork Coeur d'Alene and Little North Fork Coeur d'Alene rivers to estimate trout and mountain whitefish abundance and approximate size distribution. Mean densities of age-1 and older westslope cutthroat trout and mountain whitefish in the St. Joe River transects was 1.25 and 1.90 fish/100 m^2, respectively. Densities in the North Fork Coeur d'Alene River were 0.67 westslope cutthroat trout, 0.37 rainbow trout, and 3.2 mountain whitefish/100 m^2. Densities in the Little North Fork Coeur d'Alene River were 0.68 westslope cutthroat and 0.24 rainbow trout/100 m^2. No mountain whitefish were observed in the Little North Fork Coeur d'Alene River.

We used a backpack electrofisher to sample the upper St. Joe River, Medicine Creek, and Wisdom Creek to determine fish species composition, size structure, and abundance. Bull trout *S. confluentus* were the only salmonid captured in Medicine Creek while bull trout and cutthroat trout were captured in Wisdom Creek and the upper St. Joe River. Bull trout and cutthroat trout captured were juveniles, and were 60-155 mm and 80-182 mm, respectively. Bull trout density estimates were highest in Medicine Creek, where they ranged from 6.2 to 10.9 fish/100 m^2.

We conducted bull trout redd counts in index streams of the Pend Oreille, Upper Priest, St. Joe, and Little North Fork of the Clearwater drainages in September and October to add to the long-term trend data set. We counted 740 bull trout redds in the Pend Oreille drainage, 29 redds in the upper Priest Lake drainage, 48 redds in the St. Joe River drainage, and 18 redds in the Little North Fork of the Clearwater River drainage. There was no clear trend in bull trout redd

abundance across the four drainages in 2000. The number of redds counted in the Pend Oreille, St. Joe, and Little North Fork of the Clearwater drainages were above the index stream means, but counts in the Upper Priest drainage were below the mean.

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Regional Fisheries Manager

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project II: Technical Guidance | Subproject: II-A Panhandle Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Panhandle Region 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, and letters, continuation of the Panhandle Region portion of the 1-800 ASK-FISH program, and fishing clinics.

Author:

Ned Horner
Regional Fishery Manager

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-25

Project III: Habitat Management Subproject: III-A - Panhandle Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Fish passage was restored in Bruin Creek, tributary to the St. Joe River, by placing a detachable ladder in a smooth bottom concrete box culvert to catch and hold bedload gravel. A kokanee *Oncorhynchus nerka* spawning channel in Spring Creek, tributary to Lightning Creek, Pend Oreille Lake, was reconstructed by removing accumulated vegetation, reconstructing seven drop log structures and adding 1,200 m^3 of new gravel.

Author:

Ned Horner
Regional Fisheries Manager

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Rod Sando, Director

Federal Aid in Sport Fish Restoration
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Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Clearwater Region (Subprojects I-B, II-B, III-B)

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

By

Tim Cochnauer, Regional Fishery Manager
Jody Brostrom, Regional Fishery Biologist
Larry Barrett, Senior Fishery Technician
Justin Peterson, Biological Aid

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-B Clearwater Region
Job: a		Title:	Mountain Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Twenty-one mountain lakes were surveyed in the Nez Perce National Forest during August-September 2000. The lakes were surveyed for biological factors including: fish, amphibians, vegetation invertebrates, birds, and mammals. Physical and aspect data including depth, location, temperature, and substrate were also collected for each lake. This information will be compiled to aid in future management for these lakes.

Authors:

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Justin Peterson
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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-B Clearwater Region
Job: b		Title:	Lowland Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

No data are available for lowland lakes investigations for this work period.

Author:

Tim Cochnauer
Regional Fishery Manager

2000 ANNUAL JOB PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-B Clearwater Region
Job: c		Title:	Rivers and Streams Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Clearwater Region fishery management personnel snorkeled or coordinated data collection for 299 stream transects within the Clearwater, Salmon and Snake river drainages to obtain data for the long-term database. One hundred eleven adult chinook salmon *Oncorhynchus tschawytscha* redds were counted in traditional aerial spawning ground counts in the Lochsa and Selway rivers, and 198 were counted in the South Fork Clearwater drainage.

Authors:

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Senior Fishery Technician

2000 ANNUAL JOB PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project II: Technical Guidance | Subproject: II-B Clearwater Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

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

Author:

Tim Cochnauer
Regional Fishery Manager

2000 ANNUAL JOB PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-26

Project III: Habitat Management | Subproject: III-B Clearwater Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We continued to work with local sportsmen to correct later summer algae problems at Elk Creek Reservoir.

Author:

Tim Cochnauer
Regional Fishery Manager

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DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Southwest Region—McCall (Subprojects I-C, II-C, III-C)

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

By

Don Anderson, Regional Fishery Manager
Paul Janssen, Regional Fishery Biologist
Kimberly A. Anderson, Regional Fishery Biologist
Lauri Hostettler, Fishery Technician
Kris A. Bublow, Fishery Technician

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-C Southwest Region—McCall
Job: a		Title:	Mountain Lakes Investigation

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Fish population status and/or physical habitat parameters were surveyed and stocking strategies were assessed on eight mountain lakes in 2000.

Westslope cutthroat trout *Oncorhynchus clarki lewisi* were collected from CR Lake (07-422), Long Lake (07-528), Rice Lake (07-525), and Willow Basket Lake (07-403). Brook trout *Salvelinus fontinalis* were collected from Box Lake (09-377), Granite Twin Lake (07-194), and Nethker Lake #1 (07-414). Bull trout *Salvelinus confluentus* were found in Rice Lake (07-525). No fish were collected from Nethker Lake #2 (07-443), however frogs and salamanders were abundant.

Authors:

Lauri Hostettler
Fishery Technician

Paul Janssen
Regional Fishery Biologist

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-C Southwest Region—McCall
Job: b		Title:	Lowland Lakes Investigations

Contract Period: July 1, 2000 to June 1, 2001

ABSTRACT

We completed holiday shore angler and boat counts on Cascade Reservoir, recording the lowest counts ever made.

We completed a Memorial Day weekend creel survey on Horsethief Reservoir, which revealed that 1,706 angler hours were spent to catch 422 rainbow trout *Oncorhynchus mykiss.*

We completed Department standard lake surveys on Granite and Upper Payette lakes.

Hydroacoustic surveys of Payette Lake revealed a kokanee *Oncorhynchus nerka kennerlyi* population of 620,000.

We chemically renovated Lost Valley Reservoir with rotenone to eliminate an unwanted yellow perch *Perca flavescens* population.

Investigations into the yellow perch population collapse in Cascade Reservoir continued in 2000. We examined the predatory potential of northern pikeminnow *Ptychocheilus oregonensis* on yellow perch. We documented the fate of the 1999 yellow perch cohort and monitored the entire yellow perch population in the reservoir. We found the 1999 yellow perch cohort had virtually disappeared by August 2000. Declines in the early 1990s in the yellow perch population were probably caused by predation and/or disease. Studies in 2000 indicated northern pikeminnow to be preventing recovery of the yellow perch population.

Author:

Paul Janssen
Regional Fisheries Biologist

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-C Southwest Region—McCall
Job: c		Title:	Rivers and Streams Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

The 2000 kokanee *Oncorhynchus nerka kennerlyi* spawning run in the North Fork Payette River above Payette Lake was estimated to be 26,850 fish with a total biomass of 5,061kg.

We completed standard Department stream surveys on 12 streams in the upper stretches and headwaters of the Little Salmon River. We collected salmonids in all streams sampled including rainbow trout *Oncorhynchus mykiss* and brook trout *Salvelinus fontinalis*. We also collected an unidentified subspecies of cutthroat trout *Oncorhynchus clarki* from Trail Creek.

Temperature recorders monitored the upper Little Salmon River drainage throughout the summer of 2000. Mean daily temperatures peaked at 22.8°C in early August. The highest daily temperature recorded was 26.7°C. The highest minimum daily temperature was 19.6°C, with only one occurrence. Summer river temperatures were noticeably higher than in 1999. A summary is presented of temperature data collected since 1994.

Wapiti Meadows Ranch Outfitters guided anglers in a three-mile section of the South Fork Salmon River below the confluence with the Secesh River. All fishing was catch-and-release. Steelhead/redband trout, cutthroat trout, bull trout *Salvelinus confluentus*, and juvenile chinook salmon *Oncorhynchus tshawytscha* were reported in the catch. Catch rates for all species combined are reported. A summary is presented of this guided angling activity since 1994.

Authors:

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Kris A. Buelow
Fishery Technician

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project II: Technical Guidance | Subproject: II-C Southwest Region—McCall

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

McCall Subregion fishery management personnel responded to more than 300 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 to 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, Idaho Outfitters and Guides licensing, private pond permits, and land management planning. We provided data and technical advice to an increased number of fisheries consultants. The listing of three native salmonids under the Endangered Species Act has increased the number of request for technical input.

Regional fishery personnel continued participation on a technical advisory committee for the Big Payette Lake Water Quality Council. The group conducted studies, developed a comprehensive technical report identifying nutrient and bacterial contamination sources, and recommended remedial action

Fishery personnel continued participation on a technical advisory committee for the Cascade Restoration Project to improve water quality and fish habitat in Cascade Reservoir. Cascade Reservoir is listed as a water quality limited water by the Idaho Division of Environmental Quality. Currently it is not fully supporting beneficial uses including cold water biota criteria. The technical advisory committee identified phosphorus sources and developed reduction measures. A Total Maximum Daily Load (TMDL) was established that would result in a 37% reduction in phosphorus loading. Source plans were prepared and an implementation plan was drafted.

WestRock Resort is proposed for the west side of Cascade Reservoir and could potentially double the population of Valley County. We provided technical review on several components of the proposal.

We also gave numerous presentations to schools, sportsperson groups, and civic organizations. We answered many questions from the angling public on fishing opportunities, regulations, techniques, and specific waters. We maintained fishing reports for the Department Internet Homepage and 1-800-ASK-FISH.

Authors:

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Regional Fishery Biologist

Paul Janssen
Regional Fishery Biologist

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project III: Habitat Management | Subproject: III-C Southwest Region—McCall

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

McCall area fishery personnel participated in many fora for the restoration, maintenance, and enhancement of fish habitat and water quality. This participation included membership on several technical advisory committees for state and federal planning efforts. Fishery personnel commented on more than 300 requests for technical advice. Many proposed land management activities required Idaho Department of Fish and Game review to assure fish habitat consideration. Other natural resource agencies requested contributions to planning documents regarding fishery resources and habitat. Much of our participation is described in the Technical Guidance section of this annual report. There is considerable overlap between technical guidance and habitat management.

The development of community fishing ponds increases fish habitat, angler opportunity, and overall participation in the sport. McCall area fishery personnel continued planning and development of fishing ponds in the communities of Council and Cascade. Both ponds were constructed within city parks and have strong community support. Landscaping and final adjustments continue.

Authors:

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IDAHO
DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Southwest Region—Nampa (Subprojects I-D, II-D, III-D)

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

By

Dale Allen, Regional Fishery Manager
Brian J. Flatter, Regional Fishery Biologist
Kurtis Plaster, Senior Fisheries Technician

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-D Southwest Region—Nampa
Job No.: a		Title:	Mountain Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Twenty one mountain lakes or ponds were visited in 2000. Two lakes were in the South Fork Boise River drainage, and nineteen were in the Middle Fork Boise River drainage. Sinking gill nets were set overnight and angling occurred in two waters, overnight sinking gill net sets without angling occurred in two waters, angling only occurred in eight lakes, and visual observations only occurred in seven lakes. Twelve of the lakes or ponds contained hatchery trout populations.

Mountain lakes were surveyed for the presence of amphibians. Adult spotted frog *Rana luteiventris* were found in two of the waters, juvenile spotted frogs were found in two waters, and long toed salamander *Ambystoma macrodactylum* were found in one water.

Data on the amount of human use and presence and condition of trails to the lakes was collected and recorded. All data collected was entered into an ACCESS database.

Author:

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-D Southwest Region—Nampa
Job No.: b		Title:	Lowland Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Two regional waters were sampled with a multiple gear lowland lake sampling strategy, which included experimental gill nets, trap nets, and boat electrofishing. Lake Lowell and C. J. Strike Reservoir were sampled in this manner. A total of 244 fish were collected in Lake Lowell. Black crappie *Pomoxis nigromaculatus*, bluegill *Lepomis macrochirus*, channel catfish *Ictalurus punctatus*, largemouth bass *Micropterus salmoides*, smallmouth bass *M. dolomieu*, and yellow perch *Perca flavescens,* were the gamefish represented in the catch. Nongame species represented 63% of the total catch. A total of 1,096 fish were collected in C.J. Strike Reservoir. Captured gamefish included smallmouth bass, largemouth bass, bluegill, pumpkinseed *L. gibbosus*, black crappie, white crappie *P. annularis*, warmouth *L. gulosus*, yellow perch, brown bullhead *Ameiurus nebulosus*, and channel catfish. Non-game species comprised 32 % of the total catch.

Succor Creek Reservoir was sampled with experimental gill nets and trap nets. Captured gamefish included redband trout *Oncorhynchus mykiss gairdneri* and hatchery rainbow trout *O. mykiss*. Non-game species collected included bridgelip sucker *Catostomus columbianus* and redside shiner *Richardsonius balteatus.* As in 1996, bridgelip sucker dominated the total catch.

Hydroacoustic surveys were conducted on Arrowrock, Lucky Peak, and Deadwood reservoirs. The sonar estimate of pelagic fish abundance in Arrowrock Reservoir was 62,000. Partitioning the netting information produces an estimate that 65% of the fish were northern pikeminnow *Ptychocheilus oregonensis*. Rainbow trout and smallmouth bass each comprised 11.5% of the estimated population in the reservoir. The estimate of pelagic fish abundance in Lucky Peak Reservoir was 95,000 $\pm$ 12%. The mean density of pelagic fish in the reservoir was 86 fish/ ha. Densities ranged from 14 to 132 fish/ha. The sonar estimate of kokanee *O. nerka* abundance in Deadwood Reservoir was 266,000 $\pm$ 30%. Kokanee less that 100 mm (YOY) comprised 93% of the estimated population. The abundance of age-1 and age-2 kokanee was 10,000 and 7,000, respectively.

An evaluation of the hatchery trout stocking program at C.J. Strike Reservoir was conducted using jaw tagged catchables, three groups of differentially grit marked fingerlings, and a creel survey. Jaw tagged catchables were released at two locations in the fall of 1999 and spring of 2000. Grit marked fingerlings were released at three locations. Anglers submitting jaw tag returns were entered into two drawings for $100.00 gift certificates. Total jaw tag returns were significantly different between stocking locations, but season of year had no significant effect. A total of 23 grit marked fingerlings were recaptured using electrofishing, gillnetting, and angling.

Ninety-six percent of the recaptured fingerlings were from two of the three release locations. Between April and November, growth of fingerlings averaged 283 mm. Angler effort and rainbow trout harvest was evaluated during March, April, and May. A total of 828 anglers were interviewed. Total hours of fishing were estimated to be 25,804 h for bank anglers and 18,028 h for boat anglers. Estimated total rainbow trout catch was 1,408, for a catch rate of 0.032 rainbow trout/h.

Zooplankton samples were taken from Arrowrock, Lucky Peak, and C. J. Strike reservoirs. The C.J. Strike zooplankton quality index (ZQI - a measure that includes abundance and zooplankton size) results were very similar to 1999. The only section sampled with a considerable change was in the Snake River Arm. In 1999, the ZQI in the Snake River Arm was 0. In 2000, the same section had a ZQI of 1.12. Only a slight change was observed in the calculated ZQI for Lucky Peak. A slight decrease in ZQI was observed in Arrowrock Reservoir from 1999 to 2000.

Four fishing tournaments were held at Lake Lowell during April, May, and August 2000. A total of 312 anglers fished for 5,092 hours and caught 1,853 largemouth bass and 7 smallmouth bass.

Authors:

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Senior Fisheries Technician

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-D Southwest Region—Nampa
Job No.: c		Title:	Rivers and Streams Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Grimes and Mores creeks were electrofished on August 8 and 9, 2000 to conduct two-pass population estimates for rainbow (redband) trout *Oncorhynchus mykiss* in each stream. A total of five sections were electrofished in each stream. Population estimates were calculated for rainbow trout. Catchable rainbow trout were sampled in Grimes Creek at two sections, and in Mores Creek at two sections. Densities of rainbow trout ranged from 0 to 0.47 fish per $100m^2$ in Grimes Creek, and from 0.45 to 2.35 fish per $100m^2$ in Mores Creek. No bull trout *Salvelinus confluentus* were sampled in either stream.

Sixteen sites in the Yuba River drainage were electrofished between July 18 and 20, 2000. Fourteen contained wild rainbow trout, bull trout were found in four.

Snorkeling was conducted in eleven locations of the Middle Fork Boise River (MFBR), three in the Yuba River, and eleven sites in the North Fork Boise River (NFBR). All MFBR snorkel locations were repeats of sites done in 1988 and 1993. Data from the NFBR was compared against snorkeling information collected prior to and following major landslide events that occurred in early September 1995.

A fish trap was operated in the Kirby Dam fish ladder for 111.5 h in May. A total of 20 fish were collected, including 9 bull trout.

Snorkel surveys were conducted in Elk and Sulphur creeks trend areas August 14 through 17, 2000. Densities of age-0 chinook salmon *O. tshawytscha* ranged from 0.08 to 0.63 fish/$100m^2$ in Elk Creek, and from 0.07 to 0.32 fish/$100m^2$ in Sulphur Creek.

Salmon spawning ground surveys were conducted in Bear Valley, Elk, and Sulphur creeks trend areas from August 28 to 30, 2000. Salmon redds numbered 69, 83, and 5 in Bear Valley, Elk, and Sulphur creeks respectively.

Authors:

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Regional Fisheries Biologist

Kurtis Plaster
Senior Fishery Technician

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project II: Technical Guidance | Subproject: II-D: Southwest Region—Nampa

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Regional fishery personnel continue to respond to a large number of public requests for fishing information. Biweekly ASK FISH reports were prepared and forwarded to vendors for distribution. Regional fishery staff consulted with the Environmental Staff Biologist for requests on fish population status and concerns on a multitude of projects in the Southwest Region of Idaho Department of Fish and Game. Regional fishery staff assumed duties for the Environmental Staff Biologist while that position was vacant for several months. Numerous requests for fish stocking advice and/or rates were received from local Treasure Valley residents.

Regional fishery personnel participated in the Bull Trout *Salvelinus confluentus* Recovery Unit Team for the Southwest Idaho.

Regional fishery staff participated with the U.S. Bureau of Reclamation in environmental planning for the rebuilding of the outlet works of Arrowrock Dam. Staff prepared comments on fishery mitigation and review of the Draft EIS.

Author:

Dale B. Allen
Regional Fishery Manager

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project II: Habitat Management | Subproject: III-D Southwest Region—Nampa

Period Covered: July 1, 1999 to June 30, 2001

ABSTRACT

Claytonia Pond, located three miles north of Marsing is a small irrigation return pond with limited natural fish habitat. In 1999 apple tree stumps were placed in the pond using steel posts and cable to anchor the stumps. In 2000 approximately 250 additional stumps were added creating five rows, which extend towards the water and perpendicular to the stump row placed in 1999. The additional five rows of stumps offer deep-water cover for largemouth bass *Micropterus salmoides*, bluegill *Lepomis macrochirus*, and channel catfish *Ictalurus punctatus*. Several stumps were also placed on and around a small island in the middle of the pond to increase deep-water fish habitat.

An electrofishing survey was conducted in June 2000 to evaluate fish usage of the habitat placement. Several largemouth bass and bluegill were shocked during a 45 minute energized field period at Claytonia Pond.

Habitat measurements were taken on reaches of Grimes and Mores Creeks, tributaries in the Boise River Basin. Standard Department stream habitat parameters were documented and entered into regional stream survey database. Results are reported in Project I, Job c, of this report.

Seventy plastic "cube" habitat structures were placed in the Bruneau Arm of C.J. Strike Reservoir. Idaho Bass Federation volunteers, an Idaho Power Company biologist, Fish and Game Reservists and regional fishery staff provided the labor to construct and place the structures.

The cubes were constructed with small diameter PVC plastic pipe, PVC fittings; then cut and glued into a cubic framework. The framework measured roughly 1.2 m per side. The framework was then covered with orange plastic safety fencing that is commonly encountered at construction sites. The plastic safety fencing was attached to the framework with plastic zipties. The completed cubes were loaded into boats and a concrete block was attached with large plastic zipties and the cube was then sunk. The cubes were placed west of the Cottonwood Access Area marina opposite from the irrigation pumps in approximately three to five meter of depth.

The cost of materials for an individual cube cost was approximately $25.00. The Idaho Bass Federation, Idaho Power Company and the Department provided funds for the project. All groups involved plan on providing funds and labor in the future to continue constructing and placing these artificial reefs in the reservoir.

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Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Magic Valley Region (Subprojects I-E, II-E, III-E)

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

By

Fred Partridge, Regional Fishery Manager
Douglas J. Megargle, Regional Fishery Biologist
Charles D. Warren, Regional Fishery Biologist
Karen A. Frank, Fisheries Technician

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project I: Surveys and Inventories | Subproject: I-E Magic Valley Region

Job: a | Title: Mountain Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Mountain lakes were not surveyed in the Magic Valley Region during 2000.

On September 12, 2000, regional personnel stocked 17 mountain lakes with 13,900 fingerling cutthroat trout *Oncorhynchus clarki.* An additional 15 lakes were stocked with 11,800 fingerling rainbow trout *O. mykiss.* Lakes were stocked by fixed wing aircraft except for Lake Cleveland and Independence #2, which were stocked by vehicle and back pack, respectively.

Author:

Fred Partridge
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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project I: Surveys and Inventories | Subproject: I-E Magic Valley Region

Job: b | Title: Lowland Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Fisheries in Salmon Falls Creek Reservoir and the upper Bruneau Sand Dunes pond were investigated in 2000 using standardized lowland lakes survey protocols. Salmon Falls Creek Reservoir was found to have a strong population of rainbow trout *Oncorhynchus mykiss,* walleye *Stizostedion vitreum* and smallmouth bass *Micropterus dolomieu* along with six other fish species and a dense population of the crayfish *Pacifastacus leniusculus*. Numbers of young-of-the-year forage species were low. Back calculated growth rates of walleye show a sharp decline in the last two years. The zooplankton quality index in Salmon Falls Creek Reservoir was found to be high at 1.15 on August 25, 2000.

The upper Bruneau Sand Dunes pond was found to have only largemouth bass *M. salmoides* and bluegill *Lepomis macrochirus*, which are the only species restocked into that pond since it was treated with rotenone in 1996.

Kokanee *Oncorhynchus nerka* in Anderson Ranch Reservoir were sampled by midwater trawling which indicated approximately 667,000 fish in the reservoir. The strong 1999 year class resulted in the highest estimate (41,000) of age-1 kokanee since 1994. Hydroacustics estimates in 2000 found significantly more kokanee than trawl estimates. The annual spawning run abundance trend count indicated the run to be about twice the size of its parent stock in 1997, however only about a third the size of the 1999 run. The zooplankton quality index in Anderson Ranch Reservoir was found to be exceptionally low at 0.05 on July 31, 2000.

Night electrofishing in Niagara Springs WMA ponds showed good populations of wild rainbow trout. Compared to 1991, there was a 18 % decline in the population estimate in the upper pond and a 513% increase in the estimate in the lower pond. However the average size of rainbow trout has declined in the lower pond while the average size has remained the same in the upper pond.

Magic Reservoir brown trout *Salmo trutta* spawning abundance was monitored with a redd count as in previous years. There were 443 redds counted in the Big Wood River which is the same as in 1999.

The zooplankton quality index in Magic Reservoir on July 20, 2000 was 0.86.

Authors:

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-E Magic Valley Region
Job: b		Title:	Rivers and Streams Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Three sites monitored by electrofishing during the fall on the Big Wood River found wild rainbow trout *Oncorhynchus mykiss* numbers continuing to be high. In the Hailey and Gimlet reaches, numbers of wild rainbow trout over 200 mm continued to exceed 70 fish/100m. In the Lake Creek reach, numbers exceeded 22 fish/100 m for the first time since monitoring began in 1986.

Sampling continued on regional streams within historic Yellowstone cutthroat trout *Oncorhynchus clarki bouvieri* range. Cutthroat trout were found in four of the six streams sampled. Fish were sampled from these streams as part of an effort to learn about the status and trends in Yellowstone cutthroat trout populations in Idaho. Comparisons of cutthroat trout population density estimates from surveys done since 1986 were mixed but did not indicate an overall trend up or down in population numbers for the species within the region.

One flight in August 2000 was made to see if any radios placed in bull trout *Salvelinus confluentus* in the South Fork Boise drainage in 1998 and 1999 were still active. One radio was located in upper Big Smoky Creek near where the fish was located in 1999. This fish had returned to the South Fork Boise River above Anderson Ranch Reservoir in October 1999.

A total of 134 brown trout *Salmo trutta* were moved from Stalker Creek to the Little Wood River below Richfield to reestablish fish in an area, which had a fish kill in 1998. The brown trout ranged from 160 to 625 mm with an average size of 393 mm.

Authors:

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project II: Technical Guidance | Subproject: II-E Magic Valley Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

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

Information was provided to the regional Environment Staff Biologist, Idaho Department of Water Resources and private landowners on stream alteration projects on the Big Wood River, Silver Creek, Parker Gulch, Wine Creek and Camas Creek.

Regional fishery personnel attended meetings and commented on relicensing for the Idaho Power Projects on the Malad River.

Author:

Fred E. Partridge
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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project III: Habitat Management | Subproject: III-E Magic Valley Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Magic Valley Region personnel made slight repairs and improvements to rock drop structures downstream of a culvert barrier on the Feather River to improve migration access for bull trout *Salvelinus confluentus* in the South Fork Boise drainage. Improvements at this site have the potential of opening up more than 32 km of stream above 1,500 m elevation. Additional man made barriers were surveyed through out the upper South Fork Boise drainage for future improvements.

Magic Valley Region personnel performed habitat surveys on three sites in Yellowstone cutthroat trout *Oncorhynchus clarki bouvieri* streams.

Water temperatures checked on September 7, 2000 at the outflow of the Murphy's Hot Spring discharge were not warm enough to cause a thermal block for migrating fish.

Plans were developed to begin a long-term forage fish habitat improvement project in Salmon Falls Creek Reservoir using juniper trees and volunteer labor.

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DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Southeast Region (Subprojects I-F, II-F, III-F)

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

By

Richard Scully, Regional Fishery Manager
James Mende, Regional Fishery Biologist
Chad Rawlins, Fishery Technician

2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project I:	Surveys and Inventories	Subproject:	I-F Southeast Region
Job:	b	Title:	Lowland Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We conducted a creel survey on American Falls Reservoir during the months of March through November. Clerks contacted 1,099 anglers during the survey, producing estimates of 125,435 hours of effort from an estimated 24,544 anglers (5.1 h/angler). Angling effort peaked during the month of July with an estimated 25,306 hours of effort. Anglers caught an estimated 21,086 fish (0.17 fish/h) of which 65.8% were rainbow trout *Oncorhynchus mykiss*, 28.2% smallmouth bass *Micropterus dolomieu*, and 6% other species (brown trout *Salmo trutta*, Yellowstone cutthroat trout *O. clarki bouvieri*, hybrid trout *O. mykiss x O. clarki*, and kokanee *O. nerka kennerlyi*). Anglers harvested 91% of all rainbow trout caught while only 15% of smallmouth bass caught were harvested.

In conjunction with Fisheries Research personnel, we attempted to determine the number of game fish lost (through mortality or entrainment) to anglers from American Falls Reservoir during a period of severe drawdown. As part of the investigation, regional personnel conducted gill net surveys (both vertical and horizontal) during day and night sets. A total of 15 vertical gill net sets resulted in the capture of 62 Utah chub *Gila atraria*, 22 Utah sucker *Catostomus ardens*, and a single brown trout. With five sets of three horizontal gill nets, we captured 204 Utah chub, one common carp *Cyprinus carpio*, 221 Utah sucker, 4 rainbow trout, 2 brown trout, and 7 yellow perch *Perca flavescens*.

We closely monitored two bass tournaments, on American Falls Reservoir and Glendale Reservoir, during the year 2000. During the American Falls Reservoir tournament on June 24, 2000, 36 anglers fished a total of 360 hours to catch and keep (later released) 90 smallmouth bass for a keep rate of 0.25 fish kept/h. Mean length of fish kept (tournament minimum equaled 305 mm) was 369 mm with a standard deviation of 30 mm. Mean weight of fish kept was 894 g with a standard deviation of 233 g. The mean relative weight (R_w) of smallmouth bass kept during the tournament was 121%.

During the Glendale Reservoir bass tournament on June 15, 2000, 16 anglers fished a total of 164 hours to catch and keep (later released) 75 largemouth bass *M. salmoides* for a keep rate of 0.46 fish kept/h. Mean length of fish kept (tournament minimum equaled 305 mm) was 371 mm with a standard deviation of 22 mm. Mean weight of fish kept was 704 g with a standard deviation of 108 g. The mean R_w of largemouth bass kept during the tournament was 94%.

We conducted a lowland lake survey on Foster Reservoir on March 6, 2000. Relative species composition was 54.7% yellow perch, 28.2% rainbow trout, 11.1% bluegill *Lepomis macrochirus*, and 6.0% crappie *Pomoxis sp.* Rainbow trout averaged 341 mm in length and weighed an average of 495 g. Mean R_w for rainbow trout was 103%. A small difference was detected in the mean R_w for spring-stocked (100%) and fall-stocked (96%) rainbow trout; however, the difference was not significant at $\alpha = .05$.

Authors:

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Chad Rawlins
Fishery Technician

2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project I:	Surveys and Inventories	Subproject:	I-F Southeast Region
Job:	c	Title:	Lowland Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We conducted a creel survey on the Snake River from McTucker Ponds launch to the base of Gem State Dam during the months of March through August. Creel clerks contacted 307 anglers and analysis of those contacts provides an estimate of 26,091 anglers fishing for 69,935 hours to catch 15,041 fish (0.22 fish/h). Boat anglers accounted for 36.6% of the effort. Peak total effort was during the month of March with 15,147 hours; while May and August had the lowest effort at 9,150 and 9,648 hours respectively. Rainbow trout *Oncorhynchus mykiss* made up 89.2% of the catch with brown trout *Salmo trutta*, cutthroat trout *O. clarki*, and rainbow x cutthroat hybrids making up the rest. Anglers harvested 44.9% of the fish they caught.

We operated annual opening-day check stations at two boat launches on the Snake River immediately below American Falls Dam. We checked 580 anglers (85.5% boat anglers) and measured 449 fish. Interviewed anglers fished for a total of 2,842 hours and caught 1,010 fish (0.36 fish/h). Anglers harvested 44.0% of the fish they caught with rainbow trout making up 88.9% of the harvest. Other species harvested include: brown trout, cutthroat trout, hybrids, smallmouth bass *Micropterus dolomieu* and a single largemouth bass *M. salmoides.* Combining check station data with aerial survey counts, we estimated that anglers caught a total of 1,611 fish and harvested 695 fish on opening day.

We conducted Yellowstone cutthroat trout *O. clarki bouvieri* spawning ground surveys during the days of June 22 and 23, 2000 on six sites along tributaries to the upper Blackfoot River. The number of observed redds per km increased at all sites when compared to the most recent survey. Redd densities ranged from 1.4 redds/km on Timothy Creek to 13.0 redds/km on Spring Creek. The Timothy Creek data compares with 0.0 observed redds/km in 1996 while Spring Creek had only 4.8 redds/km in 1995. Along with Timothy Creek, three other sites had indications of redd presence that were absent during the last survey.

We conducted population estimates on two sections of the Portneuf River above Lava Hot Springs. Trout densities were 618 fish/km for the upper site and 406 fish/km for the lower one. The upper site catch was made up of 61.0% rainbow trout, 19.4% cutthroat trout, and 19.6% rainbow/cutthroat hybrids. The lower site catch was made up of 55.3% rainbow trout, 21.8% cutthroat trout, and 22.9% hybrids.

We used backpack-electrofishing gear to sample 39 individual sites on 13 streams within the Southeast Region. In the Bear River drainage we sampled 29 sites along First, Second, Third, Preuss, Dry, Giraffe, and Dairy creeks. Bonneville cutthroat trout *O. clarki utah* densities ranged from 0.0 fish/100 m^2 at two sites on Dairy Creek to 38.6 fish/100 m^2 at one site on Giraffe Creek. In the Snake River drainage, we sampled 10 sites along Rapid, Mink, and Rawlins creeks.

Yellowstone cutthroat trout densities ranged from 0.3 fish/100 m^2 at one site on Mink Creek to 42.1 fish/100 m^2 at a site on Rapid Creek.

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-25

Project II: Technical Guidance Subproject: II-F Southeast Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We provided input to the Regional Environmental Staff Biologist on activities affecting fish and anglers. We communicated our concerns to the Bureau of Reclamation and Idaho Power Company during the sever drawdown event on American Falls Reservoir during June-October. We conducted presentations for various parties (anglers and non-anglers) concerning the current status and future plans for various fisheries within the region. We coordinated our stream electrofishing efforts with individuals from the Idaho Division of Environmental Quality, Bureau of Land Management, and the Forest Service. We provided information and assistance with the Department's *Comments to U.S. Fish and Wildlife Service Regarding Petition to List Yellowstone Cutthroat Trout as Threatened Under the Endangered Species Act*. Department personnel monitored and assisted various individuals conducting fish collecting activities.

Authors:

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fishery Management F-71-R-25

Project III: Habitat Management | Subproject: III-F Southeast Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We continued monitoring of several ongoing habitat restoration projects. Some, but not all, of the duties performed by regional personnel include: photo-point repetition and establishment on the Portneuf River; revetment construction/maintenance on the Portneuf River and Blackfoot River; inspection, repair/rebuild of cattle exclosure fencing and modification of four stock watering gaps along 8.6 km of the upper Portneuf River; operated the Department constructed dam on the upper Blackfoot River.

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DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Upper Snake Region (Subprojects I-G, II-G, III-G, IV-G)

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

By

Mark Gamblin, Regional Fisheries Manager
Jeff Dillon, Regional Fishery Biologist
William C. Schrader, Senior Fishery Research Biologist

2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project I:	Surveys and Inventories	Subproject:	I-G Upper Snake Region
Job No.:	a	Title:	Mountain Lakes Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

There were no mountain lake survey related activities in the Upper Snake Region during this contract period.

Author:

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Regional Fisheries Manager

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-25

Project I: Surveys and Inventories | Subproject: I-G Upper Snake Region

Job No.: b | Title: Lowland Lake Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Gill net catch composition on Island Park Reservoir in May was 74% non-game fish (Utah chub *Gila atraria*, Utah sucker *Catostomus ardens*, and redside shiner *Richardsonius balteatus*). Hatchery and wild rainbow trout *Oncorhynchus mykiss* comprised 18% and splake (lake trout *Salvelinus namaycush* x brook trout *S. fontinalis*) 1% of the total catch. Kokanee *O. nerka*, brook trout, and mountain whitefish *Prosopium williamsoni* accounted for 8% of the catch.

We continued routine creel surveys on Ririe Reservoir to monitor catch rates and species composition, and to evaluate experimental plants of catchable-size Yellowstone cutthroat trout *O. clarki bouvieri* and sterile triploid rainbow trout. Overall catch rate from 9 June to 18 September averaged 0.69 fish/h and harvest rate averaged 0.43 fish/h. Harvest composition was 48% hatchery rainbow trout, 21% yellow perch *Perca flavescens*, 19% kokanee, and 10% Yellowstone cutthroat trout. Smallmouth bass *Micropterus dolomieu* and splake comprised about 2% of the harvest. Hatchery Yellowstone cutthroat trout comprised 9% of the total trout stocked and 10% of the trout harvest. Evaluation of sterile triploid rainbow trout was inconclusive due to improper identification of clipped fish in the creel.

The 2000 spawning operations at Henrys Lake produced 1,436,500-eyed cutthroat trout eggs and 343,800 eyed hybrid cutthroat x rainbow trout eggs. All hybrid eggs were heat-shocked to produce sterile triploids. Cutthroat trout in the Hatchery Creek run averaged 436mm and hybrid trout averaged 443mm. No brook trout eggs were taken in 2000. Catch composition in six net nights of gillnetting (custom nets) at Henrys Lake was 10% cutthroat trout, 52% hybrid, 28% brook trout, and 10% Utah chub. Catch composition in additional sampling with standard Department experimental gill nets was 29% cutthroat trout, 13% hybrid, 6% brook trout, 50% Utah chub, and 2% redside shiner.

We estimated natural production to Henrys Lake from three main spawning tributaries. Estimated total cutthroat trout fry produced in Duck, Targhee, and Howard creeks was 138,640 fish. The apparent low production from these tributaries warrants further investigation.

We continued assessments of genetic status of Yellowstone cutthroat trout populations in Henrys Lake and its tributaries. In random lake samples of *Oncorhynchus spp* (n = 71), the overall introgression level was 14%. However, within this sample, those fish phenotypically identified as cutthroat trout (n = 37) were less than 1% introgressed.

Author:

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2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project I:	Surveys and Inventories	Subproject:	I-G Upper Snake Region
Job No.:	c	Title:	Rivers and Streams Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

An electrofishing survey of the Box Canyon Reach of the Henry's Fork of the Snake River was conducted during May 2000. With estimates derived from this sample, we calculated the population of recruited (>150 mm) wild rainbow trout *Oncorhynchus mykiss* (WRB) at 12,221 fish (SD 792). This represents a three-fold increase over the 1996 estimate conducted on this same stretch of river by the Department. Historical trends in the Box Canyon Reach have shown a decline in WRB beginning in the early 1980's, followed by a gradual increase in densities after 1996.

Six sections of the Big Lost River drainage above Mackay Reservoir were electrofished during July 2000. These samples were used to estimate the population size of both rainbow and brook trout *Salvelinus fontinalis*. Salmonid densities in the Bartlett Point Road area were estimated at 925 rainbow trout and 168 brook trout, and reflected an increase in both species over previous samples. Brook trout were the dominant salmonid in the East Fork sections (Whitworth and Fox Creek) and outnumbered rainbow trout. Estimates of abundance for rainbow trout in these sections were 139 (Whitworth) and 110 (Fox Creek). Brook trout were estimated at 170 and 534, respectively. The estimates for the East Fork were similar to results found in 1997, and indicate a stable population exists in this area.

During late June through early August 2000, the Thurmon Creek drainage was sampled with backpack electrofishing gear to assess the effectiveness of the chemical renovation of Golden Lake and the Thurmon Creek drainage. This renovation was intended to remove undesirable trout species (rainbow and brook trout) prior to reintroduction of Yellowstone cutthroat trout *O. clarki bouvieri*. Data collected during these surveys indicated that the initial application of antimycin was unsuccessful, as over 700 brook trout were collected in Middle Thurmon Creek. The majority of these fish would have been young-of-the-year during the initial treatment phase in 1999. Additional chemical treatments (antimycin in combination with rotenone) of the Thurmon Creek assemblage were applied during early October 2000. These treatments were conducted in all areas of Thurmon Creek, and will be evaluated during 2001.

In the South Fork Snake River, a total of 1,205 individual trout were captured during two days of electrofishing at the Conant section in October 2000. Trout species composition and relative abundance were wild and hatchery cutthroat trout (66%), wild rainbow and hybrid trout (22%), and wild brown trout *Salmo trutta* (11%). At Twin Bridges, a total of 1,672 individual trout were captured during four days of electrofishing in September and October 2000. Trout species composition and relative abundance were wild cutthroat trout (28%), wild rainbow and hybrid

trout (1%), and wild brown trout (71%). No lake trout *Salvelinus namaycush* or kokanee *O. nerka kennerlyi* were captured at either section.

At Conant, brown trout relative abundance has varied from 7% to 21% since 1982, the first year of electrofishing. There is no apparent trend. Cutthroat trout relative abundance was 12% higher than in 1997, the all time low. In contrast, rainbow and hybrid trout relative abundance was 5% lower than in 1997, the all time high. At Twin Bridges, brown trout relative abundance has varied from 43% to 71% since 1989, the first year of electrofishing, and was highest on record in 2000. Cutthroat trout relative abundance has varied from 28% to 56%, and was lowest on record in 2000. Rainbow and hybrid trout relative abundance has remained at or below 1% and there is no apparent trend.

Average length at Conant was 315 mm for wild and hatchery cutthroat trout, 307 mm for rainbow and hybrid trout, 312 mm for brown trout, and 313 mm for all species combined. QSD was 2.3% for wild and hatchery cutthroat trout, 13.8% for rainbow and hybrid trout, 12.8% for brown trout, and 6.0% for all species combined. Average length at Twin Bridges was 310 mm for wild cutthroat trout, 296 mm for rainbow and hybrid trout, 284 mm for brown trout, and 291 mm for all species combined. QSD was 5.8% for wild cutthroat trout, 0.0% for rainbow and hybrid trout, 3.1% for brown trout, and 3.9% for all species combined.

Fish densities were not estimated at Conant. At Twin Bridges, estimated density of age-1 and older fish was 99 fish/ha for wild cutthroat trout, 276 fish/ha for brown trout, and 380 fish/ha for all species combined. Density was not estimated for rainbow and hybrid trout due to their small sample size. Rainbow and hybrid trout were not removed at Conant but were killed at Twin Bridges (11 fish) during recapture runs.

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-25

Project II: Technical Guidance Subproject: II-G Upper Snake Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Upper Snake Region 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 the Upper Snake and sinks drainages of Idaho. Technical guidance also included numerous angler informational meetings, presentations, and letters, continuation of the Upper Snake Region portion of the 1-800 ASK-FISH program, and fishing clinics.

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-25

Project III: Habitat Management Subproject: III-G Upper Snake Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

The South Fork Snake River tributary weir and diversion screen projects have been under development since 1997. The objectives are to 1) minimize entrainment of downstream migrating trout into the irrigation diversions; 2) provide adequate upstream fish passage through the diversion/fish weir structure; and 3) serve as a fish trapping facility to manage spawning escapement from the South Fork Snake River to Palisades Creek and minimize rainbow trout/cutthroat trout *Oncorhynchus mykiss x clarki* introgression.

The Palisades Creek irrigation and fish weir trapping facility went into operation in the spring of 2000. Floating, inclined plane weir panels and an upstream trash rack were installed in the Rainey Creek weir site in October 2000. With this final improvement, the Rainey Creek diversion is now complete and meeting the outlined objectives. Construction of the Burns Creek fish trapping facility was started and completed during the fall of 2000. This facility will begin operation in the spring of 2001.

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2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project IV:	Lake Restoration	Subproject:	IV-G Upper Snake Region
		Title:	Lake Restoration

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Because the 1999 Fintrol application appeared to be ineffective in spring and backwater areas common in the drainage, particularly on Middle Thurmon Creek, Golden Lake and the Thurman Creek drainage was treated for a second time in October 2000. Treatment included a combination of Fintrol, liquid rotenone, and powdered rotenone. Tributaries were treated with a combination of Fintrol drip stations (15 ppb), rotenone sand, and backpack sprayers with liquid rotenone. The lake perimeter was treated with liquid rotenone (3 ppm) applied with an airboat. Rotenone sand was also applied to vegetated areas around the perimeter. The main body of the lake was then treated with Fintrol (15 ppb), again applied by airboat. Mortalities were observed in all tributaries, with only a handful observed in the lake. No attempt was made to quantify mortalities. Throughout the 2000 treatment, there were no observed mortalities in live car fish held downstream from the permanganate station. A comprehensive assessment will occur in spring 2001, prior to cutthroat trout *Oncorhynchus clarki* reintroduction. This will include backpack electrofishing the entire length of each tributary.

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REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
Salmon Region (Subprojects I-H, II-H)

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

By

Mike Larkin, Regional Fishery Manager
Tom Curet, Regional Fishery Biologist
Arnie Brimmer, Regional Fishery Biologist
Rebecca M. Andersen, Regional Fishery Technician

2000 ANNUAL PERFORMANCE REPORT

State of:	Idaho	Program:	Fisheries Management F-71-R-25
Project I:	Surveys and Inventories	Subproject:	I-H Salmon Region
Job:	a	Title:	Mountain Lake Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

The Idaho Department of Fish and Game stocked 90 alpine mountain lakes in the Salmon Region via airplane during the summer of 2000. A total of 620 golden trout *Oncorhynchus aguabonita* were stocked in Gooseneck Lake in the Salmon National Forest. In the Sawtooth Wilderness Area, 3,275 golden trout were stocked in one lake, 4,525 sterile triploid Hayspur rainbow trout *O. mykiss* were stocked in seven lakes, and 13,250 westslope cutthroat trout *O. clarki lewisi* were stocked in 31 lakes. In the Sawtooth National Forest, 950 westslope cutthroat trout were stocked in four lakes. In the Challis National Forest, 13,300 westslope cutthroat trout were stocked in 37 alpine lakes, and 5,825 Hayspur rainbow trout were stocked in nine alpine lakes.

On October 8 and 9, 2000, we gill netted and removed stunted brook trout *Salvelinus fontinalis* from Carlson Lake in an effort to increase the mean size of the population. We removed 665 brook trout during 296.7 diel net hours. Since 1997, 4,093 brook trout have been removed. Average total length of brook trout has not increased appreciably since project implementation. However, there has been a slight visual improvement in condition factor of the fish.

Project personnel, assisted on occasion by volunteers of Idaho Department of Fish and Game, Bureau of Land Management, and U.S. Forest Service personnel, surveyed a total of 173 mountain lakes in the Salmon, Challis, and Sawtooth National Forests during July, August, September, and October of 2000. We assessed fishery status via gillnetting and/or angling. We also assessed lake use, natural recruitment potential, and past stocking efforts. Eighty percent of the public use areas we surveyed were in good condition. We determined that fish stocking should be discontinued at 6% of the lakes surveyed due to a lack of appropriate habitat or because naturally reproducing fish populations were present. However, 29% of the lakes we surveyed showed no potential for natural recruitment or showed heavy angling use and should remain on the stocking list. Forty-seven percent of the lakes surveyed were fishless and should remain fishless to provide refugia for amphibians. Seventeen percent of the lakes we surveyed had naturally reproducing fish populations.

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fisheries Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-H Salmon Region
Job: b		Title:	Lowland Lake Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

We used gill nets to survey the fish communities in Mosquito Flats Reservoir on August 16, 2000. Rainbow trout *Oncorhynchus mykiss* comprised 88% of the catch, followed by brook trout *Salvelinus fontinalis* (8%), bull trout *S. confluentus* (3%), and westslope cutthroat trout *O. clarki lewisi* (1%).

The zooplankton community in Mosquito Flats Reservoir was sampled on August 16, 2000 to determine the status of zooplankton resources for fish forage. ZPR and ZQI estimates for the reservoir were 0.06 and 0.01, respectively. These data suggest the forage resources for the reservoir are limiting and stocking should be adjusted accordingly.

On October 23, 2000, fish communities in Williams Lake were surveyed with the use of gill nets. Rainbow trout and bull trout were the only species captured from the lake, with rainbow trout comprising 91% of the catch (10 of 11).

On June 20 and 21 and August 21, 2000 project personnel used hydro-acoustic equipment to map the contours of Williams Lake and to derive fish population estimates. During June, we estimated there was a total of 1,800 trout residing in Williams Lake. However, the August survey produced a population estimate of 5,500 fish. The August population estimate was higher than the June estimate due to an influx of small trout (<200 mm).

The Williams Lake zooplankton community was sampled in August to determine the lake's potential in relation to fish yield. We found that zooplankton densities are not limiting fish yield in the lake.

In an effort to control the kokanee *Oncorhynchus nerka* population of Alturas Lake, Idaho, we constructed a weir across Alturas Lake Creek to prevent upstream passage of adult kokanee spawners. We believe our efforts were successful since no kokanee spawners were observed above the weir.

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho		Program:	Fishery Management F-71-R-25
Project I: Surveys and Inventories		Subproject:	I-H: Salmon Region
Job: c		Title:	Rivers and Stream Investigations

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Project personnel conducted rainbow trout *Oncorhynchus mykiss* spawning ground surveys on the upper Lemhi River and Big Springs Creek (tributary to the Lemhi River) to monitor the effects of fishing regulation changes and habitat improvement projects sponsored by the upper Salmon Basin Watershed Project. On April 5, 2001 we counted a total of 283 redds, which was slightly lower than the number we observed in 2000 (306). We believe the decrease in the number of redds counted in 2001 was an artifact of spawning timing and when the survey was conducted rather than a negative change in fish numbers or habitat conditions.

During summer 2000, Idaho Department of Fish and Game and Salmon-Challis Bureau of Land Management personnel sampled 63 tributary streams of the upper Salmon River to determine fish species composition, relative abundance and size distribution. Westslope cutthroat trout *O. clarki lewisi* were found in 63% of the tributary streams we surveyed and had a mean total length of 117 mm. Rainbow/steelhead trout were found in 37% of the tributary streams surveyed and had a mean total length of 118 mm. Bull trout *Salvelinus confluentus* were found in 29% of the streams surveyed and had a mean total length of 141 mm. The following species were found in less than 20% of the surveyed streams: brook trout *S. fontinalis* (mean total length=114 mm), mountain whitefish *Prosopium williamsoni* (mean total length=264 mm), and rainbow/cutthroat hybrid trout (mean total length=116 mm).

Since 1995 Idaho Fish and Game personnel have electrofished and removed 26,063 brook trout from Valley Creek to open habitat for native fishes. To reestablish native fishes, we have stocked 103,517 native bull trout, westslope cutthroat trout and rainbow trout/westslope cutthroat trout hybrids from adjacent watersheds.

Members of the Shoshone Bannock Indian Tribes snorkeled in Valley Creek and found that brook trout densities have declined substantially since we began reduction efforts. However, there has not been a corresponding increase in numbers of native fish. Throughout the drainage native fishes are present in low numbers in areas that previously contained only brook trout. We believe that it will take more time before increases in native fish populations are apparent.

During the summer of 2000, we were directed by the Idaho Attorney General's Office and the National Marine Fisheries Service to monitor the lower Lemhi River to ensure that adequate water conditions existed for chinook salmon *O. tshawytscha* passage and rearing. The lower Lemhi River was surveyed five times for the presence of adult and juvenile chinook salmon over the course of the summer. No adult chinook salmon were observed in the lower Lemhi River during the study. However, 95 chinook salmon redds were observed in the upper Lemhi River

during September, which suggests that adequate passage conditions existed in the lower river during some if not all of the study. Juvenile chinook salmon were observed sporadically in the lower river during the study.

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fishery Management F-71-R-25

Project II: Technical Guidance | Subproject: II-H Salmon Region

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

During 2000, project staff provided technical assistance to all requesting state and federal agencies. We submitted comments to agencies and private entities concerning outfitter/guide permit reissuance proposals, stream habitat through private lands, lake dock expansions, stream alterations, applications for installation of instream structures, bank stabilization, new reservoir storage site investigations, applications for irrigation diversions, applications for hot springs developments, requests for information on annual grant development programs, permits for discharging natural materials into streams, consultations concerning Endangered Species Act (ESA) issues, permits for dam removal, applications for borehole drilling, bridge construction, applications for stream restoration projects, proposals to place fill material into wetlands for irrigation system projects, and water right applications. We also conducted on-site inspections of proposed, on going and completed projects.

Idaho Department of Fish and Game personnel participated in angler informational meetings, school presentations, multi-agency and private landowner collaborative groups, and the 1-800-ASK-FISH program. Of the estimated 45,000 anglers that fish in the Salmon region, approximately 90% live outside the area. Because these anglers are not familiar with our waters, we respond to over 2,500 requests for basic information on fishing opportunities, techniques, regulations and area specifics.

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DEPARTMENT OF FISH AND GAME

Rod Sando, Director

Federal Aid in Sport Fish Restoration
2000 Annual Performance Report
Program F-71-R-25

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS

PROJECT IV. LAKE REHABILITATION

By

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2000 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fishery Management F-71-R-25

Project IV: Lake Rehabilitation

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

Population management coordination included working on the "Rotenone Use in Fisheries Management, Administrative and Technical Fisheries Manual" through the American Fisheries Society and a Federal Aid Grant. This document was published by the American Fisheries Society in 2000.

Renovation projects included the second year of the Thurmon Creek drainage and Golden Lake project in the Upper Snake Region, Horsethief Reservoir in the Southwest Region and Dingell Swamp with the US Fish and Wildlife Service (FWS) in the Southwest Region. The goal was to enhance Yellowstone cutthroat trout *Oncorhynchus clarki bouvieri* in the Upper Snake Region, remove yellow perch *Perca flavescens* from a trout reservoir in the Southwest Region and to remove common carp *Cyprinus carpio* from ponds on the FWS bird refuge.

During this reporting period, Charles (Chip) Corsi replaced Bill Hutchinson as State Fishery Manager and Fred Partridge replaced William (Bill) Horton as Resident Fishery Coordinator.

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DEPARTMENT OF FISH AND GAME

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REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS

PROJECT V. REGIONAL COORDINATION AND ASSISTANCE

By

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Fred E. Partridge, Resident Fishery Coordinator

2000 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fishery Management F-71-R-25

Project V: Regional Coordination and Assistance

Contract Period: July 1, 2000 to June 30, 2001

ABSTRACT

The State Fishery Manager and the Resident Fishery Coordinator provided program guidance, coordination, and assistance to fisheries management personnel in the Department's seven regions. They also prepared and submitted grants for Federal Aid in Sport Fish Restoration, consulted with and provided reports on listed species to the U.S. Fish and Wildlife Service on Sections 6 and 10 of the Endangered Species Act.

Coordination and assistance was also provided through annual work plan meetings, a three-day Fishery Manager Coordination meeting, Region-Fishery Bureau Coordination meetings, Regional Fishery Biologist Training Meeting, numerous small meetings, and review and publication of Federal Aid reports. Interstate management coordination included meetings with bordering fish and wildlife agencies, other Idaho state agencies, the U.S. Fish and Wildlife Service, and the Columbia Basin Fish and Wildlife Authority-Resident Fish Committee.

The Bureau of Fisheries also coordinated the issuance of 194 permits for fishing tournaments. Mandatory report forms for these tournaments have been filed for future trend analysis. Scientific collecting permits were issued to approximately 191 individuals for the study of aquatic species. Most investigators receiving collecting permits are resource agency biologists; however, university students and professors, utility companies, timber companies, Indian tribes, and consultants also received permits. Reports from these permits are used for fish population information, species distribution data, Endangered Species Act accounting, and general fisheries management information.

During this reporting period, Charles (Chip) Corsi replaced Bill Hutchinson as State Fishery Manager and Fred Partridge replaced William (Bill) Horton as Resident Fishery Coordinator.

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