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1999 Job Performance Report
Program F-71-R-24

REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS
SOUTHWEST REGION (Subprojects I-D, II-D, III-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 III.	HABITAT MANAGEMENT

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1999 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-24

Project I: Surveys and Inventories

Subproject I-D: Southwest Region

Job No.: a

Title: Mountain Lakes Investigations

Contract Period: July 1, 1999 to June 30, 2000

ABSTRACT

No mountain lake sampling was conducted in 1999.

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1999 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-24

Project I: Surveys and Inventories

Subproject I-D: Southwest Region

Job No.: b

Title: Lowland Lakes Investigations

Contract Period: July 1, 1999 to June 30, 2000

ABSTRACT

Two regional waters were sampled with a multiple gear lowland lake sampling strategy, which included use of pairs of experimental gill nets, trap nets, and boat electrofishing. Brownlee and Paddock reservoirs were sampled in this manner.

Beach's Pond, Mountain Home Reservoir, and Indian Creek Reservoir were sampled with electrofishing only.

Blacks Creek and Crane Creek reservoirs were sampled with trap nets only.

Bybee, Little Blue Creek, Shoofly, Payne Creek, Grasmere, and Blackstone reservoirs were sampled with experimental gill nets and trap nets.

Claytonia Pond was renovated with rotenone and restocked with warmwater species.

Zooplankton samples were taken from C.J. Strike, Deadwood, Manns Creek, Sagehen, and Lucky Peak reservoirs.

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METHODS

General Fish Sampling

Electrofishing was conducted from a boom mounted electrofishing boat. Netting of immobilized fish was conducted with one or two netters. Electrofishing was conducted along shorelines. Attempts were made to collect all immobilized fish. One unit of electrofishing effort was defined as one hour of activated electrode time. Unless otherwise noted, electrofishing was conducted at night. Electrofishing catch-per-unit of effort (CPUE) was calculated as catch, by both number and weight, per hour of activated electrode time.

Gillnetting was done using floating and sinking experimental gill nets. Experimental gill nets were 45.7 m long by 1.8 m deep, and were composed of 6-7.6 m panels of 1.9, 2.5, 3.2, 3.8, 5.2, and 6.4 cm bar mesh. Nets were set in late afternoon and pulled the following morning. Nets were set by tying or anchoring one end of the net near or on shore in water less than 0.5 m deep and extending the net perpendicular to shore. When more than one floating or one sinking net was used per water, nets were set to alternate large and small mesh ends of the nets next to shore. One unit of gill net effort was defined as one floating and one sinking experimental gill net fished overnight. Gill net CPUE was calculated as the combined catch of one floating and one sinking experimental net, by both number and weight, per night. (Hereafter, gill net catch refers to combined catch from one floating and one sinking experimental gill net.)

Trapnetting was conducted using standard trap nets composed of two light steel frames measuring 1.8 m x .9 m, covered with 19 mm square black mesh, and with five 76 cm steel round hoops with crow foot throats on the first and third hoops, and with 23 m long lead lines 0.9 to 1.3 m in height. Trap nets were set on shallow sloping areas with the top of the steel frame within 0.3 m of the water surface and the lead lines were tied to shore. Trap nets were set late in the afternoon and pulled the following morning. One unit of trap net effort was defined as one trap net fished overnight. Trap net CPUE was calculated as catch of one trap net, by both number and weight, per night.

General Data Analysis

Data from all sampled waters are summarized in the attached appendices. Appendix A is a summary of all types and amounts of sampling effort for each date that a body of water was investigated. Multi-gear lowland lake sampling events are summarized in Appendix B. The CPUE is calculated by individual gear and then by a standard unit of catch for both number and weight of fish. Appendix C includes a summary of all fish numbers, lengths, weights, condition factors, and percentage of catch by species at any given sampling event. Length frequencies summed by cm group of all captured fish species for all sampled waters are included in Appendix D.

RESULTS

Brownlee Reservoir

Lowland Lake Sample

A lowland lake sample was conducted on June 1, 1999 using 1.5 h of electrofishing, six trap nets, and six pairs of floating and sinking gill nets. Brownlee Reservoir was within 3 m of being full and the water temperature was 16°C at 1300 h. The weather during fish collection efforts was predominantly scattered rain showers with high winds.

All sampling was conducted between Rock Creek and Brownlee Creek. Sampling sites were chosen in the general area of previous fish collections. Netting locations included; near Rock Creek, on the Idaho side in the Morgan Creek area, Swedes Landing, near Sturgill Creek, near the Powder River arm, and in the Brownlee Creek arm. Electrofishing was conducted on the Idaho side near the Powder River arm, the first island near Brownlee Creek on the Oregon side, and the Brownlee Creek arm.

Captured gamefish included smallmouth bass *Micropterus dolomieui*, largemouth bass *M. salmoides*, bluegill *Lepomis macrochirus*, pumpkinseed *L. gibbosus*, black crappie *Pomoxis nigromaculatus*, white crappie *P. annularis*, yellow perch *Perca flavescens*, hatchery rainbow trout *Oncorhynchus mykiss*, wild rainbow trout *O. mykiss gairdneri*, and channel catfish *Ictalurus punctatus*. Non-game species collected included bridgelip sucker *Catostomus columbianus*, largescale sucker *C. macrocheilus*, chiselmouth *Acrocheilus alutaceus*, northern pikeminnow *Ptychocheilus oregonensis*, and common carp *Cyprinus carpio*.

Smallmouth Bass

Smallmouth bass CPUE for electrofishing was 348, down 55% from 1996 (CPUE=773). The mean length of smallmouth bass in 1999 was 180 mm, very similar to 1996 (Allen et al. 1999). In 1996 the relative weight for smallmouth bass in the 300 mm length group was 109. For the same length group in 1999 the relative weight was 83.5. Although sampling was conducted at approximately the same time of year in 1996 and 1999, the differences in CPUE and overall body condition may be a reflection of water temperature, local weather, and differences in spawning status.

White Crappie

A total of 90 white crappie were captured. Eighty-eight percent were collected in gill nets. The gill net CPUE was 13, down from 65 in 1996 and 52 in 1995 (Allen et al. 1999; Allen et al. 1998a). The mean length was 214 mm (SE = 5), very similar to 1996 (212 mm, SE = 13).

Bluegill

Electrofishing CPUE by number was 109, down from 664 in 1996 and up from 17 in 1995. The mean length of bluegill in 1999 was 116 mm, very similar to 1996 (128 mm) and 1995 (118 mm) (Allen et al. 1999; Allen et al. 1998a). We suspect the year classes we observed while electrofishing in 1999 will provide angling opportunities very similar to those in the last several years.

Black Crappie

A total of 117 black crappie were captured and ranged in length from 70-270 mm. The mean length observed from electrofishing was 123 mm, a decrease from 163 mm in 1996 and 177 mm in 1995. The mean condition factor was 1.72, very similar to 1995 (1.74) but a decrease from 2.1 in 1996.

RECOMMENDATIONS

1. Conduct lowland lake survey in 2001.

2. Investigate feasibility of discontinuing hatchery rainbow trout stocking program.

Paddock Reservoir

Lowland Lake Sample

A lowland lake sample was conducted on May 18, 1999 using 0.9 h of electrofishing, four trap nets, and two pairs of floating and sinking gill nets. Paddock Reservoir was full and the water temperature was 13.5°C at 1110 h. The weather during collection efforts was clear with high temperatures of approximately 23°C.

Captured gamefish included largemouth bass, bluegill, pumpkinseed, black crappie, brown bullhead *Ameriurus nebulosus*, and hatchery rainbow trout. No non-game species were collected.

Largemouth Bass

Largemouth bass electrofishing CPUE by number was 652, up from 136 in 1998 and 93 in 1997. The mean length of largemouth bass collected by electrofishing was 206 mm. A majority of the largemouth bass was grouped around one of three size classes, 100 mm, 280 mm, and 370 mm. Twenty-five percent of the largemouth in the electrofishing sample were ≥300 mm, 14% were ≥360 mm. In 1998, 68% of the electrofishing sample was ≥300 mm, only 1.5% were ≥360 mm. We expect good angling opportunities for largemouth bass in Paddock Reservoir in the year 2000.

Bluegill

The total CPUE was 2,790, up considerably from 158 in 1998, 33 in 1997, and 0 in 1996 (Allen et al. in press; Allen et al. 1998b; Allen et al. 1999). Bluegill production in 1999 was excellent, 80% of our bluegill catch from electrofishing was ≤80 mm in length. We could have tripled our electrofishing catch had we collected all the bluegill ≤80 mm in length we observed. A majority of the bluegill ≤80 mm was collected in the southern end of Paddock Reservoir, near the dam. Two 245 mm bluegill were collected while gillnetting and ten were collected while trapnetting ($\bar{x}$ = 149 mm). A total of 5 and 1 bluegill >245 mm were collected in 1996 and 1997,

respectively (Allen et al. 1999; Allen et al. 1998b). Bluegill should provide an excellent forage base for the largemouth bass in Paddock Reservoir.

Black Crappie

A total of 46 black crappie were captured in Paddock Reservoir in 1999. Lengths ranged from 75 mm to 130 mm. No black crappie were captured in 1998, seven were captured in 1997, and one in 1996. It would be premature to try to evaluate the success of stocking 2,500 adult black crappie in 1998, but the current trend is promising.

Hatchery Rainbow Trout

Four hatchery rainbow (excess steelhead smolts) were captured, two in gill nets and two in trap nets. The lengths of the hatchery rainbow ranged from 140 mm to 250 mm. Anglers and Department Officers report much better rainbow trout angling opportunities than our results suggest.

RECOMMENDATIONS

1. Resurvey in 2001 to target the black crappie introduced in 1997.
2. Collect spot creel information in 2000 and 2001.
3. Inform anglers about rainbow trout angling opportunities.

Beach's Pond

Electrofishing

Sampling was conducted during daylight hours on May 6, 1999 utilizing 0.96 h of energized field time. One netter and one boat operator collected the sample. The pond was full and had a surface temperature of 13°C at the time of sampling.

A total of 191 game fish were sampled. Largemouth bass, bluegill, and pumpkinseed were represented in the sample.

Bluegill

Bluegill was the most abundant species collected. A comparison of our 1999 catch with sampling conducted in 1997 indicates bluegill were more abundant and larger in 1999 than in 1997 (Allen et al. 1998b). The mean length of 163 mm was 53 mm larger, CPUE by number increased by 37 %, and the mean weight increased by 188 %.

Largemouth Bass

A total of 57 largemouth were collected. The mean length of our catch was 94 mm larger than the observed mean length in 1997 (Allen et al. 1998b). The CPUE decreased from 135 in 1997 to 35 in 1999.

Pumpkinseed

A total of 35 pumpkinseed were captured. The CPUE by number and mean size was 49 and 147 mm, respectively. Although these fish are providing a very limited fishery directly, they appear to make up a significant portion of the Beach's Pond largemouth bass forage base. After several largemouth bass emptied their stomachs in our livewell, numerous partially digested pumpkinseed were observed.

RECOMMENDATION

1. Monitor fish populations annually for several years because of regulation change.

Indian Creek Reservoir

Electrofishing

Sampling was conducted on May 6, 1999 utilizing 0.5 h of energized field time. One netter and one boat operator collected the sample. The reservoir was full, had a surface temperature of 12°C at 1300 h, and was very turbid (Secchi < 0.5 m).

A total of 91 game fish were sampled. Largemouth bass, bluegill, and brown bullhead were represented in the sample. No nongame fish were collected.

Largemouth Bass

A total of 75 largemouth were collected. There was a very strong year class present with a mean length and condition factor of 281 mm and 1.41, respectively. Although our CPUE of 234 was down from 563 observed in 1997 (Allen et al. 1998b), Indian Creek is producing good catches of legal sized bass (<300 and >400 mm) for anglers. Although no young-of-the-year (YOY) largemouth were collected, a large number of mature fish (280-300 mm) were captured and natural reproduction is expected. Large schools (75-100 fish) of largemouth bass were located in shallow water (approximately 1 m) while electrofishing along the northeast shore. Predation by adult largemouth bass may be limiting recruitment of age 0+ bass in Indian Creek Reservoir.

Bluegill

Only 15 bluegill were collected. The mean length was 163 mm. Bluegill less than 150 mm were present although difficult to find. Numerous very large bluegill were observed, and several 270 mm specimens were collected.

RECOMMENDATIONS

1. Resurvey for forage fish availability in May 2001.

2. Investigate feasibility of using vegetation control measures selectively to provide better angler access.

Mountain Home Reservoir

Electrofishing

Sampling was conducted on May 12, 1999 using 0.76 h of energized field time. One netter and one boat operator collected the sample. The reservoir was approximately 1 m from full. A total of 120 game fish were sampled. Largemouth bass, bluegill, hatchery rainbow, and brown bullhead were represented in the sample. No nongame fish were collected.

Largemouth Bass

Largemouth bass were the most numerous fish species collected. A total of 72 were sampled. The mean length of largemouth bass has increased from 115 mm, measured on May 22, 1996, to 205 mm (Allen et al. 1999).

Bluegill

Bluegill had a mean length of 144 mm, 33 were collected. Very few bluegill were observed.

Rainbow Trout

Fourteen rainbow trout were collected, all had been stocked as catchables. The mean length and CPUE by number were down from 254 mm and 59 in 1996 to 217 mm and 18 in 1999 (Allen et al. 1999). Catchables have been stocked at a rate of 10,000 per year consistently since 1996. Although the stocking of catchables primarily supports the Mountain Home Reservoir trout fishery, some fingerlings are stocked. No carryover fingerlings were collected or observed.

Blacks Creek Reservoir

Two trap nets were set overnight in Blacks Creek Reservoir on May 17, 1999. The reservoir was very turbid at the time of sampling (Secchi < 0.5 m). White crappie was the only species collected. Ninety-seven were captured, with a mean length of 141 mm. The mean length of white crappie collected by electrofishing in 1997 was 106 mm (Allen et al. 1998b).

Crane Creek Reservoir

Trapnetting

Crane Creek Reservoir was sampled with three trap nets on May 20, 1999. The reservoir was full at the time of sampling and had an observed secchi depth of 0.2 m. A total of 375 fish were collected. Black crappie, bluegill, brown bullhead, channel catfish, common carp, and white crappie were represented in the catch. White crappie dominated the total catch by number and weight at 65%. These results were very similar to 1995 and 1998 sampling (Allen et al. 1998a; Allen et al. in press). Several thousand common carp were observed while netting. The large numbers of common carp in Crane Creek Reservoir are likely contributing significantly to high turbidity levels.

White Crappie

A total of 245 white crappie were captured. White crappie represented 65% of our total catch by number, a decrease from 83% observed in 1995 (Allen et al. 1998a). The mean length of white crappie has steadily increased from 170 mm in 1995, to 190 mm in 1998, to 224 mm in 1999. Seven percent of our white crappie catch was 300 mm or larger. Although our sampling indicates a majority of the white crappie in Crane Creek is approaching a harvestable size, anglers report poor success in catching white crappie. The high turbidity we measured may be a leading factor in the lack of angler success.

Brown Bullhead

Brown bullhead represented 15% of the total catch by number and CPUE was 19. In 1995 sampling, percent by number and CPUE were 50% lower (Allen et al. 1998a). Although the mean length of Crane Creek brown bullhead is only 203 mm, anglers report excellent angling success.

Black Crappie

Fifty-two black crappie were collected, none were under 140 mm. The mean size of black crappie has increased from 165 mm in 1995 (Allen et al. 1998a), to 208 mm in 1999.

RECOMMENDATIONS

1. Increase angler awareness of crappie abundance.

2. Renovate Crane Creek Reservoir with rotenone when cost effective.

Riddle Area Reservoirs

Bybee, Little Blue Creek, and Shoofly reservoirs were sampled on May 24, 1999 with one unit of trap net and gill net effort. Payne Creek Reservoir was sampled with 2 h of gillnetting and angling. All reservoirs were full, and water temperatures at the time of sampling

were: 16°C at Shoofly (at 10:00 h), 17°C at Payne Creek, 19.5°C at Bybee (at 14:00 h), and 23°C at Little Blue Creek (at 14:30 h). Angler use of these reservoirs continues to be light despite efforts utilizing the media to promote the fishing opportunities.

Bybee Reservoir

A total of 76 fish were captured. Lahontan cutthroat trout *O. clarki henshawi* and bridgelip sucker were represented in the catch. No Lahontan cutthroat trout were captured with trap nets.

Lahontan cutthroat trout comprised 31.5% of the total catch by number, ranged in length from 180 to 640 mm, and had a mean of 473 mm. Only two Lahontan cutthroat trout less than 340 mm were captured. The CPUE by number for Lahontan cutthroat trout was 23, down from 43 in 1995 (Allen et al. 1998a). The mean condition factor was 1.04, very similar to 1.01 measured in 1995.

Little Blue Creek Reservoir

A total of 132 fish were captured. Unlike the last survey conducted in 1995 the catch was not dominated by Lahontan cutthroat trout.

A total of 42 Lahontan cutthroat trout were captured, ranging in length from 170 to 700 mm. The mean total length and condition factor of Lahontan cutthroat trout was 405 mm and 1.12, respectively. In 1995 the mean total length and condition factor of Lahontan cutthroat trout were slightly lower, 300 mm and 0.95, respectively (Allen et al. 1998a). The CPUE by number of Lahontan cutthroat trout while trapnetting and gillnetting was 2 and 40, very similar to the 1995 survey.

Bridgelip sucker was the only other species collected. Between 1995 and 1999, bridgelip sucker numbers have increased from 12% to 68% of the total catch by number (Allen et al. 1998a). During the same time period, Lahontan cutthroat have decreased from 83% in 1995 to 32% in 1999.

Shoofly Reservoir

Bluegill and Lahontan cutthroat trout were the only species captured. Bluegill represented 52% of the total catch (15/29) by number. In 1995 only one bluegill was captured, and Lahontan cutthroat trout represented 99% of the total catch by number.

Lahontan cutthroat trout ranged in length from 175 to 540 mm, with a mean of 385 mm. The gill net and trap net CPUE by number decreased from 61 and 35 in 1995, to 12 and 2 in 1999 (Allen et al. 1998a). The mean condition factor was 1.0, very similar to 1995. Bluegill ranged in length from 85 to 215 mm, with a mean length of 149 mm.

Payne Creek Reservoir

Lahontan cutthroat trout and bridgelip sucker were the only species collected. Bridgelip sucker dominated the catch with 18, while only four Lahontan cutthroat trout were collected. Two hours of angling resulted in the catch of one fish, a 168 mm Lahontan cutthroat trout. Gill nets captured three Lahontan cutthroat trout, which were 320 mm, 395 mm, and 455 mm in total length.

RECOMMENDATIONS

1. Update Riddle area Reservoirs Brochure.

2. Remind anglers of angling opportunities provided by Riddle area reservoirs when submitting fishing reports to the Department's web page.

3. Resample Riddle area reservoirs in 2002.

Grasmere Reservoir

Grasmere Reservoir was sampled on May 24, 1999 with one unit of trap net and gill net effort. The water surface temperature was 14°C at 1400 h.

A total of 306 fish were captured. Lahontan cutthroat trout, wild rainbow (redband) trout, redside shiner *Richardsonius balteatus*, and bridgelip sucker were collected. Several hundred crayfish were observed feeding on fish captured in the gill nets.

Lahontan cutthroat trout represented 10% of the total catch by number, a significant decrease from 88% measured in 1995 (Allen et al. 1998a). Lahontan cutthroat trout ranged in length from 245 to 445 mm, with a mean of 335 mm. In 1995, the observed length range, mean length, and mean condition factor were very similar. The CPUE by number while trapnetting and gillnetting were 4 and 26, respectively. In 1995 the trap net and gill net CPUE by number for Lahontan cutthroat trout were 24 and 112, respectively. The decrease in Lahontan cutthroat trout catch may be a result of competition with the rapidly expanding bridgelip sucker population. The gill net CPUE by number for bridgelip sucker has increased from 12 in 1995 to 254 in 1999.

Eight wild rainbow (redband) trout were captured while gillnetting. The redband trout ranged from 285 to 355 mm in total length. The mean weight and condition factor was 300 and 1.02, respectively. Historical fish surveys conducted by the Bureau of Land Management (BLM) have documented redband trout in the upper reaches of tributaries to Grasmere Reservoir. Although catchable sized hatchery rainbow trout were stocked in Grasmere Reservoir by the Department until 1986, the rainbow trout we collected likely moved into the reservoir from tributaries during periods of elevated runoff. In 1995, no redband trout were collected.

Blackstone Reservoir

Blackstone Reservoir was sampled in the spring and fall of 1999. On May 24, Blackstone was sampled with one trap net and one pair of gill nets set overnight, and 2 h of angling. On September 9, 1999, Blackstone Reservoir was sampled with one pair of gill nets. The water surface temperature was 16°C in May and September.

Blackstone Reservoir will be managed with a trophy trout rule in 2000. In an attempt to supplement rainbow trout angling opportunities without compromising the resident wild rainbow (redband) trout population, 5,630 sterile hatchery rainbow trout were stocked in Blackstone

Reservoir on June 17, 1999. The mean length of the sterile rainbow trout was 122 mm. Prior to June of 1999, rainbow trout had not been stocked in Blackstone Reservoir since 1972.

May Survey

A total of 87 fish were captured while trapnetting and gillnetting in May. Largemouth bass, bridgelip sucker, brown bullhead, Lahontan cutthroat trout, wild rainbow (redband) trout, and redside shiner were represented in the catch.

The CPUE for redband trout was 17, the highest of all the game fish collected. Redband trout ranged in length from 180 to 475 mm, with a mean of 348 mm. The mean condition factor of redband trout was 1.07 (SE = 0.03). Seven largemouth bass were captured, with lengths ranging from 180 to 270 mm.

September Survey

A total of 175 fish were captured. Largemouth bass, bridgelip sucker, brown bullhead, wild rainbow (redband) trout, hatchery rainbow trout, bluegill, and redside shiner were represented in the catch.

Hatchery rainbow trout dominated the total CPUE by number (60), percent of catch by number (69%), and percent of total catch by weight (52%). The lengths of hatchery rainbow trout ranged from 160 to 250 mm, with a mean length (225 mm) 84% larger than when stocked in June of 1999. The mean condition factor for hatchery rainbow trout was 1.19 (SE = 0.02).

Ten redband trout were captured. Redband trout lengths ranged from 265 to 420 mm, with a mean of 337 mm. The mean condition factor of redband trout was 0.95 (SE = 0.03). Seven largemouth bass were captured, ranging in length from 245 to 305 mm.

RECOMMENDATIONS

1. Conduct netting in 2001 to document sterile hatchery rainbow trout success.

2. Increase angler awareness of opportunities through fishing reports on Department's web page.

Claytonia Pond

Claytonia Pond was successfully renovated with rotenone on March 30, 1999. Two days following treatment, approximately 350 dead common carp were observed floating on the eastern shoreline. Less than 50 dead gamefish were observed. Due to the likelihood of common carp returning to Claytonia Pond through irrigation returns, carp will probably dominate the fishery again in several years. Details of the rotenone project can be found in Appendix E.

RECOMMENDATIONS

1. Investigate feasibility of using floating rotenone bait as a tool to control common carp.

2. Resurvey in spring of 2000 and 2001 to monitor warmwater fish and common carp populations.

3. Improve warmwater fish habitat through the use of stumps and tree tops from local orchards.

Zooplankton Sampling

Zooplankton samples were collected from C.J. Strike, Lucky Peak, Arrowrock, Manns Creek, Sagehen, and Deadwood reservoirs. Samples were taken in August 1999, following methods outlined by Teuscher (1999). The results of the processed samples can be found in Table 1.

RECOMMENDATIONS

1. Collect samples from same waters semi-annually to assist in determining stocking densities and to evaluate relative competition for preferred zooplankton.

2. When samples are processed in the future, allow algae to digest in alcohol for a minimum of three days.

Table 1. Zooplankton tow values in grams per meter sampled, zooplankton ratio (ZPR), and zooplankton quality index (ZQI) for reservoirs sampled in 1999.

Water	Sample Location	Biomass (g/m) 153μ	500μ	750μ	ZPR 750μ / 500μ	ZQI (500μ+750μ)ZPR
C.J. Strike	Snake Arm @ Crane Falls	0.48	0.01	0.01	0	0
	Snake Arm @ Powerline	0.31	0.01	0.01	0	0
	Bruneau Arm	2.51	0.63	0.33	0.53	0.5
	Bruneau Narrows	2.89	0.98	0.51	0.52	0.78
	Near Dam	1.29	0.46	0.24	0.52	0.36
Lucky Peak	Upper	1.2	0.65	0.25	0.39	0.35
	Middle	0.9	0.42	0.28	0.66	0.46
	Dam	0.29	0.12	0.07	0.55	0.11
Arrowrock	Upper	0.45	0.43	0.25	0.59	0.4
	Middle	0.59	0.46	0.36	0.79	0.65
	Dam	1.12	0.87	0.7	0.81	1.27
Mann Creek	Upper	0.34	0.2	0.07	0.33	0.09
	Dam	0.64	0.56	0.19	0.33	0.25
Sagehen	Upper	1.13	1.08	0.44	0.41	0.62
	Dam	0.99	1.14	0.74	0.64	1.2
Deadwood	Upper	0.59	0.5	0.14	0.37	0.25
	Middle	0.74	0.68	0.25	0.37	0.35
	Dam	0.67	0.54	0.26	0.49	0.39

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Appendix A. Units of sampling effort by geartype[1] and body of water, 1999.

WATER #	STREAM_NAM	DATE	GEARTYPE	EFFORT
0500000180	MOUNTAIN HOME RES	5/12/99	EF	0.76
1000000099	BEACH'S POND	5/6/99	EF	0.96
1000000109	INDIAN CREEK RES	5/6/99	EF	0.5
0500000171	BLACKSTONE RES	5/24/99	TN	1
0500000171	BLACKSTONE RES	5/24/99	GN	1
0500000171	BLACKSTONE RES	5/24/99	AN	2
0500000159	SHOOFLY RES	5/24/99	GN	1
0500000159	SHOOFLY RES	5/24/99	TN	1
0500000162	BYBEE RES	5/24/99	GN	1
0500000162	BYBEE RES	5/24/99	TN	1
0500000155	LITTLE BLUE CREEK RES	5/24/99	TN	1
0500000155	LITTLE BLUE CREEK RES	5/24/99	GN	1
0500000173	GRASMERE RES	5/24/99	GN	1
0500000173	GRASMERE RES	5/24/99	TN	1
0500000156	PAYNE CREEK RES	5/24/99	HFGN	2
0500000156	PAYNE CREEK RES	5/24/99	HSGN	2
0500000156	PAYNE CREEK RES	5/24/99	AN	2
0900000101	PADDOCK RES	5/18/99	EF	0.891
0900000101	PADDOCK RES	5/18/99	GN	2
0900000101	PADDOCK RES	5/18/99	TN	4
0500000145	BROWNLEE RES	6/1/99	EF	1.461
0500000145	BROWNLEE RES	6/1/99	GN	6
0500000145	BROWNLEE RES	6/1/99	TN	6
1000000111	BLACKS CREEK RES	5/17/99	TN	2
0800000106	CRANE CREEK RES	5/20/99	TN	3
0500000171	BLACKSTONE RES	9/9/99	GN	2
0500000167	C J STRIKE RES	3/31/00	GN	2
0500000167	C J STRIKE RES	4/4/00	GN	2
0500000167	C J STRIKE RES	4/5/00	GN	2
0500000150	CLAYTONIA P	5/2/00	EF	0.5

[1] Units of effort: AN = h of angling; EF = h of activated electrode time while electrofishing; GN = one floating and sinking gill net set overnight; HSGN = h of sinking gill net sampling; HFGN = h of floating gill net sampling; TN = total number of trap nets set overnight.

Appendix B. Electrofishing, gill net, and trap net catch-per-unit-effort (CPUE) by number and weight for lowland lake sampling, 1999.

WATER	DATE	SPECIES	EF CPUE (Number)	GN CPUE (Number)	TN CPUE (Number)	TOTAL CPUE (Number)	EF CPUE (Weight kg)	GN CPUE (Weight kg)	TN CPUE (Weight kg)	Total CPUE (Weight kg)
BROWNLEE RES										
	6/1/99									
		Black crappie	29	5	8	41	1.02	0.43	0.77	2.23
		Bluegill	110	0	3	113	4.59	0.05	0.16	4.80
		Bridgelip sucker	51	9	2	62	8.33	2.61	0.43	11.36
		Channel catfish	2	33	0	35	1.40	18.69	0.16	20.25
		Chiselmouth	10	6	0	16	0.43	0.79	0.01	1.23
		Common carp	4	2	0	6	24.89	11.55	0.97	37.41
		Hatchery rainbow	1	4			0.32	0.79		
		Largemouth bass	1				0.01			
		Largescale sucker	64	28	1	94	19.34	18.12	0.63	38.10
		Northern pikeminnow	2	4	0	6	0.01	1.25	0.01	1.27
		Pumpkinseed	5	0	0	5	0.20	0.01	0.01	0.22
		Smallmouth bass	348	5			27.79	2.07		
		White crappie	1	13	2	16	0.01	2.10	0.27	2.39
		Wild rainbow/redband	1	0			0.07	0.01		
		Yellow perch	10	1	1	12	0.39	0.09	0.18	0.66
		Total	639	110	18	406	88.81	58.55	3.61	119.91
PADDOCK RES										
	5/18/99									
		Black crappie	31	5	2	38	0.52	0.11	0.03	0.66
		Bluegill	2787	1	3	2790	30.64	0.46	0.32	31.42
		Brown bullhead	7	23	3	32	5.27	16.06	1.52	22.84
		Hatchery rainbow	2	1				0.12		
		Largemouth bass	652	16			173.38	11.63		
		Pumpkinseed	16	1	2	18	0.26		0.17	
		Total	3495	47	9	2879	210.06	28.37	2.05	54.92

Appendix C. Number of fish collected, minimum and maximum length, weight, condition factor, standard errors, catch-per-unit-effort (CPUE), and percent of total by number and weight for fish collected during sampling, 1999.

Water	*Species*	*Total Collected*	*Min Length (mm)*	*Max Length (mm)*	*Mean Length (mm)*	*SE Length*	*Mean Weight (g)*	*SE Weight*	*Mean CondFact*	*SE CondFact*	*CPUE (Number)*	*CPUE (Weight kg)*	*Percent (Number)*	*Percent (Weight)*
BEACH'S POND														
5/6/99														
	Electrofishing													
	Bluegill	99	90	205	163	1	104	4	2.26	0.06	289.58	28.54	51.83	58.09
	Largemouth bass	57	105	445	244	10	297	54	1.34	0.04	59.38	17.17	29.84	34.94
	Pumpkinseed	35	125	165	147	1	70	4	2.16	0.10	48.96	3.43	18.32	6.97
	Total	191									397.92	49.13		
BLACKS CREEK RES														
5/17/99														
	Trap Net													
	White crappie	97	118	221	141	1	36	2	1.14	0.02	48.50	1.64	100.00	100.00
	Total	97									48.50	1.64		
BLACKSTONE RES														
5/24/99														
	Angling													
	Largemouth bass	3	180	270	223	26					1.50		100.00	
	Total	3									1.50			
	Gill Net													
	Bridgelip sucker	4	215	390	299	36	271	27	1.23	0.34	4.00	1.10	7.02	6.12
	Brown bullhead	14	265	345	297	8	416	39	1.53	0.04	14.00	5.88	24.56	32.72
	Lahontan cutthroat	1	375	375	375		485		0.92		1.00	0.48	1.75	2.70
	Largemouth bass	4	210	260	235	10	159	24	1.20	0.06	4.00	0.64	7.02	3.53
	Redside shiner	17	135	155	141	1	40	1	1.43	0.04	17.00	0.68	29.82	3.78
	Wild rainbow/redband	17	180	475	348	25	575	77	1.07	0.03	17.00	9.20	29.82	51.14
	Total	57									57.00	17.98		
	Trap Net													
	Bridgelip sucker	1	290	290	290		320		1.31		1.00	0.30	3.33	2.09
	Brown bullhead	29	265	350	313	5	494	24	1.59	0.02	29.00	14.28	96.67	97.91
	Total	30									30.00	14.59		
9/9/99														
	Gill Net													
	Bluegill	1	270	270	270		210		1.07		0.50	0.11	0.57	0.65
	Bridgelip sucker	24	140	350	267	12	247	27	1.19	0.03	12.00	2.97	13.71	18.45
	Brown bullhead	11	180	320	264	13	300	38	1.50	0.04	5.50	1.65	6.29	10.26
	Hatchery rainbow	121	160	250	225	1	133	5	1.19	0.02	60.50	8.33	69.14	51.81

Appendix C. (continued)

Water	Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
	Largemouth bass	7	245	305	279	9	286	27	1.29	0.03	3.50	1.00	4.00	6.23
	Redside shiner	1	145	145	145		35		1.15		0.50	0.02	0.57	0.11
	Wild rainbow/redband	10	265	420	337	21	402	74	0.95	0.03	5.00	2.01	5.71	12.48
	Total	175									87.50	16.08		
BROWNLEE RES														
6/1/99														
	Electrofishing													
	Black crappie	42	85	185	123	4	40	5	1.72	0.18	28.75	1.02	4.50	1.15
	Bluegill	160	40	215	116	2	50	2	2.31	0.04	109.51	4.59	17.13	5.16
	Bridgelip sucker	74	150	425	235	6	181	15	1.17	0.02	50.65	8.33	7.92	9.37
	Channel catfish	3	220	505	392	87	591	312	0.72	0.09	2.05	1.40	0.32	1.57
	Chiselmouth	15	120	205	163	6	43	7	0.95	0.09	10.27	0.43	1.61	0.49
	Common carp	6	100	830	672	116	7324	2126	1.84	0.11	4.11	24.89	0.64	28.03
	Hatchery rainbow	2	290	310	300	10	240	30	0.88	0.02	1.37	0.32	0.21	0.36
	Largemouth bass	1	120	120	120		15		0.87		0.68	0.01	0.11	0.01
	Largescale sucker	94	120	595	248	12	433	85	1.05	0.02	64.34	19.34	10.06	21.78
	Northern pikeminnow	3	70	135	100	19	20		0.81		2.05	0.01	0.32	0.02
	Pumpkinseed	7	100	178	129	9	39	7	1.76	0.18	4.79	0.20	0.75	0.22
	Smallmouth bass	509	85	360	180	2	149	12	1.18	0.03	348.39	27.79	54.50	31.30
	White crappie	1	115	115	115		17		1.12		0.68	0.01	0.11	0.01
	Wild rainbow/redband	2	145	210	178	33	100		1.08		1.37	0.07	0.21	0.08
	Yellow perch	15	80	220	108	9	85	31	4.27	3.11	10.27	0.39	1.61	0.44
	Total	934									639.29	88.81		
	Gill Net													
	Black crappie	27	110	270	173	9	89	20	1.57	0.06	4.50	0.43	4.09	0.74
	Bluegill	1	225	225	225		300		2.63		0.17	0.05	0.15	0.09
	Bridgelip sucker	55	175	440	293	7	276	20	0.99	0.02	9.17	2.61	8.33	4.46
	Channel catfish	197	150	670	329	11	799	60	0.95	0.01	32.83	18.69	29.85	31.92
	Chiselmouth	36	170	310	227	6	132	12	1.02	0.03	6.00	0.79	5.45	1.35
	Common carp	13	200	835	621	48	5312	1045	1.75	0.08	2.17	11.55	1.97	19.73
	Hatchery rainbow	22	260	360	297	6	213	15	0.80	0.02	3.67	0.79	3.33	1.34
	Largescale sucker	170	170	615	354	8	883	67	1.11	0.01	28.33	18.12	25.76	30.95
	Northern pikeminnow	24	185	440	311	14	331	42	0.97	0.05	4.00	1.25	3.64	2.13
	Pumpkinseed	1	135	135	135						0.17	0.01	0.15	0.01

Water Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Smallmouth bass	30	190	450	306	12	467	52	1.28	0.02	5.00	2.07	4.55	3.53
White crappie	79	120	370	214	5	191	22	1.41	0.02	13.17	2.10	11.97	3.59
Wild rainbow/redband	1	155	155	155		40		1.07		0.17	0.01	0.15	0.01
Yellow perch	4	180	250	225	16	126	34	0.98	0.16	0.67	0.09	0.61	0.15
Total	660									110.00	58.55		
Trap Net													
Black crappie	48	70	265	173	7	98	11	1.98	0.42	8.00	0.77	45.28	21.40
Bluegill	17	90	165	131	6	59	8	2.32	0.08	2.83	0.16	16.04	4.47
Bridgelip sucker	12	150	345	257	22	199	50	1.05	0.02	2.00	0.43	11.32	11.85
Channel catfish	1	470	470	470		710		0.68		0.17	0.16	0.94	4.46
Chiselmouth	1	190	190	190						0.17	0.01	0.94	0.28
Common carp	1	700	700	700		5800		1.69		0.17	0.97	0.94	26.79
Largescale sucker	6	270	510	367	35	425	110	1.09	0.04	1.00	0.63	5.66	17.60
Northern pikeminnow	1	150	150	150		40		1.19		0.17	0.01	0.94	0.18
Pumpkinseed	1	170	170	170		105		2.14		0.17	0.01	0.94	0.40
White crappie	10	120	325	214	18	210	87	1.43	0.05	1.67	0.27	9.43	7.57
Yellow perch	8	200	275	223	8	137	21	1.19	0.03	1.33	0.18	7.55	4.99
Total	106									17.67	3.61		
BYBEE RES													
5/24/99													
Gill Net													
Bridgelip sucker	50	150	330	242	6	186	13	1.21	0.02	50.00	9.20	68.49	25.37
Lahontan cutthroat	23	180	640	473	24	1356	146	1.04	0.02	23.00	27.05	31.51	74.63
Total	73									73.00	36.24		
Trap Net													
Bridgelip sucker	3	140	270	190	40	103	68	1.10	0.07	3.00	0.33	100.00	100.00
Total	3									3.00	0.33		
CRANE CREEK RES													
5/20/99													
Trap Net													
Black crappie	52	110	280	208	4	145	9	1.49	0.03	17.33	2.49	13.76	11.45
Bluegill	1	115	115	115		30		1.97		0.33	0.01	0.26	0.05
Brown bullhead	56	135	225	203	2	129	4	1.63	0.18	18.67	2.34	14.81	10.80
Channel catfish	5	305	510	412	37	678	188	0.84	0.06	1.67	1.13	1.32	5.21

Appendix C. (continued)

Water Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Common carp	19	320	800	568	39	668	145	1.10	0.07	6.33	1.61	5.03	7.43
White crappie	245	150	370	224	2	256	24	1.40	0.02	81.67	14.13	64.81	65.07
Total	378									126.00	21.71		
GRASMERE RES													
5/24/99													
Gill Net													
Bridgelip sucker	254	150	370	219	3	109	9	0.99	0.01	254.00	26.73	86.69	80.32
Lahontan cutthroat	26	245	415	335	9	314	35	0.83	0.02	26.00	5.95	8.87	17.87
Redside shiner	5	125	140	136	3					5.00		1.71	
Wild rainbow/redband	8	285	355	321	9	300	100	1.02	0.20	8.00	0.60	2.73	1.80
Total	293									293.00	33.28		
Trap Net													
Bridgelip sucker	9	160	265	186	11	89	29	1.13	0.06	9.00	0.65	69.23	29.43
Lahontan cutthroat	4	265	445	361	41	388	136	0.68	0.09	4.00	1.56	30.77	70.57
Total	13									13.00	2.22		
INDIAN CREEK RES													
5/6/99													
Electrofishing													
Bluegill	15	90	270	163	13	163	41	3.06	0.33	290.00	47.17	16.48	37.91
Brown bullhead	1	270	270	270		380		1.93		2.00	0.76	1.10	0.61
Largemouth bass	75	100	370	281	4	327	12	1.41	0.01	234.00	76.50	82.42	61.48
Total	91									526.00	124.44		
LITTLE BLUE CREEK RES													
5/24/99													
Gill Net													
Bridgelip sucker	90	170	300	245	3	167	5	1.14	0.04	90.00	15.05	69.23	34.91
Lahontan cutthroat	40	230	700	405	17	978	163	1.12	0.12	40.00	28.06	30.77	65.09
Total	130									130.00	43.11		
Trap Net													
Lahontan cutthroat	2	610	610	610	0	2300	0	1.01	0.00	2.00	4.60	100.00	100.00
Total	2									2.00	4.60		
MOUNTAIN HOME RES													
5/12/99													
Electrofishing													

Water Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
Bluegill	33	40	225	144	7	89	10	2.12	0.07	43.42	3.41	27.50	20.35
Brown bullhead	1	180	180	180		75		1.29		1.32	0.10	0.83	0.59
Hatchery rainbow	14	180	255	217	6	105	12	1.03	0.03	18.42	0.89	11.67	5.31
Largemouth bass	72	95	300	205	7	133	10	1.25	0.02	94.74	12.34	60.00	73.75
Total	120									157.89	16.73		
PADDOCK RES													
5/18/99													
Electrofishing													
Black crappie	28	75	130	95	3	18	2	1.87	0.11	31.43	0.52	1.11	0.25
Bluegill	1924	30	240	61	1	49	4	2.64	0.11	2786.76	30.64	76.44	14.59
Brown bullhead	6	310	360	337	9	707	46	1.85	0.08	6.73	5.27	0.24	2.51
Hatchery rainbow	2	140	140	140	0					2.24		0.08	
Largemouth bass	543	75	390	206	5	377	17	1.57	0.02	652.08	173.38	21.57	82.54
Pumpkinseed	14	65	140	78	7	25	9	2.85	0.30	15.71	0.26	0.56	0.12
Total	2517									3494.95	210.06		
Gill Net													
Black crappie	10	100	130	110	3	16	1	1.40	0.04	5.00	0.11	10.64	0.37
Bluegill	2	245	245	245	0	500	0	3.40	0.00	1.00	0.46	2.13	1.63
Brown bullhead	46	245	390	319	4	725	30	2.14	0.03	23.00	16.06	48.94	56.59
Hatchery rainbow	2	250	250	250	0	120	0	0.77	0.00	1.00	0.12	2.13	0.42
Largemouth bass	32	270	445	348	8	708	52	1.59	0.02	16.00	11.63	34.04	40.99
Pumpkinseed	2	100	100	100	0					1.00		2.13	
Total	94									47.00	28.37		
Trap Net													
Black crappie	8	90	110	104	3	16	1	1.39	0.08	2.00	0.03	23.53	1.60
Bluegill	10	95	220	149	17	132	46	2.33	0.23	2.50	0.32	29.41	15.87
Brown bullhead	10	260	340	305	11	597	68	2.01	0.04	2.50	1.52	29.41	74.09
Pumpkinseed	6	95	185	155	19	115	33	2.36	0.21	1.50	0.17	17.65	8.45
Total	34									8.50	2.05		
PAYNE CREEK RES													
5/24/99													
Angling													
Lahontan cutthroat	1	168	168	168						0.50		100.00	
Total	1									0.50			
Floating Gill Net set													

Appendix C. (continued)

Water	Species	Total Collected	Min Length (mm)	Max Length (mm)	Mean Length (mm)	SE Length	Mean Weight (g)	SE Weight	Mean CondFact	SE CondFact	CPUE (Number)	CPUE (Weight kg)	Percent (Number)	Percent (Weight)
	Lahontan cutthroat	2	320	455	388	68	630	370	0.93	0.13	1.00	0.63	100.00	100.00
	Total	2									1.00	0.63		
	Sinking Gill Net													
	Bridgelip sucker	18	155	265	205	8	99	10	1.10	0.04	9.00	0.89	94.74	72.90
	Lahontan cutthroat	1	395	395	395		660		1.07		0.50	0.33	5.26	27.10
	Total	19									9.50	1.22		
SHOOFLY RES														
5/24/99														
	Gill Net													
	Lahontan cutthroat	12	175	540	385	39	797	167	1.00	0.07	12.00	9.49	100.00	100.00
	Total	12									12.00	9.49		
	Trap Net													
	Bluegill	15	85	215	149	12	129	12	2.20	0.05	15.00	1.29	88.24	55.72
	Lahontan cutthroat	2	185	470	328	143	475	425	0.83	0.04	2.00	1.02	11.76	44.28
	Total	17									17.00	2.31		

Appendix D. Length frequency for all species captured, all gear types combined by water and date.

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
BEACH'S POND									
	5/6/99								
		Bluegill							
			9		1				
			12		1				
			14		5				128.82
			15		26				107.54
			16		26				114.09
			17		25				101.10
			18		13				92.36
			19		1				
			20		1				91.94
		Largemouth bass							
			10		1				73.86
			11		2				114.72
			13		1				
			14		1				118.70
			20		4				101.65
			21		7				104.01
			22		14				93.34
			23		5				87.28
			24		11				90.68
			25		1				92.81
			30		1				77.82
			32		1				76.01
			35		1				88.84
			36		1				114.56
			40		2				128.22
			41		1				131.68
			42		1				106.42
			43		1				127.52
			44		1				114.30
		Pumpkinseed							
			12		1				
			13		2				
			14		15				
			15		12				
			16		5				
BLACKS CREEK RES									
	5/17/99								
		White crappie							
			11				1		82.14
			12				8		89.09
			13				43		106.58
			14				33		96.22
			15				6		93.51
			16				3		84.52
			19				2		81.56
			22				1		67.68
BLACKSTONE RES									
	5/24/99								
		Bridgelip sucker							
			21			1			
			29			2	1		
			39			1			
		Brown bullhead							
			26			1	1		

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			27			3	2		
			28			4	4		
			29			2	5		
			30				2		
			31				1		
			32				3		
			33			2	2		
			34			2	5		
			35				4		
		Lahontan cutthroat							
			37			1			
		Largemouth bass							
			18	1					
			21			1			89.03
			22	1					
			23			2			86.21
			26			1			90.09
			27	1					
		Redside shiner							
			13			4			
			14			12			
			15			1			
		Wild rainbow/redband							
			18			1			
			19			2			95.39
			20			1			107.69
			21			1			119.93
			36			1			108.20
			38			1			98.58
			39			2			104.90
			40			1			87.53
			41			4			85.97
			42			1			85.21
			45			1			85.63
			47			1			82.52
BROWNLEE RES									
	6/1/99								
		Black crappie							
			7				1		1955.44
			8		3				262.64
			9		2		1		110.55
			10		5		3		229.62
			11		13	6	4		127.78
			12		9	2	2		122.20
			13				1		123.29
			14		2				136.72
			15			1	1		112.46
			16		3		3		110.85
			17		3	3	5		109.03
			18		2	3	12		106.79
			19			6	5		94.98
			20			2	2		99.01
			22			1	1		101.21
			23			1	3		81.70
			24				1		101.95
			25				1		122.53
			26				2		91.89

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			27			2			99.31
		Bluegill							
			4		2				
			5		4				
			6		3				230.35
			7		5				214.98
			8		12				143.04
			9		18		1		131.92
			10		13		2		127.87
			11		9		3		118.90
			12		23				122.82
			13		34		3		114.88
			14		21		4		113.79
			15		15		1		105.20
			16				3		115.92
			21		1				98.13
			22			1			112.53
		Bridgelip sucker							
			15		4		1		
			16		5		1		
			17		3	1	1		
			18		5		1		
			19		3	3			
			20		5	1			
			21		3				
			22		3	2	1		
			23		5				
			24		6	5			
			25		4	3			
			26		7	2			
			27		5	1			
			28		4	6			
			29		6	4	2		
			30		3	3	1		
			31		1	5	1		
			32		1	1	1		
			33			4			
			34			6	2		
			35			4			
			37			3			
			42		1				
			44			1			
		Channel catfish							
			15			6			121.06
			16			24			132.97
			17			22			113.48
			18			7			98.98
			20			4			109.97
			21			4			113.74
			22		1	9			108.18
			23			7			106.05
			24			8			112.34
			25			2			111.83
			26			1			111.61
			27			3			98.75
			28			2			105.83
			30			1			

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			31			4			92.32
			32			1			95.42
			33			2			99.20
			34			3			102.20
			35			4			82.07
			36			5			91.94
			37			3			101.41
			38			3			92.61
			40			1			81.88
			43			2			95.87
			44			2			81.95
			45		1	3			87.27
			46			6			94.29
			47			5	1		91.86
			48			9			93.69
			49			8			97.39
			50		1	3			88.82
			51			4			91.39
			52			6			102.57
			53			6			98.65
			54			6			95.69
			55			3			87.58
			56			1			69.52
			57			2			104.90
			59			1			107.04
			60			1			98.09
			63			1			117.23
			64			1			100.79
			67			1			120.71
		Chiselmouth							
			12		2				
			14		2				
			15		3				
			17		3	5			
			18		3	2			
			19		1	3	1		
			20		1	1			
			21			4			
			22			3			
			23			1			
			24			5			
			25			3			
			26			3			
			27			3			
			29			2			
			31			1			
		Common carp							
			10		1				
			20			1			
			39			1			
			59			2			
			61			3			
			65			1			
			67			1			
			70				1		
			71		1				

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			72			1			
			76		1				
			78			1			
			80		1				
			81			1			
			82		1				
			83		1	1			
		Hatchery rainbow							
			26			2			73.56
			27			5			75.61
			28			4			66.91
			29		1	1			75.38
			30			4			71.01
			31		1	2			75.55
			33			1			76.44
			35			2			59.04
			36			1			79.98
		Largemouth bass							
			12		1				72.36
		Largescale sucker							
			12		7				
			13		10				
			14		2				
			15		5				
			16		3				
			17		1	1			
			18		6				
			19		1				
			20		3				
			21		5	1			
			22		5				
			23		4	4			
			24		6	4			
			25		1	6			
			26		2	13			
			27		6	12	1		
			28		7	20			
			29		5	13	1		
			30			17			
			31			6			
			32			6			
			33			1			
			34			2			
			35			3			
			36		2	3	2		
			37			2			
			38			3			
			39		1	3			
			40			4	1		
			41			1			
			42		1	3			
			44		1				
			45			1			
			46		1	2			
			47			2			
			48		3	5			
			49			4			

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			50		1	3			
			51		1	5	1		
			52		1	3			
			53			3			
			54			2			
			55		1	1			
			56			3			
			57			3			
			58		1	1			
			59		1	3			
			61			1			
		Pumpkinseed							
			10		1				
			12		4				
			13		1	1			
			17		1		1		
		Smallmouth bass							
			8		1				61.32
			9		2				
			10		10				57.88
			11		8				85.01
			12		8				
			13		16				73.52
			14		16				74.68
			15		44				
			16		79				96.99
			17		103				89.78
			18		72				78.19
			19		46	1			89.56
			20		25	3			87.23
			21		24	2			84.67
			22		14				95.53
			23		8				84.08
			24		6				81.84
			25			1			86.31
			26		2	1			78.58
			27		3	1			99.12
			28		5				86.76
			29		2	1			72.33
			30		2	3			83.54
			31		1	2			88.55
			32			2			84.07
			33		3	5			89.47
			34		6	2			85.42
			35		2	2			84.29
			36		1				85.74
			37			1			96.09
			40			1			93.64
			43			1			108.31
			45			1			80.69
		White crappie							
			11		1				101.44
			12			2	1		116.51
			13			4			
			16			1	1		
			17			2			81.12
			18			3	1		107.28

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			19			6			113.40
			20			14	1		102.18
			21			16	2		107.40
			22			15	2		99.76
			23			6			97.77
			24			1			105.61
			26			1			94.52
			28			2	1		91.85
			31			2			95.34
			32			2	1		103.14
			35			1			105.32
			37			1			102.10
		Wild rainbow/redband							
			14		1				
			15			1			102.43
			21		1				99.95
		Yellow perch							
			8		3				
			9		3				
			10		4				885.50
			11		2				
			12		1				
			13		1				90.34
			18			1			37.90
			20				2		79.87
			21				2		80.05
			22		1		2		85.89
			23			1	1		77.26
			24			1			87.29
			25			1			76.51
			27				1		88.37
BYBEE RES									
	5/24/99								
		Bridgelip sucker							
			14				1		
			15			1			
			16			1	1		
			17			3			
			18			2			
			19			2			
			20			2			
			21			4			
			22			3			
			23			2			
			24			7			
			25			1			
			26			6			
			27			1	1		
			28			7			
			29			4			
			31			2			
			32			1			
			33			1			
		Lahontan cutthroat							
			18			2			
			34			1			
			38			1			

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			42			1			
			44			1			
			45			1			
			47			3			
			50			3			
			51			1			
			52			2			
			53			2			
			55			1			
			57			2			
			62			1			
			64			1			
CRANE CREEK RES									
	5/20/99								
		Black crappie							
			11				1		153.99
			16				1		111.07
			17				4		102.06
			18				8		98.86
			19				8		94.40
			20				6		112.34
			21				6		91.88
			22				3		95.98
			23				3		91.55
			24				7		94.72
			25				2		92.89
			26				2		93.60
			28				1		90.64
		Bluegill							
			11				1		104.20
		Brown bullhead							
			13				1		
			16				1		
			18				2		
			19				12		
			20				18		
			21				15		
			22				7		
		Channel catfish							
			30				1		78.24
			35				1		75.11
			44				1		90.78
			45				1		99.74
			51				1		88.62
		Common carp							
			32				1		
			35				1		
			36				1		
			38				1		
			39				3		
			52				1		
			60				3		
			65				1		
			70				2		
			72				1		
			75				1		
			76				1		

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			80				2		
		White crappie							
			15				2		
			16				1		99.28
			17				8		111.18
			18				7		104.41
			19				11		101.75
			20				29		97.95
			21				71		105.17
			22				62		102.28
			23				17		93.54
			24				4		93.84
			25				2		99.79
			26				7		89.61
			27				2		97.63
			28				4		94.37
			29				3		94.33
			31				3		88.66
			33				1		111.22
			34				5		98.59
			35				4		94.89
			36				1		101.75
			37				1		97.24
GRASMERE RES									
	5/24/99								
		Bridgelip sucker							
			15			4			
			16			16	2		
			17			33	3		
			18			41	1		
			19			25	2		
			20			10			
			21			19			
			22			8			
			23			15			
			24			15			
			25			11			
			26			12	1		
			27			9			
			28			10			
			29			8			
			31			8			
			32			2			
			33			2			
			34			3			
			35			2			
			37			1			
		Lahontan cutthroat							
			24			1			
			25			1			
			26				1		
			28			2			
			29			2			
			30			3			
			32			1	1		
			33			2			
			34			2			

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			35			4			
			36			2			
			37			2			
			39			1			
			40			1			
			41			2	1		
			44				1		
		Redside shiner							
			12			1			
			13			1			
			14			3			
		Wild rainbow/redband							
			28			1			
			29			1			73.54
			30			1			
			32			1			108.42
			33			1			
			34			2			
			35			1			
INDIAN CREEK RES									
	5/6/99								
		Bluegill							
			9		1				391.47
			10		1				234.80
			11		1				40.25
			12		1				150.80
			14		1				126.63
			15		2				122.32
			16		3				133.15
			17		1				133.03
			19		1				151.14
			21		1				130.84
			24		1				124.45
			27		1				114.76
		Brown bullhead							
			27		1				
		Largemouth bass							
			10		1				86.30
			21		2				101.17
			23		1				102.93
			25		7				107.82
			26		7				102.81
			27		5				98.61
			28		16				99.35
			29		17				100.20
			30		11				98.54
			31		5				96.62
			32		2				97.69
			37		1				111.61
LITTLE BLUE CREEK									
	5/24/99								
		Bridgelip sucker							
			17			2			
			18			2			
			19			2			
			20			2			
			21			2			

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			22			6			
			23			10			
			24			10			
			25			26			
			26			12			
			27			6			
			28			4			
			29			4			
			30			2			
		Lahontan cutthroat							
			23			2			
			29			2			
			31			2			
			33			6			
			34			2			
			35			2			
			37			6			
			38			2			
			40			2			
			46			2			
			47			2			
			49			2			
			51			2			
			52			2			
			54			2			
			61				2		
			70			2			
MOUNTAIN HOME RES									
	5/12/99								
		Bluegill							
			4		1				
			5		2				
			9		1				
			10		3				103.31
			12		3				95.44
			13		1				150.34
			14		2				106.11
			15		5				105.56
			16		5				101.62
			17		3				103.61
			18		5				94.51
			20		1				102.15
			22		1				91.90
		Brown bullhead							
			18		1				
		Hatchery rainbow							
			18		1				
			19		1				
			20		5				98.82
			21		1				
			23		2				91.09
			24		3				
			25		1				
		Largemouth bass							
			9		1				
			10		3				110.79
			11		5				106.60

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			12		5				103.18
			13		3				95.92
			14		1				118.01
			17		1				101.35
			18		1				97.01
			19		3				95.68
			20		5				92.33
			21		6				89.15
			22		8				90.64
			23		4				92.85
			24		5				87.35
			25		10				94.78
			26		6				87.35
			27		4				94.91
			30		1				88.20
PADDOCK RES									
	5/18/99								
		Black crappie							
			7		2				221.78
			8		12				187.40
			9		2		2		162.70
			10		6	6	2		114.19
			11		2	2	4		113.95
			12		2				138.12
			13		2	2			147.95
		Bluegill							
			3		8				
			4		878				
			5		308				
			6		204				161.24
			7		94				199.61
			8		56				177.73
			9		76		2		177.76
			10		60		2		130.58
			11		108				146.08
			12		52		2		116.26
			13		48				107.70
			14		12				128.89
			15		2				129.08
			18		4				106.13
			20		4		2		135.77
			21		4				143.23
			22		2		2		126.29
			23		2				110.41
			24		2	2			135.06
		Brown bullhead							
			24			2			
			26				2		
			27			2	2		
			29			6			
			30			4			
			31		2	8			
			32			6	2		
			33			6	2		
			34		2	6	2		
			35			2			
			36		2	2			

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
			39			2			
		Hatchery rainbow							
			14		2				
			25			2			69.88
		Largemouth bass							
			7		2				
			8		26				218.36
			9		32				154.68
			10		77				151.27
			11		43				121.33
			12		47				127.12
			13		18				121.37
			14		17				103.03
			15		12				127.84
			16		9				103.79
			17		2				118.72
			18		6				119.10
			19		6				122.51
			20		2				113.62
			21		6				118.70
			22		8				113.38
			23		6				103.49
			24		8				107.04
			25		6				103.64
			26		8				109.89
			27		18	4			108.02
			28		26				109.78
			29		24	2			111.26
			30		12				107.69
			31		8				117.25
			32			4			116.49
			33		4	2			109.97
			34		6	2			113.54
			35		14				113.05
			36		14	6			111.37
			37		44	6			109.93
			38		20	2			114.47
			39		12	2			108.72
			44			2			112.09
		Pumpkinseed							
			6		6				
			7		6				
			9				2		
			10			2			
			14		2				
			18				4		
PAYNE CREEK RES									
	5/24/99								
		Bridgelip sucker							
			15						
			16						
			18						
			20						
			21						
			22						
			23						
			26						

Appendix D. (continued)

Water	DATE	SPECIES	CM Group	Number Caught Angling	Number Caught Electrofishing	Number Caught in Gill Nets	Number Caught in Trap Nets	Total Caught	Relative Weight
		Lahontan cutthroat							
			16	1					
			32						
			39						
			45						
SHOOFLY RES									
	5/24/99								
		Bluegill							
			8				2		
			9				3		
			13				1		122.45
			17				4		102.50
			18				3		96.74
			19				1		102.49
			21				1		89.41
		Lahontan cutthroat							
			17			1			
			18				1		
			20			2			
			23			1			
			45			3			
			46			2			
			47			1	1		
			50			1			
			54			1			

Appendix E. Final report on rotenone renovation of Claytonia Pond.

State of Idaho
Department of Fish and Game
Southwest Region
Nampa, Idaho

MEMORANDUM March 31, 1999

TO: Virgil Moore, Chief, Fisheries Bureau

From: Al Van Vooren, Regional Supervisor

Subject: Final Report on Claytonia Pond Fishery Renovation

Claytonia Pond, approximately 1 mile west and 1.5 miles north of Marsing, was selected for a fishery renovation due to the lack of desirable warmwater gamefish species and the overabundance of carp. All permits and public notices were properly administered by Regional fisheries staff. A short-term activity exemption was approved by the Division of Environmental quality on January 13, 1999. The access areas to the pond were posted in December of 1998 with public information signs asking for public comment. The pond was opened to public salvage on February 26, 1999. The pond was treated with rotenone on March 30, 1999.

The rotenone treatment was successful. The remaining pool was calculated to be 53 acre feet of water and was treated with 52 gallons of 2.5 percent synergized liquid rotenone. The treatment rate was slightly over 3 ppm of active rotenone. The fish species identified as killed were largemouth bass, bluegill, black crappie, channel catfish, pumpkinseed, and carp. Bob Hays, an Agrochemical Specialist from the Idaho Department Agriculture, was on site for the duration of the project. Claytonia Pond will be restocked with warmwater fish in May 1999.

1999 ANNUAL PERFORMANCE REPORT

State of: Idaho | Program: Fisheries Management F-71-R-24

Project I: Surveys and Inventories | Subproject I-D: Southwest Region

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

Contract Period: July 1, 1999 to June 30, 2000

ABSTRACT

The Payette River was surveyed below Black Canyon Reservoir to evaluate angling opportunities and float boat access areas. Angling was conducted between Black Canyon Dam and the Birding Island Access near New Plymouth.

Underwater video equipment was installed in the Kirby Dam fish ladder to document migrating bull trout *Salvelinus confluentus*.

The Weiser River was sampled with electrofishing from Cambridge to the confluence of the Weiser and Snake Rivers.

Sections of W.F. Long Tom Creek were sampled to assess the redband trout *Oncorhynchus mykiss gairdneri* reintroduced in 1996. Stream channel and habitat measurements were also recorded to document relative changes in the riparian area associated with changes in grazing management.

A creel survey was completed on the South Fork Payette River upstream of the Deadwood River. The survey also documented angler use of the newly constructed Lowman Fishing Ponds. A series of management questions were also asked of surveyed anglers. Estimated return rate of stocked hatchery rainbow trout *O. mykiss* in the S. F. Payette River was 24.8% and the estimate return of rainbow trout in the pond was 99%. Angler use of the whole upper S.F. Payette River area was approximately equal to the angler use during a previous survey conducted in 1992. A noticeable shift of angling pressure occurred from the hatchery stocked trout zone on the river to the ponds.

Authors:

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Regional Fishery Biologist

Dale B. Allen
Regional Fishery Manager

PAYETTE RIVER

Methods

The Payette River was surveyed between Black Canyon Dam and the Birding Island Access near New Plymouth to evaluate angling opportunities and boat ramps at public access areas. Angling was conducted between 1100 h and 1600 h from small inflatable boats on August 18, 19, 27, and on October 7, 1999. Three anglers were used on August 18 and 19, two were used on August 27 and October 7. Terminal gear used included small spinners, diving plugs, and surface poppers. Lengths were the only physical measurements taken from captured fish.

Results

A total of 47 km of the Payette River was surveyed. Water temperatures at 1200 h ranged from 20°C in August to 13.5°C in October. A total of 28 fish were captured. Smallmouth bass *Micropterus dolomieui*, largemouth bass *M. salmoides*, mountain whitefish *Prosopium williamsoni*, channel catfish *Ictalurus punctatus*, and northern pikeminnow *Ptychocheilus oregonensis* were represented in the catch. Other species observed included common carp *Cyprinus carpio*, largescale sucker *Catostomus macrocheilus*, and redside shiner *Richardsonius balteatus*.

Smallmouth bass represented 86% of the total catch by number, and ranged in length from 190 to 325 mm. The mean length and catch rate for smallmouth bass was 263 mm (SE=11) and 0.73/h, respectively. The only largemouth bass caught was 187 mm in length. Only one fish was captured in October, a 375 mm channel catfish. The best smallmouth bass habitat was found between Black Canyon Dam and the Highway 52 West Bridge Access. Catch rates in August were likely depressed as a result of afternoon air temperatures which exceeded 40°C.

Fifteen access areas were evaluated, twelve were suitable for inflatables or small hand launched craft only. Three access areas had launching facilities suitable for trailered boats. Specific details of each access area can be found in Table 1.

Recommendation

1. Produce fishing and access brochure in 2000.

KIRBY DAM FISH LADDER

Introduction

In July 1999, the construction of a slot-type fish ladder was completed at Kirby Dam by the Department on the Middle Fork of the Boise River, near the town of Atlanta. Kirby Dam has blocked upstream fish passage for approximately 90 years. In July 1999, an underwater video camera was installed in the ladder in the hopes of documenting the passage of migratory bull trout.

Methods

Video equipment consisted of a black and white video surveillance camera mounted in an underwater housing, and an 8 mm time-lapse video recorder. The camera was installed at the uppermost ladder step and was mounted on the side of the ladder wall to allow the widest field of view to be recorded. Two infrared lights were placed near the camera to allow filming during darkness. The video recorder was placed in an underground vault to protect it from vandalism. The video recorder was programmed to record one frame per second, which allowed one tape to last approximately 4 days. A trickle charger was used to maintain the two 12 volt deep cycle batteries, which powered the lights, camera, and recorder. A resident of Atlanta was hired to change tapes and provide system maintenance as needed.

Tapes were reviewed at the Nampa Regional Office by playing back a tape until a fish was observed, the tape would then be stopped, and the fish identified as to species.

Results

Filming was conducted on 15 videotapes between July 6 and September 20, 1999. A total of 196 fish were recorded using the fish ladder. Species identified included wild rainbow trout *Oncorhynchus mykiss gairdneri*, hatchery rainbow trout *O. mykiss*, and bull trout *Salvelinus confluentus*. Fish mainly used the ladder during low light periods in the early morning and late evening.

A total of 139 rainbow trout were recorded using the ladder, of which 33 were identified as wild, 2 were of hatchery origin, and 104 were only identified as rainbow trout.

A total of 7 bull trout were recorded passing upstream through the ladder between July 20 and August 8, 1999. Eighty-six percent of the bull trout used the ladder between July 20 and July 28, 1999. Specific dates of fish movement can be found in Figure 1. Several bull trout were recorded using the ladder at night.

Of the remaining fish recorded on video, 17 were only identified as salmonids, 6 were possible bull trout, and 27 were of unknown species.

Recommendations

1. Install fish trap at uppermost step of ladder in July 2000; implant adult migratory bull trout with radios to identify spawning areas. Using telemetry information, establish bull trout redd count trend areas.

2. Establish long-term bull trout monitoring sites above Kirby Dam.

WEISER RIVER ELECTROFISHING

Introduction

The Weiser River was surveyed with electrofishing between the town of Cambridge and its mouth near Weiser to evaluate angling opportunities. Electrofishing was conducted from two boom-mounted drift boats. Each boat contained one rower and one netter. Electrofishing was conducted along the shorelines during daylight hours. Attempts were made to collect all immobilized fish.

Results and Discussion

A total of 40 km of the Weiser River was surveyed. Two electrofishing boats were used June 28-30 on the reach between Cambridge and the Galloway Dam, and one boat on July 1, 1999 from the Galloway Dam to the confluence of the Weiser and Snake rivers. The water surface temperature ranged from 14°C at 1300 h near Midvale, to 19°C at 1400 h at the Galloway Dam.

A total of 1,306 fish were captured. Smallmouth bass, wild rainbow trout, hatchery rainbow trout, channel catfish, mountain whitefish, northern pikeminnow, largescale sucker, bridgelip sucker *C. columbianus*, mountain sucker *C. platyrhynchus*, speckled dace *Rhinichthys osculus*, longnose dace *R. cataractae*, sculpin *Cottus* spp., chiselmouth *Acrocheilus alutaceus*, common carp, and redside shiner were represented in the catch. Summary tables of fish data can be found in Appendix A.

Nongame fish dominated the catch in all areas. Two reaches contained a majority of the captured gamefish, the canyon between Midvale and the Galloway Dam, and near the mouth of Manns Creek. The dominant gamefish collected in each area was smallmouth bass. The best fish habitat was found in the canyon reach between Cambridge and Galloway Dam. Angler opportunities appear very limited in all surveyed areas.

Recommendation

1. Low densities of gamefish do not warrant promotion of area. Do not proceed with plans to publish brochure of Weiser River angling opportunities.

W. F. LONG TOM CREEK

Introduction

In 1996 the Department in cooperation with Elmore County Landowners Jim and Steve Percy, the Idaho Soil Conservation Service, E. C. Soil Conservation Dist., the Natural Resources Conservation Service, and Boise Valley Fly Fishers club, constructed a series of grazing pastures along Long Tom and W. F. Long Tom creeks. The objective of the project was to improve riparian conditions to benefit fish by creating cattle exclosure areas, while maintaining economically viable cattle ranching operation on private land. Redband trout had disappeared in this section of the drainage by the mid 1990s. During August 1999 sections of W. F. Long Tom Creek were sampled to assess the redband trout reintroduced in 1996. Stream channel and habitat measurements were also recorded to document relative changes in the riparian area associated with changes in grazing management.

Methods

A backpack electroshocker was used to collect fish on August 17, 1999 in a transect within the exclosure and in a transect just below the exclosure. A two-pass population estimate was calculated for redband trout.

Standard Department habitat measurements were collected including width, depth, and substrate composition. A volunteer from the Boise Valley Fly Fishers collected data from permanent habitat transects established both inside and outside the grazing exclosure. Each transect was marked with rebar rods on both sides of the stream. Width between rebar rods, wetted channel width, depth, habitat type, and substrate composition were measured at each transect in August and compared against similar data from 1996.

An informational field tour sponsored by the E. C. Soil Conservation Dist. stopped at the grazing improvement site during early September 1999 and results on fish population and riparian habitat were presented to the group by regional fishery staff.

Results

Redband trout densities increased from zero in 1996 to 36.6/100 m^2 in the transect below the grazing exclosure. Density of redband trout within the exclosure was 6.9/100 m^2, again increasing from zero trout in 1996. Several year classes of redband trout were collected

(Appendix B). The redband trout that were transplanted from Syrup Creek survived and have established a population.

The riparian vegetation has responded positively to the grazing management changes. Table 2 compares 1996 versus 1999 in the % bank stability, age class of willow plants and greenline vegetative index. The percent composition of sand has dropped approximately 25% from 1996 (Appendix B). The whole project area has responded in a positive manner to changes in cattle management implemented by the landowners.

Recommendations

1. Sample the fish population in 2004.

2. Measure the permanent habitat transects in 2004.

SOUTH FORK PAYETTE RIVER CREEL SURVEY

Introduction

Beginning in 1992, the Department instituted a hatchery-stocking zone and wild trout zones in the South Fork Payette River. The hatchery-stocking zone began at the Deadwood River mouth and ended at Ten-Mile Bridge crossing of the river. Wild trout management zones with a two trout possession limit were below and above the stocking zone. Spot creel checks in the past few years still indicated that there was confusion among anglers on fishing regulations in the area. The Department in 1998 constructed two small ponds near the Ten-Mile Bridge above Lowman for the express purpose of creating a local pond for put-and-take trout management. The 1996-2000 5-Year Fisheries Management Plan for this area stated that stocking of the South Fork Payette River would be discontinued if catch-out ponds were built (Pitman, et al. 1996). A survey of angler use and opinions was conducted during 1999 to gather information on the status of this fishery.

Methods

The creel survey was designed similar to a study in 1992 (Elle 1993) so that comparisons of catch and effort could be accomplished. Angler counts and interviews were conducted by either Department Reservists or staff from Lowman Ranger District, United States Forest Service. All interviewers received training by regional fishery staff on proper survey techniques before the survey commenced. Four angler opinion questions were asked of adult anglers contacted.

The creel study was conducted from June 19 to September 11, 1999. The total study period was divided into three equal length intervals. Interval 1 was from June 19 to July 16, Interval 2 was from July 17 to August 13, and Interval 3 was August 14 to September 11, 1999.

Three randomly selected weekday and weekend count days were selected within each interval. Each day was divided into two equal time intervals. Two angler instantaneous counts were done each day, the first count time was randomly selected, and the second count time was four hours later. Interviewers counted anglers and conducted interviews simultaneously while proceeding up or down river. Angler interviews were also conducted between scheduled angler count times. If anglers had not fished for a minimum of 0.5 h they were not interviewed or included in any catch rate calculations but were included for effort calculations. Raw data was input into Department creel software for calculation of estimates for angling effort, harvest, and catch rate.

The creel survey area was also partitioned as in Elle, 1993. Section 1 began at the Deadwood River mouth upstream to Ten Mile bridge; section 2 continued from Ten Mile bridge to Grandjean turnoff of State Highway 21; section 3 continued from Grandjean turnoff to Grandjean Campground; the Lowman Fishing Ponds was the final survey area. Angler counts and interviews were recorded to appropriate section.

Results

We contacted 327 anglers during the period June 19 to September 11, 1999. Complete creel checks were conducted on 299 anglers who had fished at least 0.5 h. We interviewed 267 people regarding a series of fishery management questions.

The overall estimated fishing pressure (hours expended) was slightly lower in 1999 than estimates calculated in 1992 (Table 3). The difference in overall fishing effort is not statistically significant. An obvious shift in pressure did occur to the new fishing ponds. If the 1999 section 1 fishing effort and the pond fishing effort are added together they are essentially equal to the 1992 section 1 fishing effort (Table 3). Fishing effort declined in sections 2 and 3 in 1999 versus 1992. A slight compounding factor was the length of the creel survey in 1992 being more than a month longer than the 1999 survey. Water year effects also must be noted; 1992 was one of the lowest flow years in history whereas the 1999 survey occurred during an above average water year. The difference in water year delayed the stocking and much of the angling in 1999. Higher water also may have affected fishing effort and catch rates.

The estimated catch rate was lower in all sections in 1999 (Table 4). We believe this is largely due to higher river flow in 1999. Six-thousand more rainbow trout were stocked in 1999 than 1992 (Table 5). All catch rates are within the 0.5 fish/h goal in the 1996-2000 5-Year Fisheries Management Plan. The catch rate documented for the ponds is typical for small ponds managed for catchable trout during their peak use seasons.

The return rate of stocked rainbow trout was lower in 1999 than 1992 (Table 5). The observed rate of 24.8% in 1999 is well below management goal return rate of 40% by number. This return rate was likely influenced by a shift in angler use to the new ponds and probable differences in angler catch rates because of higher river flows in 1999. The pond return rate was calculated at 99% (Table 5). This excellent return rate may be slightly inflated because rainbow trout were stocked in 1999 before the survey commenced. Even with some unaccounted number of rainbow trout in the pond, it is clear that the majority of stocked fish are harvested.

Four management questions were asked during the roving creel survey of 267 individual anglers. Table 6 provides the questions and responses to the options organized by the section anglers were contacted in. A clear trend can be identified that anglers have a preference as to where they choose to fish, i.e. pond anglers prefer ponds and stream fishermen prefer streams. Stream anglers were much less likely to know the fishing regulations than pond anglers when asked to recite the regulation in force where they were currently fishing. When queried about a possible change in management to two trout management, which included cessation of stocking in the South Fork Payette River, river anglers were slightly against the proposal and pond anglers slightly favored the proposal. Overall no clear direction can be concluded from the questions asked. The very poor understanding of the fishing regulations is disturbing after seven years of the same regulation.

Recommendations

1. Discontinue stocking of the South Fork Payette River, because the return rate of stocked trout is lower than desired.

2. Continue to stock the Lowman Fishing Ponds to sustain the documented catch rates.

3. Work with the Lowman Ranger District staff to inform the public about the diversity of angling opportunities in the area.

Table 1. Names and locations of public access areas, boat launching facilities, and angling opportunities on the Payette River between Black Canyon Dam and the mouth of the Payette River near Fruitland, Idaho. Inspections of access areas were completed between August 19 and October 7, 1999.

Access Name	Location	Boat Ramp Condition	Fishing Opportunities	Comments
Plaza Bridge	Take Highway 52 to Black Canyon Highway, follow to Plaza Bridge	Good access for trailered boats, ramp is on southeast side of bridge	Two anglers captured 10 smallmouth bass between the Plaza Bridge and the Main Emmett Bridge in 8/99	Floating and fishing from the Plaza Bridge Access to the main Emmett Bridge took 4 h in August of 1999
Main Emmett Bridge	Bridge located on the northern side of Emmett, access is on northwest side of bridge	Hand launched craft only, ramp is very sandy	Three anglers caught 12 smallmouth bass between main Emmett Bridge and the Letha Bridge in 8/99	Floating and fishing from the Main Emmett Bridge Access to the Letha Bridge took 5.5 h in August of 1999
Enterprise Diversion	Take Cascade Road west out of Emmett, turn right after passing commercial sand operation on south side of road	Hand launched craft only	Smallmouth Bass	Large rock irrigation diversion immediately downstream from access
Emmett	Found at junction of Star Road and Cascade Road, 4.8 km west of Emmett	Steep gravel and sand ramp is suitable for hand launched craft only	Smallmouth bass	Large rock irrigation diversion immediately downstream from access
Letha Bridge	On Highway 52, turn north at milepost 22 and follow signs to the town of Letha, follow West Idaho Road to Payette River.	Access is limited to craft which can be passed over guardrail and carried 40 m	Smallmouth bass	Floating and fishing from the Main Emmett Bridge Access to the Letha Bridge took 5.5 h in August of 1999

Table 1. (continued)

Access Name	Location	Boat Ramp Condition	Fishing Opportunities	Comments
Vickery	At milepost 17 on Highway 52 turn north at IDFG access sign, follow Freemont Road north to Vickery Access sign	Steep gravel and sand ramp is suitable for hand launched craft only	Smallmouth bass	Access to river requires opening two gates which cross private pasture
Faulk Bridge	2.4 km north of Vickery Access on Freemont Road	Ramp is located on southeast corner of bridge, good for launching trailered boats	Smallmouth bass	Two irrigation diversions downstream from put-in, first is a rock structure 0.4 km downstream, second is a large concrete structure 3.2 km upstream from Highway 52 bridge
Highway 52 West Bridge	From Junction of Highway 52 and the Emmett highway (Hamilton Corner) drive north to the Payette River	Access is on northwest corner of bridge, launching in August of 1999 required carrying boats 75 m to river	Smallmouth bass, channel catfish	Floating and fishing from the Letha Bridge to the Highway 52 West Bridge took approximately 5.5 h in August of 1999
Blacks Bridge	Follow Highway 52 west of Highway 52 West Bridge, drive to IDFG access sign, turn south on Blacks Bridge Road and follow to river	Ramp is on southeast corner of bridge, good launch for trailered boats	Smallmouth bass, channel catfish	
Birding Island South	Drive west on Interstate 84, take New Plymouth exit, follow IDFG access signs to Holly Ave., turn right on North 2nd Ave. and follow to dead end, park in lot with locked green gate	Watercraft limited to what can be carried approximately 1 km to river	Smallmouth bass, channel catfish	

Table 1. (continued)

Access Name	Location	Boat Ramp Condition	Fishing Opportunities	Comments
Birding Island West	From Birding Island South Access drive west on Northwest 2nd Ave., turn right on Adams Road, drive 1.6 km north, turn right on dirt road with IDFG access sign and follow to river	No ramp, very steep bank, suitable for hand launched craft only	Smallmouth bass, channel catfish	
Guardrail	Located 1.2 km west of Birding Island West Access on Northwest 4th Avenue	No ramp, very steep bank, hand launched craft only	Smallmouth bass, channel catfish	Floating and fishing from the Highway 52 Bridge to the Guardrail Access took approximately 4.5 h in August of 1999, a very large irrigation diversion exists 185 m upstream from the Highway 95 Bridge in Fruitland
Highway 95 Bridge	Take Fruitland exit off Interstate 84, drive north through Fruitland to Highway 95 Bridge	No ramp, hand launched craft only	Smallmouth bass, channel catfish	Payette River from Highway 95 Bridge to Snake River will be surveyed in the summer of 2000
Payette City Bridge	Drive to the city of Payette, access is west of the Payette City Park	No ramp, hand launched craft only	Smallmouth bass, channel catfish	Payette River from Payette City Bridge Access to Snake River will be surveyed in the summer of 2000
Solterbeck	Travel west across Payette City Bridge on 6th Ave., turn right on Banks Road, travel 0.5 km and turn right at IDFG access sign, follow dirt road to river	No ramp, hand launched craft only	Smallmouth bass, channel catfish	Access requires opening gate and crossing private pasture, Payette River from Solterbeck Access to Snake River will be surveyed in the summer of 2000

Table 2. Comparative analysis of riparian data collected in September 1996 and August 1999 on West Fork Long Tom Creek. Data collected by Monte McClendon of Boise Valley Flyfishers.

BANK STABILITY (%)

	Covered/ Stable	Covered/ Unstable	Uncovered/ Stable	Uncovered/ Unstable
Grazed-96	27.4%	36.6%	0.0%	36.0%
Grazed-99	70.3%	4.5%	4.5%	20.7%
Ungrazed-96	88.0%	5.5%	0.9%	5.6%
Ungrazed-99	83.2%	1.0%	10.8%	5.0%

WILLOW PLANTS - AGE CLASS (# / 100 Feet)
Rooted within 3' of water

	Sprout	Young	Mature	Decadent	Dead	Total
Grazed-96	1.09	1.70	2.55	0.00	0.12	5.47
Grazed-99	3.17	14.04	0.32	0.08	0.08	17.69
Ungrazed-96	0.76	7.57	0.97	0.11	0.11	9.51
Ungrazed-99	0.00	8.75	0.49	0.49	1.34	11.06

GREENLINE VEGETATION

	Carex	Juncus	Grass	Woody	Forbs	Debris	Bare
Grazed-96	36.42%	11.07%	28.41%	4.40%	2.90%	0.00%	16.80%
Grazed-99	14.72%	15.17%	25.87%	8.85%	11.75%	0.00%	23.64%
Ungrazed-96	41.47%	26.42%	24.88%	2.61%	6.52%	0.00%	3.08%
Ungrazed-99	25.06%	11.72%	40.37%	1.04%	5.22%	2.32%	14.27%

WILLOW CANOPY (feet)

Grazed-96	253.8
Grazed-99	184.4
Ungrazed-96	248.6
Ungrazed-99	213.1

Table 3. Estimated fishing effort (hours expended) for the South Fork Payette River in 1999 and 1992 (Elle, 1993) from Deadwood River upstream to Grandjean Campground.

Section	Effort (h) 1999	1992
1	4,042 (±1,381)	9,411 (±1,752)
2	2,575 (±916)	3,483 (±839)
3	1,525 (±730)	3,116 (±757)
Ponds	5,234 (±2043)	
Total	13,376 (±2,730)	16,010 (±2,085)

Table 4. Estimated catch rate* (fish/h) for the South Fork Payette River in 1999 and 1992 (Elle, 1993) from the Deadwood River upstream.

Section	Catch Rate Harvest		Catch Rate Released		Catch Rate Total	
	1999	1992	1999	1992	1999	1992
1	0.88	0.80	0.83	1.42	1.71	2.21
2	0.10	0.25	0.51	1.46	0.60	1.71
3	0.12	0.29	0.74	1.33	0.87	1.62
Ponds	0.86		1.15		2.0	
Mean catch rate	0.49	0.45	0.81	1.40	1.29	1.85

* Catch rates include all fish species.

Table 5. Estimated harvest of hatchery rainbow trout (HRB) from the South Fork Payette River 1999 and 1992 (Elle, 1993).

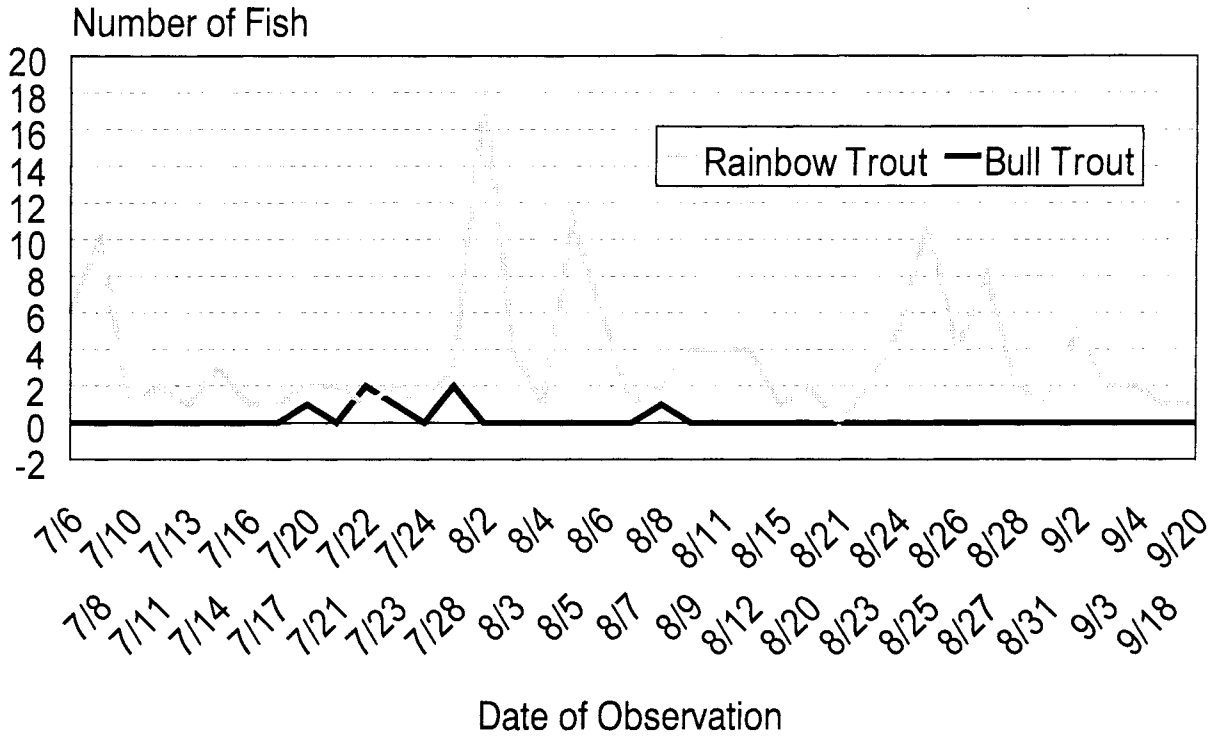
Section	No. Stocked		No. HRB Harvested		% Return of HRB	
	1999	1992	1999	1992	1999	1992
1	12,240	9,496	3,032 (±1,814)	4,884 (±1,388)	24.8	51.4
2	0	0	381 (±351)	50 (±57)		
3	0	0	109 (±143)			
Pond	3,035*		3,005 (±1,574)		99.0	

* Total stocked during creel survey timeframe, previous stockings done in 1999.

Table 6. Management questions asked of anglers during creel survey on the South Fork Payette River in 1999.

Question 1. Do you prefer to fish rivers/streams or lakes/ponds?				
Preference	Zone 1	Zone 2	Zone 3	Zone 4
rivers/streams	74 (86%)	62 (51%)	28 (78%)	21 (69%)
lakes/ponds	6 (7%)	45 (38%)	1 (3%)	0 (0%)
No preference	6 (7%)	15 (12%)	7 (19%)	2 (9%)
Question 1a. If you prefer rivers/streams, would you still fish in ponds if they were as good or better than nearby rivers?				
Preference	Zone 1	Zone 2	Zone 3	Zone 4
Yes, would fish ponds	18 (29%)	40 (71%)	9 (35%)	3 (21%)
No, would not fish ponds	45 (71%)	16 (29%)	17 (65%)	11 (79%)
Question 2. Do you know the regulations in the zone where you are fishing?				
Response	Zone 1	Zone 2	Zone 3	Zone 4
Yes	48 (58%)	105 (85%)	14 (39%)	14 (61%)
No	35 (42%)	18 (15%)	22 (61%)	9 (39%)
Question 3. Did you select where you are fishing today because of release of hatchery rainbow trout?				
Response	Zone 1	Zone 2	Zone 3	Zone 4
Yes	9 (12%)	67 (56%)		
No	38 (51%)	50 (42%)		
Not aware of release	27 (36%)	2 (2%)		
Question 4. What is your opinion regarding standardizing the fishing regulation in the S. Fork Payette River at a 2 fish limit and a change in stocking of hatchery catchables from the river to the Lowman ponds?				
Response	Zone 1	Zone 2	Zone 3	Zone 4
Favor the proposed change	32 (37%)	73 (60%)	16 (43%)	13 (57%)
Oppose the proposed change	48 (56%)	41 (34%)	16 (43%)	8 (35%)
No opinion regarding the proposed change	6 (7%)	8 (6%)	5 (11%)	2 (9%)

Figure 1. Number of rainbow trout and bull trout observed in the Kirby Dam fish ladder between July 6 and September 20, 1999.



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Appendix A. Summary tables from Weiser River electrofishing surveys in June and July 1999.

STREAM: Weiser River SAMPLE DATE: 6/28/99
SECTION: Cambridge
EPA REACH: 17050124020 QUAD MAP:
RTS: R, T, S LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: Begin at Hyw 95 bridge north end of town

Species Sampled

BLS	Bridgelip sucker
CSL	Chiselmouth
HRB	Hatchery rainbow
LSS	Largescale sucker
MNS	Mountain sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SMB	Smallmouth bass
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	5	EF	1
BLS	11	EF	1
BLS	12	EF	2
BLS	13	EF	1
BLS	14	EF	3
BLS	15	EF	2
BLS	16	EF	3
BLS	37	EF	1
BLS	53	EF	1
CSL	10	EF	2
CSL	11	EF	6
CSL	12	EF	6
CSL	13	EF	1
CSL	14	EF	2
CSL	15	EF	3
CSL	16	EF	1
CSL	17	EF	1
CSL	21	EF	1
CSL	24	EF	2
CSL	25	EF	3
CSL	27	EF	2
CSL	31	EF	1
HRB	21	EF	1
LSS	9	EF	1
LSS	11	EF	1
LSS	16	EF	1
LSS	39	EF	1
LSS	40	EF	1
LSS	41	EF	1
LSS	42	EF	3
LSS	43	EF	4
LSS	44	EF	2
LSS	45	EF	10
LSS	46	EF	8
LSS	47	EF	11
LSS	48	EF	6
LSS	49	EF	9
LSS	50	EF	12
LSS	51	EF	9
LSS	52	EF	9
LSS	53	EF	7
LSS	54	EF	7
LSS	55	EF	4
LSS	56	EF	2
LSS	57	EF	3

Appendix A. (continued)

LSS	58	EF	1
LSS	59	EF	1
MNS	8	EF	1
MWF	15	EF	3
MWF	16	EF	1
MWF	17	EF	5
MWF	18	EF	7
MWF	19	EF	6
MWF	20	EF	1
MWF	22	EF	1
MWF	25	EF	1
MWF	27	EF	1
MWF	28	EF	5
MWF	29	EF	5
MWF	30	EF	6
MWF	31	EF	8
MWF	32	EF	2
MWF	33	EF	7
MWF	34	EF	4
MWF	35	EF	4
MWF	36	EF	1
MWF	37	EF	3
MWF	39	EF	2
MWF	41	EF	1
NSF	4	EF	2
NSF	5	EF	2
NSF	6	EF	3
NSF	9	EF	1
NSF	10	EF	1
NSF	11	EF	3
NSF	12	EF	1
NSF	13	EF	2
NSF	15	EF	1
NSF	16	EF	2
NSF	17	EF	3
NSF	18	EF	3
NSF	19	EF	2
NSF	20	EF	1
NSF	21	EF	3
NSF	32	EF	1
NSF	36	EF	1
NSF	38	EF	3
NSF	39	EF	1
NSF	40	EF	3
NSF	41	EF	4
NSF	42	EF	1
NSF	46	EF	1
NSF	47	EF	1
NSF	48	EF	2
NSF	49	EF	1
NSF	52	EF	1
NSF	53	EF	1
RSS	3	EF	5
RSS	4	EF	3
RSS	5	EF	3
RSS	6	EF	1
RSS	7	EF	30
RSS	8	EF	20
RSS	9	EF	23
RSS	10	EF	6
RSS	11	EF	1
RSS	13	EF	1
SMB	10	EF	1
SMB	12	EF	1
SMB	13	EF	1
SMB	14	EF	1

Appendix A. (continued)

WRB	17	EF	1
WRB	18	EF	1
WRB	19	EF	6
WRB	20	EF	4
WRB	21	EF	2
WRB	22	EF	6
WRB	23	EF	2
WRB	24	EF	4
WRB	25	EF	4
WRB	26	EF	4
WRB	28	EF	1
WRB	29	EF	2
WRB	30	EF	1
WRB	33	EF	1
WRB	44	EF	1

Appendix A. (continued)

STREAM:Weiser River SAMPLE DATE:6/29/99
SECTION: Midvale
EPA REACH: 17050124017 QUAD MAP:
RTS: R, T, S LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: Start at main canyon mouth about 3 miles below Midvale

Species Sampled

BLS	Bridgelip sucker
CSL	Chiselmouth
LND	Longnose dace
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SMB	Smallmouth bass
SPD	Speckled dace
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	8	EF	1
BLS	11	EF	1
BLS	14	EF	1
BLS	15	EF	2
CSL	5	EF	1
CSL	7	EF	1
CSL	9	EF	1
CSL	10	EF	1
CSL	11	EF	3
CSL	12	EF	2
CSL	13	EF	1
CSL	19	EF	1
CSL	20	EF	1
CSL	21	EF	1
CSL	24	EF	1
CSL	25	EF	1
CSL	26	EF	2
LND	7	EF	1
LSS	25	EF	1
LSS	35	EF	1
LSS	40	EF	1
LSS	41	EF	3
LSS	42	EF	1
LSS	44	EF	1
LSS	45	EF	3
LSS	46	EF	2
LSS	48	EF	4
LSS	49	EF	3
LSS	50	EF	2
LSS	51	EF	5
LSS	53	EF	1
LSS	54	EF	1
MWF	9	EF	1
MWF	17	EF	2
MWF	20	EF	1
MWF	33	EF	1
MWF	35	EF	1
MWF	37	EF	1
NSF	5	EF	1
NSF	11	EF	1
NSF	19	EF	3
NSF	23	EF	1
NSF	24	EF	2
NSF	25	EF	1

Appendix A. (continued)

NSF	40	EF	1
NSF	41	EF	2
NSF	42	EF	1
NSF	43	EF	2
NSF	44	EF	2
NSF	45	EF	2
NSF	46	EF	1
NSF	47	EF	1
NSF	50	EF	1
RSS	5	EF	4
RSS	6	EF	3
RSS	7	EF	7
RSS	8	EF	12
RSS	9	EF	9
RSS	10	EF	3
SMB	7	EF	1
SMB	10	EF	1
SMB	14	EF	1
SMB	17	EF	1
SMB	21	EF	1
SMB	28	EF	1
SMB	35	EF	1
SPD	4	EF	1
SPD	6	EF	1
WRB	19	EF	1
WRB	21	EF	1
WRB	25	EF	1
WRB	35	EF	1

Appendix A. (continued)

STREAM: Weiser River SAMPLE DATE: 6/29/99
SECTION: Upper Canyon
EPA REACH: 17050124014 QUAD MAP:
RTS: R, T, S LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: Reach below Keithly Cr

Species Sampled

BLS	Bridgelip sucker
CRP	Common carp
CSL	Chiselmouth
LND	Longnose dace
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SCP	Sculpin spp.
SMB	Smallmouth bass
SPD	Speckled dace
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	6	EF	1
BLS	12	EF	2
BLS	13	EF	2
BLS	14	EF	2
BLS	15	EF	1
BLS	16	EF	3
BLS	17	EF	2
BLS	18	EF	1
BLS	20	EF	1
BLS	21	EF	2
BLS	23	EF	2
BLS	27	EF	1
BLS	28	EF	1
BLS	30	EF	1
CRP	42	EF	1
CSL	11	EF	1
CSL	12	EF	3
CSL	14	EF	1
CSL	15	EF	1
CSL	16	EF	2
CSL	17	EF	2
CSL	18	EF	1
CSL	19	EF	1
CSL	20	EF	2
CSL	22	EF	5
CSL	23	EF	3
CSL	24	EF	3
CSL	25	EF	2
CSL	26	EF	2
CSL	27	EF	1
CSL	28	EF	1
LND	5	EF	1
LND	6	EF	2
LND	7	EF	1
LSS	8	EF	1
LSS	14	EF	1
LSS	15	EF	1
LSS	18	EF	1
LSS	19	EF	1
LSS	21	EF	1
LSS	24	EF	1
LSS	25	EF	1

Appendix A. (continued)

LSS	30	EF	1
LSS	32	EF	2
LSS	34	EF	1
LSS	36	EF	1
LSS	37	EF	2
LSS	40	EF	3
LSS	42	EF	2
LSS	43	EF	1
LSS	44	EF	3
LSS	45	EF	2
LSS	46	EF	3
LSS	47	EF	4
LSS	48	EF	2
LSS	49	EF	4
LSS	50	EF	1
LSS	51	EF	1
LSS	52	EF	1
LSS	53	EF	2
LSS	54	EF	2
LSS	55	EF	1
LSS	56	EF	2
LSS	58	EF	1
MWF	15	EF	1
MWF	20	EF	2
MWF	31	EF	1
MWF	33	EF	1
MWF	34	EF	1
MWF	36	EF	3
NSF	10	EF	1
NSF	12	EF	1
NSF	13	EF	4
NSF	14	EF	4
NSF	15	EF	1
NSF	16	EF	4
NSF	17	EF	2
NSF	18	EF	3
NSF	19	EF	6
NSF	20	EF	2
NSF	21	EF	3
NSF	22	EF	1
NSF	26	EF	1
NSF	29	EF	1
NSF	34	EF	1
NSF	40	EF	1
NSF	41	EF	1
NSF	42	EF	2
NSF	44	EF	1
NSF	45	EF	2
NSF	46	EF	1
NSF	47	EF	1
NSF	48	EF	2
NSF	52	EF	1
RSS	9	EF	5
RSS	10	EF	5
SCP	6	EF	2
SCP	7	EF	3
SCP	8	EF	3
SMB	8	EF	1
SMB	9	EF	4
SMB	10	EF	2
SMB	11	EF	3
SMB	12	EF	4
SMB	13	EF	1
SMB	16	EF	1
SMB	17	EF	1
SMB	18	EF	6

Appendix A. (continued)

SMB	19	EF	1
SMB	20	EF	2
SMB	21	EF	6
SMB	22	EF	6
SMB	24	EF	3
SMB	25	EF	1
SMB	26	EF	2
SMB	27	EF	2
SMB	28	EF	1
SMB	29	EF	1
SMB	30	EF	3
SMB	31	EF	1
SMB	35	EF	1
SMB	36	EF	1
SPD	5	EF	1
SPD	6	EF	2
SPD	7	EF	2
SPD	8	EF	2
WRB	13	EF	1
WRB	14	EF	1
WRB	20	EF	1
WRB	21	EF	1
WRB	23	EF	3
WRB	24	EF	1
WRB	26	EF	1
WRB	29	EF	1

Appendix A. (continued)

STREAM: Weiser River SAMPLE DATE: 6/30/99
SECTION: Canyon
EPA REACH: 17050124014 QUAD MAP:
RTS: R, T, S LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: In Canyon to slackwater just above Garrison diversion

Species Sampled

BLS	Bridgelip sucker
CRP	Common carp
CSL	Chiselmouth
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SCP	Sculpin spp.
SMB	Smallmouth bass
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	12	EF	1
BLS	13	EF	2
BLS	14	EF	1
BLS	15	EF	1
BLS	16	EF	1
BLS	18	EF	1
BLS	19	EF	1
BLS	28	EF	1
CRP	41	EF	2
CRP	42	EF	2
CRP	43	EF	1
CRP	44	EF	2
CRP	45	EF	1
CRP	51	EF	1
CSL	11	EF	3
CSL	12	EF	1
CSL	17	EF	1
CSL	20	EF	1
CSL	27	EF	1
LSS	14	EF	2
LSS	17	EF	2
LSS	18	EF	1
LSS	20	EF	1
LSS	25	EF	1
MWF	4	EF	1
MWF	28	EF	1
MWF	35	EF	1
NSF	4	EF	1
NSF	10	EF	1
NSF	11	EF	1
NSF	13	EF	2
NSF	15	EF	1
NSF	19	EF	2
NSF	20	EF	4
NSF	23	EF	1
NSF	24	EF	1
NSF	27	EF	1
NSF	35	EF	1
NSF	36	EF	1
NSF	40	EF	1
NSF	41	EF	1
NSF	51	EF	1
RSS	5	EF	1
RSS	6	EF	3
RSS	7	EF	4
RSS	8	EF	2

Appendix A. (continued)

RSS	9	EF	6
RSS	10	EF	5
RSS	11	EF	1
SCP	8	EF	2
SMB	8	EF	1
SMB	9	EF	5
SMB	10	EF	1
SMB	11	EF	5
SMB	12	EF	1
SMB	13	EF	1
SMB	16	EF	3
SMB	18	EF	7
SMB	19	EF	6
SMB	20	EF	5
SMB	21	EF	8
SMB	22	EF	3
SMB	23	EF	1
SMB	24	EF	4
SMB	25	EF	3
SMB	26	EF	1
SMB	28	EF	1
SMB	29	EF	3
SMB	30	EF	1
SMB	31	EF	1
SMB	32	EF	1
SMB	36	EF	1
SMB	38	EF	1
SMB	39	EF	1
WRB	20	EF	1
WRB	23	EF	1
WRB	24	EF	1
WRB	30	EF	1
WRB	34	EF	1

Appendix A. (continued)

STREAM: Weiser River SAMPLE DATE: 7/1/99
SECTION: Below Galloway
EPA REACH: 17050124003 QUAD MAP:
RTS: R, T, S LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: Put in about 1.5 mile below Garrison

Species Sampled

BLS	Bridgelip sucker
CRP	Common carp
CSL	Chiselmouth
LND	Longnose dace
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
RSS	Redside shiner
SMB	Smallmouth bass
SPD	Speckled dace
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	9	EF	2
BLS	10	EF	3
BLS	11	EF	2
BLS	12	EF	3
BLS	13	EF	1
BLS	14	EF	6
BLS	15	EF	1
BLS	16	EF	4
BLS	17	EF	2
CRP	38	EF	1
CRP	41	EF	1
CRP	42	EF	1
CRP	44	EF	2
CRP	46	EF	1
CRP	48	EF	1
CRP	50	EF	1
CRP	51	EF	1
CRP	55	EF	1
CRP	56	EF	1
CRP	57	EF	1
CRP	60	EF	1
CSL	5	EF	1
CSL	6	EF	6
CSL	7	EF	2
CSL	8	EF	2
CSL	9	EF	2
CSL	10	EF	2
CSL	11	EF	10
CSL	12	EF	11
CSL	13	EF	8
CSL	14	EF	2
CSL	15	EF	3
CSL	16	EF	2
CSL	18	EF	2
CSL	26	EF	1
CSL	27	EF	1
LND	4	EF	1
LND	5	EF	2
LND	6	EF	1
LND	8	EF	1
LSS	16	EF	1
LSS	37	EF	1
LSS	43	EF	1

Appendix A. (continued)

LSS	44	EF	2
LSS	45	EF	1
LSS	46	EF	2
LSS	47	EF	9
LSS	48	EF	4
LSS	49	EF	6
LSS	50	EF	6
LSS	51	EF	3
LSS	52	EF	3
LSS	54	EF	2
MWF	5	EF	1
MWF	6	EF	1
MWF	7	EF	2
MWF	8	EF	4
MWF	9	EF	4
MWF	10	EF	1
MWF	20	EF	1
MWF	21	EF	2
MWF	23	EF	4
MWF	24	EF	6
NSF	7	EF	4
NSF	8	EF	3
NSF	10	EF	4
NSF	11	EF	5
NSF	12	EF	3
NSF	13	EF	3
NSF	14	EF	4
NSF	15	EF	2
NSF	16	EF	1
NSF	17	EF	1
NSF	18	EF	7
NSF	19	EF	3
NSF	20	EF	3
NSF	21	EF	1
NSF	22	EF	1
NSF	24	EF	1
RSS	5	EF	2
RSS	6	EF	1
RSS	7	EF	2
RSS	8	EF	1
RSS	9	EF	3
RSS	10	EF	4
RSS	11	EF	1
SMB	7	EF	4
SMB	8	EF	3
SMB	9	EF	3
SMB	10	EF	4
SMB	11	EF	2
SMB	13	EF	1
SMB	14	EF	4
SMB	15	EF	8
SMB	16	EF	4
SMB	17	EF	3
SMB	18	EF	1
SMB	19	EF	2
SMB	20	EF	1
SMB	21	EF	1
SMB	22	EF	2
SMB	23	EF	1
SMB	25	EF	2
SMB	26	EF	1
SMB	27	EF	1
SMB	28	EF	1
SMB	31	EF	1
SMB	33	EF	1
SMB	37	EF	1

Appendix A. (continued)

SMB	39	EF	1
SMB	45	EF	2
SPD	7	EF	2
WRB	11	EF	1
WRB	21	EF	1

STREAM: Weiser River SAMPLE DATE: 7/1/99
SECTION: Weiser
EPA REACH: 17050124003 QUAD MAP:
RTS: R, T, S LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: Reach above Manns Cr mouth

Species Sampled

BLS	Bridgelip sucker
CAT	Channel catfish
CSL	Chiselmouth
LSS	Largescale sucker
MWF	Mountain whitefish
NSF	Northern pikeminnow
SMB	Smallmouth bass
SPD	Speckled dace

Length Frequency

Species	CM Group	Method	Number Measured
BLS	8	EF	1
BLS	9	EF	1
BLS	10	EF	1
BLS	11	EF	1
BLS	12	EF	1
BLS	13	EF	1
BLS	14	EF	4
BLS	15	EF	4
BLS	16	EF	1
BLS	18	EF	1
BLS	19	EF	1
CAT	54	EF	1
CSL	11	EF	1
CSL	12	EF	3
CSL	13	EF	1
CSL	15	EF	5
CSL	17	EF	2
CSL	19	EF	2
CSL	21	EF	1
CSL	22	EF	1
LSS	21	EF	1
MWF	7	EF	1
MWF	8	EF	5
MWF	9	EF	1
MWF	24	EF	2
NSF	9	EF	1
NSF	18	EF	1
SMB	8	EF	2
SMB	9	EF	2
SMB	10	EF	1
SMB	13	EF	3
SMB	14	EF	1
SMB	15	EF	1
SMB	16	EF	3
SMB	19	EF	1
SMB	21	EF	1
SMB	28	EF	1
SMB	35	EF	1
SMB	39	EF	1
SPD	5	EF	1

Appendix B. Summary tables from W. F. Long Tom Creek electrofishing surveys in August 1999.

STREAM: Long Tom, W. F. SAMPLE DATE: 8/17/99
SECTION: Exclosure
EPA REACH: 17050101056 QUAD MAP:
RTS: R8E, T1S, S24 LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: Inside at upper end of BVVFF exclosure

Transect Information:

Section Length (m):	32		
Elevation (m):	442		
Gradient (%):	0.00%		
Population Est:	4.0	S.E(popest):	0
Shade (%):	0.0		
Mean Width (m):	1.8		
Mean Depth (m):	0.1		
Cover (%):	0		

Habitat Type:

Pool:	25.0	%
Riffle:	25.0	%
Run:	50.0	%
Pocket:	0.0	%

Substrate

Organic:	0	%
Sand:	71	%
Gravel:	29	%
Rubble:	1	%
Boulder:	0	%
Bedrock:	0	%

Species

BLS	Bridgelip sucker
SPD	Speckled dace
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	6	ef	1
BLS	7	ef	6
BLS	8	ef	1
BLS	13	ef	1
BLS	15	ef	1
SPD	4	ef	3
SPD	5	ef	1
SPD	6	ef	2
WRB	5	ef	2
WRB	14	ef	1
WRB	20	ef	1

STREAM: Long Tom, W.F. SAMPLE DATE: 8/17/99
SECTION: Outside Exclosure
EPA REACH: 17050101056 QUAD MAP:
RTS: R8E, T1S, S24 LAT/LONG: 0 0; 0 0
SECTION DESCRIPTION: 100 m below the BVVFF exclosure

Transect Information:

Section Length (m):	41		
Elevation (m):	442		
Gradient (%):	0.00%		
Population Est:	15.0	S.E(popest):	0
Shade (%):	0.0		
Mean Width (m):	1.0		
Mean Depth (m):	0.2		
Cover (%):	0		

Water Chemistry

Habitat Type:

Pool:	20.0	%
Riffle:	20.0	%
Run:	60.0	%
Pocket:	0.0	%

Substrate

Organic:	0	%
Sand:	59	%
Gravel:	41	%
Rubble:	0	%
Boulder:	0	%
Bedrock:	0	%

Species

BLS	Bridgelip sucker
LND	Longnose dace
SPD	Speckled dace
WRB	Wild rainbow/redband

Length Frequency

Species	CM Group	Method	Number Measured
BLS	7	ef	3
BLS	10	ef	1
BLS	11	ef	5
BLS	12	ef	1
BLS	13	ef	3
BLS	14	ef	1
BLS	15	ef	1
LND	5	ef	1
SPD	6	ef	2
SPD	7	ef	1
WRB	4	ef	1
WRB	5	ef	1
WRB	6	ef	2
WRB	7	ef	1
WRB	12	ef	3
WRB	14	ef	1
WRB	15	ef	1
WRB	16	ef	2
WRB	18	ef	1
WRB	20	ef	1
WRB	24	ef	1

1999 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fisheries Management F-71-R-24

Project I: Surveys and Inventories

Subproject I-D: Southwest Region

Job No.: d

Title: Salmon and Steelhead Investigations

Contract Period: July 1, 1999 to June 30, 2000

ABSTRACT

Salmon spawning ground surveys were conducted in Bear Valley, Elk, and Sulphur Creek trend areas on August 23-25, 1999. Salmon redds numbered 33, 10, and 0 in Bear Valley, Elk, and Sulphur Creek trend areas, respectively.

Additional data on Southwest Region salmon and steelhead investigations are incorporated in a separate, statewide Salmon and Steelhead Investigations report.

Author:

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Methods

Redd Counts

Redds were enumerated according to criteria described in the draft Idaho Redd Counting Manual. Carcasses encountered were identified as to sex (F-female, M-male) and measured (fork length) where possible. Live fish observed, when possible, were visually classified as to sex and ocean age (jacks, II, or III, IV).

Results

Redd Counts

Salmon redds were counted in trend areas in Bear Valley, Elk, and Sulphur creeks on August 23-25, 1999. Redds counted, dates of counts, live fish observed, and carcasses encountered by area are reported in Table 1.

Section	Section Code	Date of Count	Number of Redds	Live Fish Observed	Carcasses
Bear Valley Cr. Mine exclosure	Ws-9a	8/23/99	1	1-2oc F 1-1oc unk	None
Bear Valley Cr. Mine exclosure to Cub Cr.	Ws-9b	8/23/99	3	1-2oc F	74cm F
Bear Valley Cr. Cub Cr. To Sack Cr.	Ws-9c	8/23/99	13	1-1oc M 1-2oc M 1-3oc M 2-2oc F 3-3oc F 1-unk	77cm F
Bear Valley Cr. Sack Cr. To Elk Cr.	Ws-9d	8/24/99	5	1-unk M 1-2oc F 1-3oc F 1-3oc Unk	120cm M 92cm F
Bear Valley Cr. Elk Cr. To Poker Bridge	Ws-10a	8/25/99	11	1-3oc M 2-3oc F 1-unk F	None
Bear Valley Cr. Poker Bridge to Fir Cr.	Ws-10b	8/25/99	0	1-3oc M	45cm M
Elk Cr. WF Elk Cr. To Twin Bridge	Ws-11a	8/24/99	8	none	100cm F 78cm M 85cm F
Elk Cr. Twin Bridge to Guard Station	Ws-11b	8/26/99	1	none	None
Elk Cr. Guard Station to Bear Valley Cr.	Ws-11c	8/26/99	1	none	None
Sulphur Cr. Below Ranch	Ws-12	8/24/99	0	none	None
Sulphur Cr. Above Ranch	OS-4	8/24/99	0	none	None

Table 1. Redd counts, number of live salmon observed and carcasses identified in Bear Valley Creek, Elk Creek, and Sulphur Creek from August 23 to August 25, 1999.

1999 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-24

Project II: Technical Guidance Subproject II-D: Southwest Region

Contract Period: July 1, 1999 to June 30, 2000

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. Numerous requests for fish stocking advice and/or rates were received from local Treasure Valley residents.

Regional staff developed and implemented a renovation of the Horseshoe Bend Mill Pond located just north of Horseshoe Bend. The project involved reconstruction of the water intake from the Payette River, reconfiguring the banks for better fishing access, and installing a water pump to move water into the pond for late summer.

Regional fishery personnel participated in the Bull Trout *Salvelinus confluentus* Recovery Unit Team for the Southwest Idaho. We also participated in planning for the reconstruction of Arrowrock Dam with the U.S. Bureau of Reclamation.

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1999 ANNUAL PERFORMANCE REPORT

State of: Idaho Program: Fisheries Management F-71-R-24

Project II: Habitat Management Subproject III-D: Southwest Region

Contract Period: July 1, 1999 to June 30, 2000

ABSTRACT

Habitat measurements were taken on sections of West Fork Long Tom Creek within the area of a stream and riparian pasture grazing complex. Standard Department stream habitat parameters were measured and compared to previous data. Bank stability, counts of willow stems per 100 feet, greenline vegetation, and linear distance of willow canopy were measured. Results are reported in Project I, Job c, of this report.

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