

IDAHO DEPARTMENT OF FISH AND GAME

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FEDERAL AID IN FISH RESTORATION 2002 Job Performance Report Program F-71-R-25



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

PROJECT I.	SURVEYS AND INVENTORIES
Job 7a ¹ .	Salmon Region Mountain Lakes Investigations – Stocking
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Job a ³ .	Lowland Lakes Investigations – Carlson Lake
Job 7b ¹ .	Lowland Lakes Investigations – Herd Lake
Job 7b ² .	Lowland Lakes Investigations – Jimmy Smith Lake
Job 7b ³ .	Lowland Lakes Investigations – Mosquito Flat
Job 7b ⁴ .	Lowland Lakes Investigations – Williams Lake
Job 7c ¹	Salmon Region Rivers and Streams Investigations – Wild Trout Redd Counts and Stream Surveys
Job 7d.	Salmon Region Salmon Technical Assistance

By

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2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-27

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-a¹

Title: Mountain Lake Investigations

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

Mountain Lake Stocking

The Idaho Department of Fish and Game (Department) stocked 60 alpine mountain lakes in the Salmon Region via airplane during the summer of 2002. In the Salmon–Challis National Forest, 400 golden trout *Oncorhynchus mykiss aquabonita* were stocked in one lake, 1,375 arctic grayling *Thymallus arcticus* were stocked in three lakes, 2,750 westslope cutthroat trout *O. clarkii lewisi* were stocked in 11 lakes and 1,325 triploid (3N) Hayspur rainbow trout *O. mykiss* were stocked in six lakes. The Sawtooth National Recreation Area was stocked with a total of 3,150 arctic grayling in five lakes, 325 3N rainbow trout in one lake and 21,200 westslope cutthroat trout in 33 lakes.

Mountain Lake Surveys

Department personnel surveyed a total of 52 mountain lakes in the Sawtooth Wilderness Area and the Salmon-Challis National Forests during June, July, and August of 2002. We assessed fishery status visually and/or by angling. We also assessed lake use, natural recruitment potential, and past stocking efforts. Thirty-one of the 52 (60%) lakes surveyed were previously stocked. Twenty-three of the 31 (74%) stocked lakes had fish. A total of 24 of the 52 (46%) lakes sampled were found to have fish populations, one of which has no record of being stocked. Eight out of the 24 (33%) lakes with fish had naturally reproducing fish populations. We determined that fish stocking should be discontinued in 13 of the 31 (42%) lakes surveyed due to a lack of appropriate habitat or because naturally reproducing fish populations were present. Twenty-eight of the 52 (54%) lakes surveyed were fishless and should remain so to provide refugia for native fauna. Twenty-nine of the 52 lakes surveyed (56%) showed campsite impact rates of low to moderate use.

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OBJECTIVES

Mountain Lake Stocking

Maintain a viable and diverse high mountain lake fishery in the Salmon Region.

Mountain Lake Surveys

To conduct rapid cursory surveys of all stocked and unstocked mountain lakes within the Salmon Region to document the amphibian and fish populations, the spawning potential of the lakes inlets and outlets status of angler/camper use. Information collected during this multi-year effort will be used to develop a high lake management plan for the Salmon Region.

METHODS

Mountain Lake Stocking

We used a Cessna – 185 fixed-wing airplane to stock Salmon Region high mountain lakes during the summer of 2002. All stocking was conducted by McCall Hatchery personnel.

Mountain Lake Surveys

Department personnel conducted cursory surveys of 52 mountain lakes in the Sawtooth Wilderness Area and the Salmon-Challis National Forest (SCNF) during June, July and August 2002. We documented fish communities via angling and/or by visual observation. Fish caught from the lakes were identified, measured (total length) to the nearest millimeter and released. We used hook and line information to estimate fish relative abundance using rating methods developed by Bahls (1992; Table 1). Visual observation was also used to determine fish presence but no relative abundance estimate was determined. These techniques were used separately or in concert to determine stocking success and to consider future stocking adjustments. Presence or absence of amphibians was determined by timed visual encounter survey of the shoreline perimeter.

Each lake was surveyed to document campsite impacts. Lakes were visually surveyed for campsites and signs of human use and notes recorded about the difficulty of access. We used Bahls (1992) campsite impact rating to assess the condition of areas surrounding each lake (Table 2).

All data collected was entered in the Salmon Region alpine lake Microsoft Access database for future analysis. Data sheets are archived in the Region's files.

Table 1. Bahls Trout Relative Abundance (Move table after page 2)

Population Size	Angling catch/hour	Gill net catch/12 hour set
Very low	<0.4	<4
Low	0.4 - 1.0	5-8
Moderate	1.1 - 3.0	9-17
High	3.1 - 6.0	18-30
Very High	>6.0	>31-70

Table 2. Bahls Total Impact Rating for Lakes

None	No campsites found
Low	1 - 4
Moderate	5 - 7
High	> 7

RESULTS AND DISCUSSION

Mountain Lake Stocking

In the Salmon Region (including the SCNF, and the Sawtooth Wilderness Area), a total of 60 alpine mountain lakes were stocked with 30,525 trout. Of these trout stocked in the Salmon Region, 1,650 were triploid Hayspur rainbow trout *Oncorhynchus mykiss*, 4,525 Arctic grayling *Thymallus arcticus*, and 400 were golden trout *O. mykiss aquabonita*. All fish were stocked by McCall Fish Hatchery personnel from September 10 to 14, 2002. Three aircraft flights were used for stocking at a total cost of \$2,047 or \$34.17 per lake.

Table 3 shows the stocking record of 2002, including: lakes stocked, catalog numbers of stocked lakes, trout species stocked, land area locations of lakes stocked within the Salmon Region, and numbers of trout stocked in each lake.

Mountain Lake Surveys

Our results showed that fish occurred in 24 (46%) of the 52 lakes surveyed. In seven lakes catch rates ranged from 0.1 to 3.0 angling catch/hour, which is considered very low to moderate fish abundance. In 17 lakes (33%) catch rates were ≥ 3.1 fish/hour, which was considered to be high to very high fish abundance. Of 52 lakes surveyed, 31 (60%) were previously stocked. We determined that fish stocking should be discontinued in 13 of the 31 (42%) lakes surveyed due to a lack of appropriate habitat or because naturally reproducing fish populations were present. Of the 13, eight of the lakes demonstrated natural reproduction and the remaining five showed poor ecological conditions not conducive to sustaining a fishery. Twenty-eight (54%) of the lakes surveyed were fishless and we recommend they remain so in order to provide refugia for various amphibian species. Results of each survey are listed in tables 4-55.

RECOMMENDATIONS

Continue cursory surveys and perform standard surveys of high mountain lakes to more accurately determine the current status of fish and amphibian populations, human use, and the success of current stocking strategies. Standard mountain lake surveys will be performed on selected keystone lakes based on cursory surveys and historical stocking information to measure the response of fish and amphibian populations due to changes in management techniques. Priority will be on lakes with hatchery stocking of non-natives in drainages with indigenous salmonids.

Table 3. Salmon Region high mountain (alpine) lakes stocked during the summer of 2002.
All fish were stocked by McCall Fish Hatchery personnel.

Lake Name	Catalog Number	Land Area ^a	Species ^b	Number Stocked
Big Frog L #2	7-1385	SNRA	C2	1,000
Cache Cr L #1	7-0843	Salmon-Challis	C2	250
Cache Cr L #3	7-0845	Salmon-Challis	GR	250
Cache Cr L #5	7-0848	Salmon-Challis	GR	375
Castle L	7-1420	SNRA	C2	650
Castle L #1	7-0835	Salmon-Challis	C2	125
Castle View L	7-1440	SNRA	C2	250
Challis Cr L #1	7-1330	Salmon-Challis	C2	950
Challis Cr L #2	7-1333	Salmon-Challis	C2	750
Chamberlain L #7	7-1439	SNRA	C2	500
China L #3	7-0885	Salmon-Challis	GN	400
Cirque L	7-1369	SNRA	C2	1,150
Cove L	7-1364	SNRA	C2	1,100
Crater L	7-1460	SNRA	C2	875
Drift L	7-1424	SNRA	C2	375
East Basin Cr L #3	7-1517	Salmon-Challis	C2	475
Elk L	7-1479	SNRA	C2	675
Feldspar L	7-1380	SNRA	GR	550
Fourth of July L	7-1685	SNRA	C2	725
Garland L #1	7-1468	SNRA	C2	500
Garland L #2	7-1469	SNRA	C2	500
Garland L #3	7-1470	SNRA	C2	350
Gentian L	7-1370	SNRA	T9	325
Goat L	7-1375	SNRA	C2	1,150
Gunsight L	7-1350	SNRA	C2	450
Hindman L #1	7-1495	Salmon-Challis	C2	500
Honey L	7-1433	SNRA	C2	200
HooDoo L	7-1463	SNRA	C2	250
Hope L	7-1430	SNRA	GR	650
Liberty L #1	7-0830	Salmon-Challis	T9	150
Liberty L #2 (South)	7-0833	Salmon-Challis	T9	200
Lightning L	7-1680	SNRA	C2	275
Little Redfish L	7-1347	SNRA	C2	250
MacRae L (Upper Deer)	7-1450	SNRA	GR	600
Martindale L #1	7-0815	Salmon-Challis	GR	250
Martindale L #2	7-0816	Salmon-Challis	C2	200
Mystery L #3	7-0879	SNRA	C2	75
Nelson L #2	7-0873	SNRA	GR	500
Ocalkens L #1	7-1464	SNRA	C2	500
Ocalkens L #2	7-1465	SNRA	C2	750
Phyllis	7-1683	SNRA	C2	375
Pipe L (Blackrock)	7-1732	SNRA	C2	200
Pole L	7-0834	Salmon-Challis	T9	175

Table 3. continued

Lake Name	Catalog Number	Land Area ^a	Species ^b	Number Stocked
Rainbow L	7-1727	SNRA	C2	200
Rock L #1	7-0863	Salmon-Challis	T9	125
Rock L #2	7-0864	Salmon-Challis	T9	550
Sapphire L	7-1367	SNRA	C2	1,250
Sheep L	7-1356	SNRA	C2	500
Six L #1	7-1672	SNRA	C2	475
Slide L	7-1363	SNRA	C2	275
Snow L	7-1374	SNRA	C2	375
Swimm L	7-1467	SNRA	C2	875
Thunder L	7-1679	SNRA	C2	225
Tincup L	7-1349	SNRA	GR	1,350
Twin Cr L #2	7-1319	Salmon-Challis	T9	125
W F Bear Cr L #1	7-1328	Salmon-Challis	C2	200
W F Camas Cr L #1	7-0818	Salmon-Challis	C2	1,200
W F Camas Cr L #3	7-0820	Salmon-Challis	C2	750
W F Camas Cr L #5	7-0824	Salmon-Challis	C2	500
Washington L #2	7-1444	SNRA	C2	750

^a. SCNF = Salmon-Challis National Forest, SNRA = Salmon National Recreation Area

^b. C2 = Westslope cutthroat trout, T9 = triploid Hayspur rainbow trout, R9 = diploid Hayspur rainbow trout
GN = golden trout, GR = Artic grayling

Table 4. Alpine lake survey of Cache Creek Lake #1.

LAKE LOCATION

Lake Name: Cache Creek Lake #1 Survey Date: 8/7/2002
 IDFG Catalog #: 7-0843 Primary Drainage: MFk Salmon River
 Secondary Drainage: Cache Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8563
 Section: Township: Range: Acres: 5
 UTM East: 682885 UTM North: 4960581

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 1 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min): <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	2	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 0.3 # Fish Caught: 2 Fish/Hr: 6
 Fish Abundance: High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>CU</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	0
200-249mm:	0
250-299mm:	2
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

Table 5. Alpine lake survey of Cache Creek Lake #4.

LAKE LOCATION

Lake Name: Cache Creek Lake #4 Survey Date: 8/7/2002
 IDFG Catalog #: 7-0847 Primary Drainage: MFk Salmon River
 Secondary Drainage: Cache Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8543
 Section: Township: Range: Acres: 6
 UTM East: 683421 UTM North: 4961530

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.5</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	8	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: High Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>EBT</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	4
200-249mm:	0
250-299mm:	0
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

Brook trout in MF Salmon River drainage.

Table 6. Alpine lake survey of Cache Creek Lake #4A.

LAKE LOCATION

Lake Name: Cache Creek Lake #4A Survey Date: 8/7/2002
 IDFG Catalog #: 7-0847A Primary Drainage: MFk Salmon River
 Secondary Drainage: Cache Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8704
 Section: Township: Range: Acres: 4
 UTM East: 683485 UTM North: 4960837

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 1
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.5</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	2	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.3 # Fish Caught: 1 Fish/Hr: 3
 Fish Abundance: Moderate Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>EBT</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	0
200-249mm:	1
250-299mm:	0
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

Brook trout exotic in MF Salmon River.

Table 7. Alpine lake survey of Cache Creek Lake #8.

LAKE LOCATION

Lake Name: Cache Creek Lake #8 Survey Date: 8/7/2002
 IDFG Catalog #: 7-0851 Primary Drainage: MFk Salmon River
 Secondary Drainage: Cache Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8402
 Section: Township: Range: Acres: 2
 UTM East: 682677 UTM North: 4962502

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	68	Spotted Frog	60
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 8/07/2002 survey)

Table 8. Alpine lake survey of Cache Creek Lake #8A.

LAKE LOCATION

Lake Name: Cache Creek Lake #8A Survey Date: 8/7/2002
 IDFG Catalog #: 7-0851A Primary Drainage: MFk Salmon River
 Secondary Drainage: Cache Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8400
 Section: Township: Range: Acres: 0.25
 UTM East: 682677 UTM North: 4962502

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.083</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	9	Spotted Frog	6
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 8/07/2002 survey)

Table 9. Alpine lake survey of Cache Creek Lake #9.

LAKE LOCATION

Lake Name: Cache Creek Lake #9 Survey Date: 8/7/2002
 IDFG Catalog #: 7-0853 Primary Drainage: MFk Salmon River
 Secondary Drainage: Cache Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8555
 Section: Township: Range: Acres: 0.7
 UTM East: 682981 UTM North: 4962109

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	27	Spotted Frog	30
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 8/07/2002 survey period)

Table 10. Alpine lake survey of Dairy Lake.

LAKE LOCATION

Lake Name: Dairy Lake Survey Date: 7/23/2002
 IDFG Catalog #: 7-1263 Primary Drainage: Lemhi River
 Secondary Drainage: Dairy Creek
 County: Lemhi
 Land Area: Lemhi USFS Ranger Dist: Leadore
 Elevation (ft): 8514
 Section: Township: Range: Acres: 6.6
 UTM East: 294537 UTM North: 4943761

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: Yes Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Big Eightmile Road

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Western Chorus Frog		0	Western Chorus Frog	0
Spotted Frog		0	Spotted Frog	0
Pacific Chorus Frog		0	Pacific Chorus Frog	0
Tailed Frog		0	Tailed Frog	0
Western Toad		0	Western Toad	0
Long Toed Salamander		0	Long Toed Salamander	0

Search Time (hrs.min) : 0.33

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.5 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: Low Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/23/2002 survey period)

Stocked previously with C2 and BT. Headgate on outlet. Saw one fish jump, but no sign of any other fish. Easy access by 4-wheeler. Lake seems deep enough that there is little to no potential for freeze over.

Table 11. Alpine lake survey of Finger Lake #1.

LAKE LOCATION

Lake Name: Finger Lake #1 Survey Date: 7/11/2002
 IDFG Catalog #: 7-1092 Primary Drainage: MFk Salmon River
 Secondary Drainage: Fall Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7765
 Section: Township: Range: Acres: 4
 UTM East: 646413 UTM North: 4928267

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/11/2002 survey period)

Table 12. Alpine lake survey of Finger Lake #2.

LAKE LOCATION

Lake Name: Finger Lake #2 Survey Date: 7/11/2002
 IDFG Catalog #: 7-1093 Primary Drainage: MFk Salmon River
 Secondary Drainage: Fall Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7785
 Section: Township: Range: Acres: 9
 UTM East: 6466707 UTM North: 4928209

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 0.33 # Fish Caught: 2 Fish/Hr: 6
 Fish Abundance: Moderate Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>RB</u>
0-49mm:	10+
50-99mm:	0
100-149mm:	0
150-199mm:	0
200-249mm:	0
250-299mm:	2
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

Multiple year classes present. Excellent spawning habitat. Fish in good condition.

Table 13. Alpine lake survey of Finger Lake #3.

LAKE LOCATION

Lake Name: Finger Lake #3 Survey Date: 7/11/2002
 IDFG Catalog #: 7-1094 Primary Drainage: MFk Salmon River
 Secondary Drainage: Fall Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8106
 Section: Township: Range: Acres: ?
 UTM East: 647228 UTM North: 4927689

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Western Chorus Frog		0	Western Chorus Frog	0
Spotted Frog		0	Spotted Frog	0
Pacific Chorus Frog		0	Pacific Chorus Frog	0
Tailed Frog		0	Tailed Frog	0
Western Toad		0	Western Toad	0
Long Toed Salamander		0	Long Toed Salamander	0

Search Time (hrs.min) : 0.167

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments: (No fish recorded during 7/11/2002 survey period)

Lake oligotrophic - no organic matter available as a food source.

Table 14. Alpine lake survey of Finger Lake #3A.

LAKE LOCATION

Lake Name: Finger Lake #3A Survey Date: 7/11/2002
 IDFG Catalog #: 7-1094A? (or ...4.01) Primary Drainage: MFk Salmon River
 Secondary Drainage: Fall Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8472
 Section: Township: Range: Acres: 1
 UTM East: 647620 UTM North: 4927600

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	5	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/11/2002 survey period)

Table 15. Alpine lake survey of Grouse Creek Lake.

LAKE LOCATION

Lake Name: Grouse Creek Lake Survey Date: 6/25/2002
 IDFG Catalog #: 7-0840 Primary Drainage: Pahsimeroi River
 Secondary Drainage: Grouse Creek
 County: Custer
 Land Area: Pahsimeroi USFS Ranger Dist: Challis Elevation (ft):
 Section: Township: Range: Acres: 4
 UTM East: 264222 UTM North: 4920517

LAKE USE

Campsites: 3 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc:

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>1</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 6/25/2002 survey period)

Recon with local CO on good water years. Stocking will provide summer fishery but will not over winter. Gammarus prolific in outlet. Leech, caddis, and oarsman present.

Table 16. Alpine lake survey of Island Lake A.

LAKE LOCATION

Lake Name: Island A Survey Date: 7/12/2002
 IDFG Catalog #: 7-1127A Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8109
 Section: Township: Range: Acres: ?
 UTM East: 648010 UTM North: 4926404

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: Yes Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/12/2002 survey period) Inlet - water flow may dry up for a portion of the year.

Table 17. Alpine lake survey of Island Lake B.

LAKE LOCATION

Lake Name: Island B Survey Date: 7/12/2002
 IDFG Catalog #: 7-1127B Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8140
 Section: Township: Range: Acres: 0.4
 UTM East: 647828 UTM North: 4926796

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	1	Western Toad	0
	Long Toed Salamander	4	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0
(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/12/2002 survey period) Lots of tadpoles & amphibians.

Table 18. Alpine lake survey of Island Lake C.

LAKE LOCATION

Lake Name: Island C Survey Date: 7/12/2002
 IDFG Catalog #: 7-1127C Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8296
 Section: Township: Range: Acres: 0.6
 UTM East: 647529 UTM North: 492660

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	1	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/12/2002 survey period)

Table 19. Alpine lake survey of Island Lake.

LAKE LOCATION

Lake Name: Island Lake Survey Date: 7/12/2002
 IDFG Catalog #: 7-1127 Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8041
 Section: Township: Range: Acres: 15
 UTM East: 647680 UTM North: 4926397

LAKE USE

Campsites: 5 Campsite Impact Rating: moderate Trail Around
 Lake: Complete
 Trampled: Yes Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	4	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.25 # Fish Caught: 2 Fish/Hr: 8
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>CU</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	0
200-249mm:	0
250-299mm:	2
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

Lake marked as Island - check Kammeyer's report to confirm that he has lake erroneously marked as Island.

Table 20. Alpine lake survey of Langer Lake #1.

LAKE LOCATION

Lake Name: Langer #1 Survey Date: 7/11/2002
 IDFG Catalog #: 7-1133 Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Yankee Fork
 Elevation (ft): 8028
 Section: Township: Range: Acres: 5
 UTM East: 648404 UTM North: 4926733

LAKE USE

Campsites: 5 Campsite Impact Rating: moderate Trail Around
 Lake: Complete
 Trampled: Yes Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 2 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: Moderate Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/11/2002 survey period)

Few fish seen - little activity.

Table 21. Alpine lake survey of Langer Lake A.

LAKE LOCATION

Lake Name: Langer A Survey Date: 7/11/2002
 IDFG Catalog #: 7-1133A Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Yankee Fork
 Elevation (ft): 8128
 Section: Township: Range: Acres: 0.5
 UTM East: 648071 UTM North: 4926585

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: Yes Access Good (mi): 2
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	1	Western Toad	0
	Long Toed Salamander	3	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/11/2002 survey period) Frog pond looking.

Table 22. Alpine lake survey of Langer Lake B.

LAKE LOCATION

Lake Name: Langer B Survey Date: 7/12/2002
 IDFG Catalog #: 7-1133B Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8192
 Section: Township: Range: Acres: ?
 UTM East: 647828 UTM North: 492796

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	4	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/12/2002 survey period) Tadpoles present.

Table 23. Alpine lake survey of Langer Lake C.

LAKE LOCATION

Lake Name: Langer C Survey Date: 7/12/2002
 IDFG Catalog #: 7-1133C Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8356
 Section: Township: Range: Acres: 0.01(?)
 UTM East: 647681 UTM North: 4927053

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0
(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments: (No fish recorded during 7/12/2002 survey period) Wet meadow and not a pond (non-fish-bearing).

Table 24. Alpine lake survey of Lower Island Lake.

LAKE LOCATION

Lake Name: Lower Island Survey Date: 7/12/2002
 IDFG Catalog #: 7-1129 Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7989
 Section: Township: Range: Acres: 7
 UTM East: 648214 UTM North: 4926029

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	1	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.33 # Fish Caught: 2 Fish/Hr: 6
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>CU</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	0
200-249mm:	1
250-299mm:	1
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

Adequate to borderline excellent for spawning grounds. Multiple age classes represented. Four classes observed via visual observation.

Table 25. Alpine lake survey of Mill Creek Reservoir #1.

LAKE LOCATION

Lake Name: Mill Creek Reservoir #1 Survey Date: 7/23/2002
 IDFG Catalog #: 7-1254 Primary Drainage: Lemhi River
 Secondary Drainage: Mill Creek
 County: Lemhi
 Land Area: Lemhi USFS Ranger Dist: Leadore
 Elevation (ft): 8852
 Section: Township: Range: Acres: 28.07
 UTM East: 289526 UTM North: 4947924

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: Yes Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Mill Creek Road

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.42</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.5 # Fish Caught: 5 Fish/Hr: 10
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>RB</u>	<u>CU</u>
0-49mm:	0	0
50-99mm:	0	0
100-149mm:	2	0
150-199mm:	0	1
200-249mm:	2	0
250-299mm:	0	0
300-349mm:	0	0
350-399mm:	0	0
>399mm:	0	0

Comments:

Original outlet dry. Outlet has wooden structure built @ the mouth. It appears to be some structural device for the outlet bed.
Multiple year classes present. Inlet had fish in it. The other inlet is braided. Current outlet has some kind of headgate on it

Table 26. Alpine lake survey of Pole Lake.

LAKE LOCATION

Lake Name: Pole Lake Survey Date: 8/7/2002
 IDFG Catalog #: 7-0834 Primary Drainage: MFk Salmon River
 Secondary Drainage: County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8009
 Section: Township: Range: Acres: 10
 UTM East: 685366 UTM North: 4959533

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 1 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 0.3 # Fish Caught: 3 Fish/Hr: 10
 Fish Abundance: Very High Fish Observed: Gear:
Angling/Visual
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>RB</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	0
200-249mm:	3
250-299mm:	0
300-349mm:	0
350-399mm:	2
>399mm:	0

Comments:

Very difficult to access. Appears to be two age classes present. Fish in great shape.

Table 27. Alpine lake survey of Quake Lake.

LAKE LOCATION

Lake Name: Quake Lake Survey Date: 6/24/2002
 IDFG Catalog #: 7-1297 Primary Drainage: Pahsimeroi River
 Secondary Drainage: Grouse Creek
 County: Custer
 Land Area: Pahsimeroi USFS Ranger Dist: Challis Elevation (ft):
 Section: Township: Range: Acres: 3
 UTM East: 265961 UTM North: 4919131

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 6
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc:

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>1</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 3 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: Low Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

LENGTH

0-49mm:
 50-99mm:
 100-149mm:
 150-199mm:
 200-249mm:
 250-299mm:
 300-349mm:
 350-399mm:
 >399mm:

Comments:

Armbruster indicated 2 stocking events in mid 1990's. Apparently very successful. Fish very hard to catch. Leave as is - spawning occurring in inlet. Approx. 30 fish in lake; 10-14" size classes.

Table 28. Alpine lake survey of Rock Lake #1.

LAKE LOCATION

Lake Name: Rock Lake #1 Survey Date: 8/6/2002
 IDFG Catalog #: 7-0863 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rock Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8702
 Section: Township: Range: Acres: 2
 UTM East: 684455 UTM North: 4958389

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 1
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.3 # Fish Caught: 3 Fish/Hr: 10
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

<u>LENGTH</u>	<u>CU</u>
0-49mm:	0
50-99mm:	0
100-149mm:	0
150-199mm:	1
200-249mm:	0
250-299mm:	2
300-349mm:	0
350-399mm:	0
>399mm:	0

Comments:

One adult cutthroat was emaciated.

Table 29. Alpine lake survey of Rock Lake #1A.

LAKE LOCATION

Lake Name: Rock L #1A Survey Date: 8/6/2002
 IDFG Catalog #: 70863A Primary Drainage: MFk Salmon River
 Secondary Drainage: Rock Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis Elevation (ft):
 Section: Township: Range: Acres: .3
 UTM East: 684040 UTM North: 4954064

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around Lake:
 Trampled: Access Good (mi): 0 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	3	Western Chorus Frog	2
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>					<u>CU</u>		
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 30. Alpine lake survey of Rock Lake #1B.

LAKE LOCATION

Lake Name: Rock L #1B Survey Date: 8/6/2002
 IDFG Catalog #: 70863B Primary Drainage: MFk Salmon River
 Secondary Drainage: Rock Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis Elevation (ft):
 Section: Township: Range: Acres: .1
 UTM East: 684040 UTM North: 4954064

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around Lake:
 Trampled: Access Good (mi): 0 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	800
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>					<u>CU</u>		
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Large aggregation of western toad tadpoles.

Table 31. Alpine lake survey of Rock Lake #2.

LAKE LOCATION

Lake Name: Rock L #2 Survey Date: 8/6/2002
 IDFG Catalog #: 70864 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rock Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8750
 Section: Township: Range: Acres: 5
 UTM East: 684287 UTM North: 4958199

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 1
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 32. Alpine lake survey of Rocky Lake.

LAKE LOCATION

Lake Name: Rocky L Survey Date: 7/11/2002
 IDFG Catalog #: 71135 Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Yankee Fork
 Elevation (ft): 8228
 Section: Township: Range: Acres:
 UTM East: 0 UTM North: 0

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 1 Trailhead Loc:

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>		<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0		Western Chorus Frog	0
	Spotted Frog	0		Spotted Frog	0
	Pacific Chorus Frog	0		Pacific Chorus Frog	0
	Tailed Frog	0		Tailed Frog	0
	Western Toad	0		Western Toad	0
	Long Toed Salamander	0		Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.33 # Fish Caught: 2 Fish/Hr: 6
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	2	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Juvenile observed - looked like westslope cutthroat.

Table 33. Alpine lake survey of Ruffneck Lake.

LAKE LOCATION

Lake Name: Ruffneck L Survey Date: 7/12/2002
 IDFG Catalog #: 71130 Primary Drainage: Main Salmon (Yankee Fk - Headwaters)
 Secondary Drainage: Beaver Creek
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8261
 Section: Township: Range: Acres: 9
 UTM East: 647394 UTM North: 4926108

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Langer Monument

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Stock very lightly - not much food available.

Table 34. Alpine lake survey of UP Lake.

LAKE LOCATION

Lake Name: UP L Survey Date: 6/17/2002
 IDFG Catalog #: 71220 Primary Drainage: Main Salmon (NFK - Lemhi)
 Secondary Drainage: Bob Moore Creek
 County: Lemhi
 Land Area: Salmon USFS Ranger Dist: Salmon
 Elevation (ft): 7411
 Section: Township: Range: Acres:
 UTM East: 265266 UTM North: 5013801

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: Yes Access Good (mi): 1
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc:

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>		<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0		Western Chorus Frog	0
	Spotted Frog	4		Spotted Frog	300
	Pacific Chorus Frog	0		Pacific Chorus Frog	0
	Tailed Frog	0		Tailed Frog	0
	Western Toad	0		Western Toad	0
	Long Toed Salamander	0		Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 0.5 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: Moderate Fish Observed: Gear:
Angling/Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	3	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Large amount of aquatic macrophytes present - inlets not very defined. Spawning potential is less than marginal. Fish very nice bodied. Observed 3 Cutthroat in the 350-399 size range.

Table 35. Alpine lake survey of Vanity Lake #1.

LAKE LOCATION

Lake Name: Vanity L #1 Survey Date: 7/10/2002
 IDFG Catalog #: 71009 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7864
 Section: Township: Range: Acres:
 UTM East: 654880 UTM North: 4928320

LAKE USE

Campsites: 3 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 2 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 1 # Fish Caught: 12 Fish/Hr: 12
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	3	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	1	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Angler caught fish - we took lengths.

Table 36. Alpine lake survey of Vanity Lake #10.

LAKE LOCATION

Lake Name: Vanity L #10 Survey Date: 7/9/2002
 IDFG Catalog #: 71023 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7901
 Section: Township: Range: Acres:
 UTM East: 653468 UTM North: 4927775

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 2
 Access X-Country (mi): 0 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>		<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.33</u>	Western Chorus Frog	0		Western Chorus Frog	0
	Spotted Frog	0		Spotted Frog	0
	Pacific Chorus Frog	0		Pacific Chorus Frog	0
	Tailed Frog	0		Tailed Frog	0
	Western Toad	0		Western Toad	0
	Long Toed Salamander	0		Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Lake has two deep (15-20') areas separated by shallow flat. Lot of groceries (calebeatis, caddis, & damsel).

Table 37. Alpine lake survey of Vanity Lake #11.

LAKE LOCATION

Lake Name: Vanity L #11 Survey Date: 7/9/2002
 IDFG Catalog #: 71024 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7981
 Section: Township: Range: Acres: 3
 UTM East: 652813 UTM North: 4926978

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Intermittent
 Trampled: Yes Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	3	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Adequate inlet/outlet. Too shallow. Different sizes of spotted frogs present.

Table 38. Alpine lake survey of Vanity Lake #12.

LAKE LOCATION

Lake Name: Vanity L #12 Survey Date: 7/9/2002
 IDFG Catalog #: 71025 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8034
 Section: Township: Range: Acres: 1
 UTM East: 653077 UTM North: 4926854

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 1
 Access X-Country (mi): 0 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Small body of water with frog pond in close proximity. Frog pond has outlet. Vanity #12 does not have inlet or outlet.

Table 39. Alpine lake survey of Vanity Lake #13.

LAKE LOCATION

Lake Name: Vanity L #13 Survey Date: 7/9/2002
 IDFG Catalog #: 71027 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8213
 Section: Township: Range: Acres: 5
 UTM East: 652789 UTM North: 4926527

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 1
 Access X-Country (mi): 0 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.58</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.1 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: Low Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Observed one 12" salmonid mortality.

Table 40. Alpine lake survey of Vanity Lake #2.

LAKE LOCATION

Lake Name: Vanity L #2 Survey Date: 7/10/2002
 IDFG Catalog #: 71010 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7975
 Section: Township: Range: Acres: 1.5
 UTM East: 654550 UTM North: 4928150

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 2 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Western Chorus Frog	0	0	Western Chorus Frog	0
Spotted Frog	0	0	Spotted Frog	0
Pacific Chorus Frog	0	0	Pacific Chorus Frog	0
Tailed Frog	0	0	Tailed Frog	0
Western Toad	0	0	Western Toad	0
Long Toed Salamander	0	0	Long Toed Salamander	0

Search Time (hrs.min) : 0.33

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: High Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Multiple year classes. Excellent spawning trib.

Table 41. Alpine lake survey of Vanity Lake #3.

LAKE LOCATION

Lake Name: Vanity L #3 Survey Date: 7/10/2002
 IDFG Catalog #: 71013 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7970
 Section: Township: Range: Acres: 7
 UTM East: 654650 UTM North: 4928000

LAKE USE

Campsites: 3 Campsite Impact Rating: low Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 3 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.5</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	1	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.33 # Fish Caught: 3 Fish/Hr: 9
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	3	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Lots of swamp around lake.

Table 42. Alpine lake survey of Vanity Lake #4.

LAKE LOCATION

Lake Name: Vanity L #4 Survey Date: 7/10/2002
 IDFG Catalog #: 71014 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8240
 Section: Township: Range: Acres: 2.5
 UTM East: 655209 UTM North: 4927729

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Western Chorus Frog	0	0	Western Chorus Frog	0
Spotted Frog	0	0	Spotted Frog	0
Pacific Chorus Frog	0	0	Pacific Chorus Frog	0
Tailed Frog	0	0	Tailed Frog	0
Western Toad	0	0	Western Toad	0
Long Toed Salamander	0	0	Long Toed Salamander	0

Search Time (hrs.min) : 0.33

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 0.75 # Fish Caught: 4 Fish/Hr: 5.3
 Fish Abundance: High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	2	0	0	0	0	0
250-299mm:	0	1	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	1	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

No amphibian reproduction areas present.

Table 43. Alpine lake survey of Vanity Lake #5.

LAKE LOCATION

Lake Name: Vanity L #5 Survey Date: 7/10/2002
 IDFG Catalog #: 71015 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7956
 Section: Township: Range: Acres: 2.7
 UTM East: 654664 UTM North: 4927792

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 3 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.083 # Fish Caught: 2 Fish/Hr: 12
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	1	0	0	0	0	0
250-299mm:	0	1	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Very close proximity to Vanity #3 - within 20 ft.

Table 44. Alpine lake survey of Vanity Lake #6.

LAKE LOCATION

Lake Name: Vanity L #6 Survey Date: 7/10/2002
 IDFG Catalog #: 71016 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 7975
 Section: Township: Range: Acres: 4.5
 UTM East: 654101 UTM North: 4927703

LAKE USE

Campsites: 3 Campsite Impact Rating: low Trail Around
 Lake: Complete
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 3 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.25 # Fish Caught: 4 Fish/Hr: 16
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	1	3	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 45. Alpine lake survey of Vanity Lake #7.

LAKE LOCATION

Lake Name: Vanity L #7 Survey Date: 7/9/2002
 IDFG Catalog #: 71017 Primary Drainage: MFk Salmon River
 Secondary Drainage: Rapid River
 County: Custer
 Land Area: Capehorn USFS Ranger Dist: Middle Fork
 Elevation (ft): 8058
 Section: Township: Range: Acres:
 UTM East: 653900 UTM North: 4927350

LAKE USE

Campsites: 2 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 2 Trailhead Loc: Vanity Summit

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>1</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 2 Hrs Fished: 0.5 # Fish Caught: 5 Fish/Hr: 10
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	5	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Grand rainbow fishery. They all should be like this.

Table 46. Alpine lake survey of WF Camas Lake #1.

LAKE LOCATION

Lake Name: WF Camas #1 Survey Date: 8/8/2002
 IDFG Catalog #: 70818 Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 7857
 Section: Township: Range: Acres: 13
 UTM East: 685924 UTM North: 4963480

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 7
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.2 # Fish Caught: 1 Fish/Hr: 5
 Fish Abundance: High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	1	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Stock only westslope cutthroat.

Table 47. Alpine lake survey of WF Camas Lake #2.

LAKE LOCATION

Lake Name: WF Camas #2 Survey Date: 8/8/2002
 IDFG Catalog #: 70819 Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8134
 Section: Township: Range: Acres:
 UTM East: 685205 UTM North: 4963400

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Other
 Trampled: Access Good (mi): 6 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.42</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	3	Spotted Frog	45
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 48. Alpine lake survey of WF Camas Lake #3.

LAKE LOCATION

Lake Name: WF Camas #3 Survey Date: 8/8/2002
 IDFG Catalog #: 70820 Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8301
 Section: Township: Range: Acres: 20
 UTM East: 684951 UTM North: 4963023

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 6
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>		<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.67</u>	Western Chorus Frog	0		Western Chorus Frog	0
	Spotted Frog	0		Spotted Frog	0
	Pacific Chorus Frog	0		Pacific Chorus Frog	0
	Tailed Frog	0		Tailed Frog	0
	Western Toad	0		Western Toad	0
	Long Toed Salamander	0		Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.75 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Westslope cutthroat only for stocking.

Table 49. Alpine lake survey of WF Camas Lake #4.

LAKE LOCATION

Lake Name: WF Camas #4 Survey Date: 8/8/2002
 IDFG Catalog #: 70823 Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8548
 Section: Township: Range: Acres: 5
 UTM East: 684400 UTM North: 4962937

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 5
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.167</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	9

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 50. Alpine lake survey of WF Camas Lake #5.

LAKE LOCATION

Lake Name: WF Camas #5 Survey Date: 8/8/2002
 IDFG Catalog #: 70824 Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8507
 Section: Township: Range: Acres: 12
 UTM East: 684374 UTM North: 4963093

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Partial
 Trampled: No Access Good (mi): 5
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 1 Hrs Fished: 0.1 # Fish Caught: 1 Fish/Hr: 10
 Fish Abundance: Very High Fish Observed: Gear:
Angling
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	1	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Appear to be westslope cutthroat.

Table 51. Alpine lake survey of WF Camas Lake #5B.

LAKE LOCATION

Lake Name: WF Camas #5B Survey Date: 8/8/2002
 IDFG Catalog #: 70824B Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis
 Elevation (ft): 8772
 Section: Township: Range: Acres: .1
 UTM East: 683833 UTM North: 4963241

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.083</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 52. Alpine lake survey of WF Camas Lake #5C.

LAKE LOCATION

Lake Name: WF Camas #5C Survey Date: 8/8/2002
 IDFG Catalog #: 70824C Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis Elevation (ft):
 Section: Township: Range: Acres: .1
 UTM East: 0 UTM North: 0

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 4
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.083</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	22
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Small & shallow (not on map).

Table 53. Alpine lake survey of WF Camas Lake #6A.

LAKE LOCATION

Lake Name: WF Camas #6A Survey Date: 8/8/2002
 IDFG Catalog #: 70826A Primary Drainage: MFk Salmon River
 Secondary Drainage: WF Camas Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Challis Elevation (ft):
 Section: Township: Range: Acres: 4
 UTM East: 684008 UTM North: 496337

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: None
 Trampled: No Access Good (mi): 0
 Access Poor (mi): 0
 Access X-Country (mi): 2 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.25</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	0	Spotted Frog	50
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 54. Alpine lake survey of Woodtick Lake #3.

LAKE LOCATION

Lake Name: Woodtick L #3 Survey Date: 8/8/2002
 IDFG Catalog #: 70813 Primary Drainage: MFk Salmon River
 Secondary Drainage: Woodtick Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8587
 Section: Township: Range: Acres: 10
 UTM East: 683819 UTM North: 4963713

LAKE USE

Campsites: 0 Campsite Impact Rating: none Trail Around
 Lake: Intermittent
 Trampled: No Access Good (mi): 4
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>	<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.42</u>	Western Chorus Frog	0	Western Chorus Frog	0
	Spotted Frog	1	Spotted Frog	0
	Pacific Chorus Frog	0	Pacific Chorus Frog	0
	Tailed Frog	0	Tailed Frog	0
	Western Toad	0	Western Toad	0
	Long Toed Salamander	0	Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Table 55. Alpine lake survey of Woodtick Lake #3A.

LAKE LOCATION

Lake Name: Woodtick L #3A Survey Date: 8/8/2002
 IDFG Catalog #: 70813A Primary Drainage: MFk Salmon River
 Secondary Drainage: Woodtick Creek
 County: Lemhi
 Land Area: Sleeping Deer USFS Ranger Dist: Middle Fork
 Elevation (ft): 8604
 Section: Township: Range: Acres: 5
 UTM East: 684049 UTM North: 4963839

LAKE USE

Campsites: 1 Campsite Impact Rating: low Trail Around
 Lake: None
 Trampled: No Access Good (mi): 3
 Access Poor (mi): 0
 Access X-Country (mi): 0 Trailhead Loc: Sleeping Deer

AMPHIBIAN SURVEY DATA

	<u>Adults</u>	<u>#</u>		<u>Juveniles</u>	<u>#</u>
Search Time (hrs.min) : <u>0.083</u>	Western Chorus Frog	0		Western Chorus Frog	0
	Spotted Frog	0		Spotted Frog	0
	Pacific Chorus Frog	0		Pacific Chorus Frog	0
	Tailed Frog	0		Tailed Frog	0
	Western Toad	0		Western Toad	0
	Long Toed Salamander	0		Long Toed Salamander	0

FISHERY AND FISH POPULATIONS

Anglers: 0 Hrs Fished: 0 # Fish Caught: 0 Fish/Hr: 0
 Fish Abundance: None Fish Observed: Gear:
Visual
 Hrs Set (gn): 0

(Length Frequency)

	<u>RB</u>	<u>CU</u>	<u>GN</u>	<u>BLT</u>	<u>RBT</u> <u>CU</u>	<u>GRL</u>	<u>EBT</u>
<u>LENGTH</u>							
0-49mm:	0	0	0	0	0	0	0
50-99mm:	0	0	0	0	0	0	0
100-149mm:	0	0	0	0	0	0	0
150-199mm:	0	0	0	0	0	0	0
200-249mm:	0	0	0	0	0	0	0
250-299mm:	0	0	0	0	0	0	0
300-349mm:	0	0	0	0	0	0	0
350-399mm:	0	0	0	0	0	0	0
>399mm:	0	0	0	0	0	0	0

Comments:

Lake is dry.

LITERATURE CITED

Bahls, Peter. 1992. Report of the High Lake Fisheries Project 1991. Clearwater National Forest.

2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-26

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-a²

Title: Mountain Lake Investigations
- Buster Lake

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

On August 28 and 29, 2002, we gill netted brook trout *Salvelinus fontinalis* and rainbow trout *Oncorhynchus mykiss* in Buster Lake in an effort to determine persistence of brook trout since stocking was discontinued in 1998 and evaluate the success of the recent rainbow trout stocking. A total of 91 trout, of which 79 were brook trout and 12 were rainbow trout were captured in 65.6 overnight hours of gill net effort. Mean total length of brook trout and rainbow trout was 248 mm and 149 mm, respectively. Relative weight calculations for captured brook trout averaged 119 g and for the rainbow trout 69 g. Zooplankton tows were done to assess the zooplankton densities in relation to fish yield.

The zooplankton quality index (ZQI) averaged 0.29. Comparing the relative weight and ZQI results suggests that competition for forage may be occurring and the rainbow trout fingerling are quite possibly being outcompeted by the established brook trout population.

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INTRODUCTION

Buster Lake is located west of Challis, in the Garden Creek Drainage (UTM coordinates 11T 705642mE, 4923974mN, NAD 27). This drainage is part of the domestic water source for the City of Challis and was locally known as a location to catch larger brook trout *Salvelinus fontinalis*. Buster Lake is situated at an elevation of 2,604 meters and has a surface area of about 4.86 hectares. Historically, the lake was stocked with brook trout and rainbow trout *Oncorhynchus mykiss*. Brook trout stocking was discontinued in 1998 as a part of a statewide effort to eliminate brook trout stocking. Rainbow trout, one thousand diploid fry, were last stocked on August 28, 2001.

OBJECTIVE

1. Monitor salmonid communities, persistence of brook trout and the success of the rainbow trout stocking program.
2. Determine the status of the zooplankton community and its suitability for forage.

METHODS

Four variable sized mesh, 38 m by 1.8 m, gillnets were used to sample brook trout from Buster Lake. Using a canoe, we set gill nets perpendicular to the shoreline with the large mesh end of the net towards the middle of the lake. We set the nets the afternoon of August 28 and retrieved the nets the following morning.

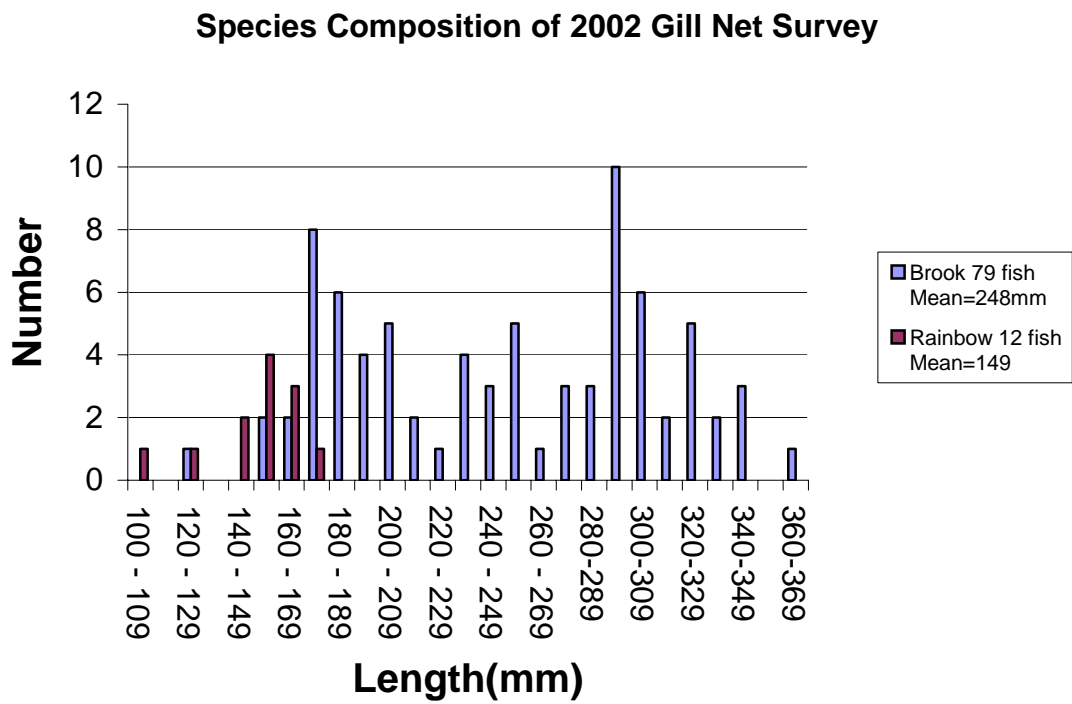
Captured brook trout and rainbow trout were measured to the nearest mm (total length (TL)) and weighed to the nearest gram. Length and weight data were used to calculate relative weights for each species. Relative weight formulas used in the analysis were obtained from Murphy et al. 1990 (brook trout) and Simpkins et al. 1996 (rainbow trout).

Zooplankton were sampled on August 28, 2002, using methods outlined by Teuscher, 1999. The only variation from the methods outlined by Teuscher is that zooplankton tows were taken at 8.5 m at the inlet and 7.0 m at the outlet instead of the standardized 9.1 m due to depth of lake. Laboratory procedures included analyzing zooplankton abundance and quality using zooplankton ratio method (ZPR) and zooplankton quality index (ZQI) methods developed by the Wyoming Game and Fish Department (Dan Yule, Wyoming Game and Fish, unpublished data) and Teuscher, 1999.

RESULTS AND DISCUSSION

We captured a total of 91 trout during 65.6 overnight gill net hours. Overall catch-per-unit-effort (CPUE) was calculated to be 1.39 fish/gill net hour. The CPUE by species was as follows: rainbow trout 0.18 fish/gill net hour and brook trout 1.2 fish/gill net hour. Seventy-nine brook trout were captured representing 87% of the total catch. Twelve were rainbow trout which made up the remaining 13% of the total catch. The TL of the brook trout ranged from 120 to 360 mm with an mean TL of 248 mm. (Figure 1). The TL of the rainbow trout ranged from 103 to 177 mm and had a mean length of 149 mm. Relative weights for brook trout and rainbow trout captured were determined to be 119 and 69 g, respectively. A relative weight of 100 g is considered average. These values suggest a better than average weight to length when

Figure 1. Length frequency histogram for Buster Lake 2002



compared to other North American populations for brook trout (Murphy et al. 1991) and less than average for rainbows (Simpkins et al 1996). These values are consistent with observations made in the field. In our opinion, these brook trout were remarkable in size.

Results from the zooplankton tows were a ZQI of 0.29. These results suggest that competition for food may be occurring (Table 1). We will continue to monitor the zooplankton community over time. We recommend discontinuing stocking rainbow trout in Buster Lake based on the large brook trout population and ZQI results. The more recently stocked rainbow trout with poor relative weight and reduced ZQI indicates the rainbow trout may not be able to compete with the established brook trout population. We intend to monitor the population of brook trout to determine if brook trout remain self-sustaining and ZQI improves. Should the brook trout population decline, we would consider an appropriate triploid or native cutthroat introduction.

Table 1. Zooplankton ratio (ZPR), and zooplankton quality index (ZQI) from Teuscher, 1999.

ZQI > 0.60	Competition for food unlikely stock fingerlings from 150 to 300 per acre
0.60 > ZQI > 0.10	Competition for food may be occurring stock fingerlings from 75 to 150 per acre
ZQI < 0.10	Forage resources are limiting stock less than 75 fingerlings per acre or catchables

LITERATURE CITED

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2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-26

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-a³

Title: Lowland Lake Investigations
- Carlson Lake

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

Recent lake surveys and angler accounts of Carlson Lake have indicated a population of stunted brook trout *Salvelinus fontinalis*. Since 1997, population control measures including gill net removal, explosives and salmonid predators have been employed to manipulate size structure however, no measurable responses were noted. In 2002, forty-one tiger muskellunge *Esox lucius* x *E. masquinongy* were introduced in an effort to shift the size structure of the brook trout population to fewer, larger fish. Prior to the tiger muskellunge introduction, an estimate of the brook trout population size 9,900 (95%CI, lower 9,829 and upper 10,007) and relative weight data were collected for future comparisons to determine the success of the project.

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INTRODUCTION

Carlson Lake is a two hectare, sub-alpine lake located in the Pahsimeroi River drainage located at (UTM Coordinates 12T 280334mE, 4906829mN, NAD 27), and is situated at about 2,438 m elevation. An intermittent outlet from the lake drains into Double Springs Creek, a tributary of the Pahsimeroi River. The outlet is only active during summer months in high water years (Liter and Lukens 1994). Historically, Idaho Department of Fish and Game (Department) stocked brook trout *Salvelinus fontinalis* and a one-time stocking of rainbow trout *Oncorhynchus mykiss* into the lake. Brook trout are the only fish species currently found in Carlson Lake.

During the 1960s and 1970s, Carlson Lake produced 0.9 to 1.4 kg brook trout, but by 1975 there was public concern over the decline in the numbers of these large fish (Kent Ball, intradepartmental memos 1975). Notes from a 1992 lake survey indicated that the littoral zone was heavily grazed, aquatic macrophyte growth was prolific, and the brook trout sampled were in poor condition with disproportionately large heads (Liter and Lukens 1994).

In 1993, the Department stocked 702 predatory Kamloops rainbow trout (Gerrard strain) in an effort to reduce the numbers of stunted brook trout and restore larger fish to the lake. However, this introduction evidently failed since the size structure of the Carlson Lake brook trout population has remained unchanged.

In 1997, 1999, 2000 and 2001 a total of 3,361 brook trout were gillnetted and removed from the lake in another effort to manipulate the size structure. In 1998, 818 brook trout were removed in a similar gillnetting effort done in conjunction with explosives in littoral areas to target younger year classes which were not effectively removed using gillnets (Curet et al. 2001). None of these efforts effected a change in size structure in the brook trout population.

The Department's Clearwater Region has had success in reducing brook trout populations in alpine lakes with tiger muskellunge *Esox lucius* x *E. masquinongy* introductions into lakes with brook trout populations (Murphy et al. 2001). Prior to the tiger muskellunge introduction a seven-step process as per guidelines established by the American Fisheries Society (AFS) was conducted (Kohler et al. 1984).

OBJECTIVE

Increase the average size of brook trout in Carlson Lake by reducing their numbers to improve the quality of the fishery.

METHODS

June 6, 2002 and June 13, 2002, brook trout were angled, adipose fin clipped and returned to the lake. On the evening of June 13, 2002, 11 experimental gill nets were set and removed the next morning. The nets were fished a total of 147.8 overnight hours. Captured brook trout were measured to the nearest mm (total length) and weighed to the nearest g. Length and weight data were used to calculate relative weights for each species. Relative weight formulas used in the analysis were obtained from Murphy et al. 1991.

The data collected from these efforts were also used to calculate a population estimate using the adjusted Petersen method as follows (Ricker W.E. 1975):

$$N = \frac{(M + 1)(C + 1)}{R + 1}$$

Where,

N = the population estimate

M = the number of fish marked

C = the number of fish caught

R = the number of marked fish recaptured.

On June 24, 2002, forty-one tiger muskellunge from the Hagerman Hatchery were stocked in the lake as an experimental project. The fish averaged 300 mm at the time of stocking. Stocking was conducted by Department personnel who transported the fish to the lake via quad runners.

RESULTS AND DISCUSSION

Between June 6, 2002 and June 13, 2002, 1,451 brook trout were angled, adipose fin clipped and returned to the lake. Five hundred and forty-six fish were caught during gill net sampling. Eighty-seven of those fish were recaptures.

Relative weight calculations of sampled fish yielded a mean value of 89.58 g. A value of 100 g is average for North American populations. This confirms historic field observations of smaller than average size brook trout. It should be noted that these calculations were based on ninety fish.

Population estimates calculated the brook trout population of fish over three inches to be 9,900. Using 95% confidence interval we calculated a lower limit of 9,829 and an upper limit of 10,007 fish. Fish under 76 mm were not considered in this calculation due to the bias of the sampling gear. Total lengths of brook trout sampled in 2002, ranged from 102 to 266 mm (Figure 1). Mean total length of brook trout sampled was 192 mm (Table 1).

Originally 80 tiger muskellunge, 40 per hectare, were to be released. Due to a furunculosis outbreak, a portion of the stock was lost, limiting the number of fish available. It is expected, given reports from Clearwater efforts, the tiger muskellunge predation will reduce the population resulting in an increase in average length (Murphy et al. 2001). There have been reports of Tiger muskellunge survival in Carlson Lake since post planting in June.

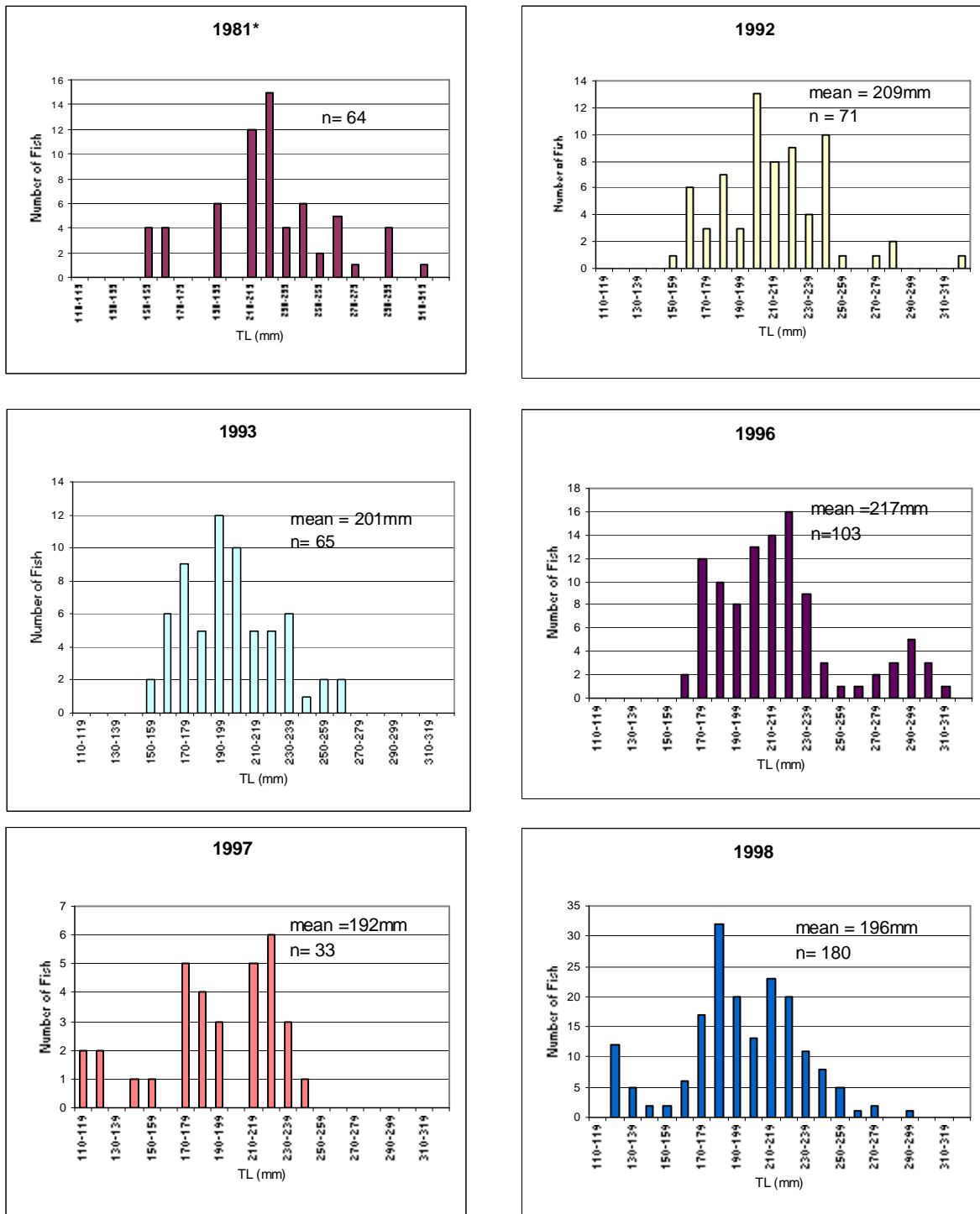


Figure 1. Length frequency histograms for brook trout in Carlson Lake during specified years, 1981-2002. In 1981 a mean length is not available as brook trout were measured by 10 mm length classes and no individual lengths were taken.

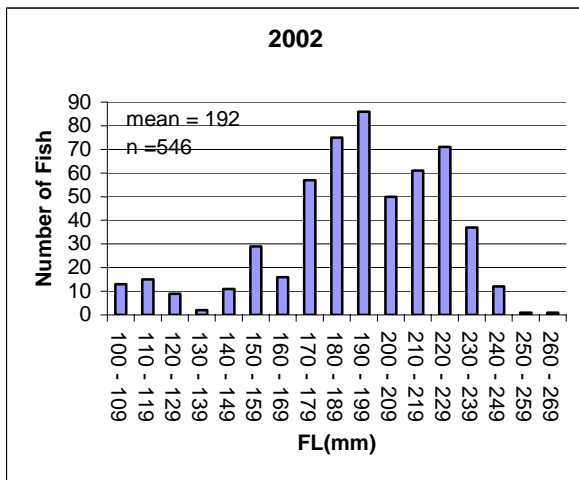
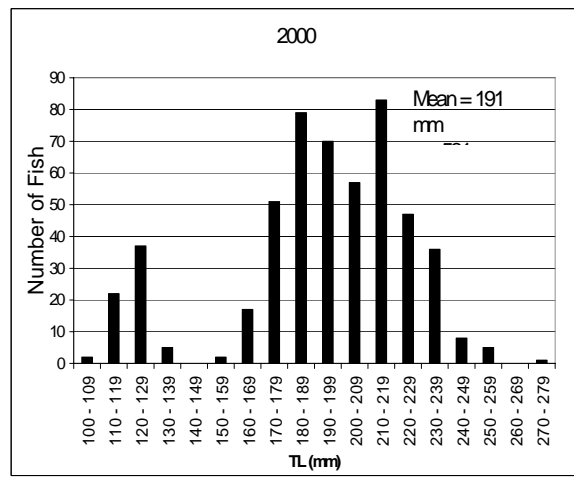
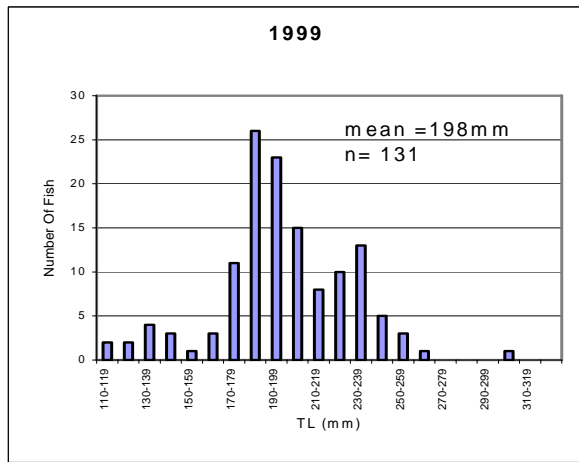


Figure 1. Continued.

Table 1. Comparison of eastern brook trout lengths and gill netting efforts in Carlson Lake, Idaho 1992-2002.

	1996	1997	1998	1999	2000	2002
Date	6/13	5/27-28	5/22-23	5/27-29	10/8-9	6/13-14
Numbers Removed	N/A	999	818*	1,151	665	546
Size Range (mm)	164-310	118-240	120-292	112-300	108-270	102-266
Mean Total Length (mm)	217	192	196	198	191	191.8
Total Gill Net Hours	N/A	466.4	483.3	386.1	270.9	147.8
Fish / net hour	N/A	2.1	1.7	3.0	2.5	3.69

*An additional 460 brook trout were removed with explosives

RECOMMENDATIONS

Fisheries staff will sample Carlson Lake next field season to track changes in the size structure of the brook trout population. At this point, we will not publicize this study to deter anglers from targeting tiger muskellunge. Once we feel the tiger muskellunge have been successful in controlling the brook trout population the findings of the project will be released to local media. Also, should this method prove favorable for controlling brook trout populations, public comment will be sought for the use of tiger muskellunge in other bodies of water in the Region.

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2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-26

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-b¹

Title: Lowland Lake Investigations
- Herd Lake

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

On June 6 and 7, 2002, the fish community in Herd Lake was surveyed via gillnets. The species composition was entirely rainbow trout *Oncorhynchus mykiss*, which made up 100% of the catch. The nets were fished a total of 51.16 overnight hours and had a capture rate of 1.58 fish/hr/net.

On August 27, 2002, Herd Lake was sampled to assess zooplankton resources available for fish forage. The averaged values for zooplankton ratio (ZPR) and zooplankton quality index (ZQI) were 0.04 and 0.01, respectively. These values indicate that zooplankton forage resources are limited in the lake.

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INTRODUCTION

Herd Lake, a landslide lake, is located in Custer County at 2,187m elevation (UTM coordinates 11T 726324mE, 4885654mN, NAD 27). The surface area is 6.9 hectares. It is a coldwater rainbow trout *Oncorhynchus mykiss* fishery under general management regulations. The principle inlet flow is provided by Herd Creek, which is a tributary to the East Fork Salmon River.

OBJECTIVES

1. Monitor the lake's zooplankton population to gain understanding of forage availability and competition for food.
2. Monitor the fishery's species composition and size structure.

METHODS

Four experimental gill nets, two floating and two sinking, were deployed the evening of June 6, 2002 and removed the next morning. The gill nets were set perpendicular to the shore. We set the sinking and floating gills nets for approximately 12 to 13 hours. Fish captured were identified and measured to nearest mm in total length.

Zooplankton was sampled on August 19, 2002 using methods outlined by Teuscher, 1999. The only variation from the methods outlined by Teuscher is that all zooplankton tows were taken at 8.0 m instead of the standardized 9.1 m due to depth of lake. In the laboratory procedures, zooplankton abundance and quality was analyzed using ZPR and ZQI methods developed by the Wyoming Game and Fish (Dan Yule, Wyoming Game and Fish, unpublished data) and Teuscher, 1999.

Zooplankton were collected using three nets fitted with small (150), medium (500) and large (750) mesh. One tow of each sized mesh was made at two locations; the outlet and mid-lake. The zooplankton samples were preserved in denatured ethyl alcohol for at least two days. This allows for phytoplankton to breakdown. The biomass of the samples were weighed. These values were used for generating zooplankton ratio (ZPR) and zooplankton quality index (ZQI) Table 1.

RESULTS AND DISCUSSION

We captured 81 fish, during a total of 51.2 gill net hours. All captured fish were rainbow trout. Total lengths of the sampled rainbow trout ranged in size from 97 to 350 mm with an average of 199.8 mm (Figure 1). The mean capture per unit effort (CPUE) for the four-gill nets set was 1.58 fish/hour/net. This represents an increase over the catch rates of 0.94 and 0.92 in 1996 and 2001, respectively (Figure 5).

A comparison of CPUE (fish/hour) for years 1994 to 2002 indicate relatively high catches in 1994 which is prior to known fish kill during the winter of 1994/1995 (Liter et al. 1997). The drop in CPUE in 1996 may be explained by the 1994/1995 fish kill (Figure 5). The lack of

Table 1. Zooplankton ratio (ZPR), and zooplankton quality index (ZQI) from Teuscher, 1999.

ZQI > 0.60	Competition for food unlikely stock fingerlings from 150 to 300 per acre
0.60 > ZQI > 0.10	Competition for food may be occurring stock fingerlings from 75 to 150 per acre
ZQI < 0.10	Forage resources are limiting stock less than 75 fingerlings per acre or catchables

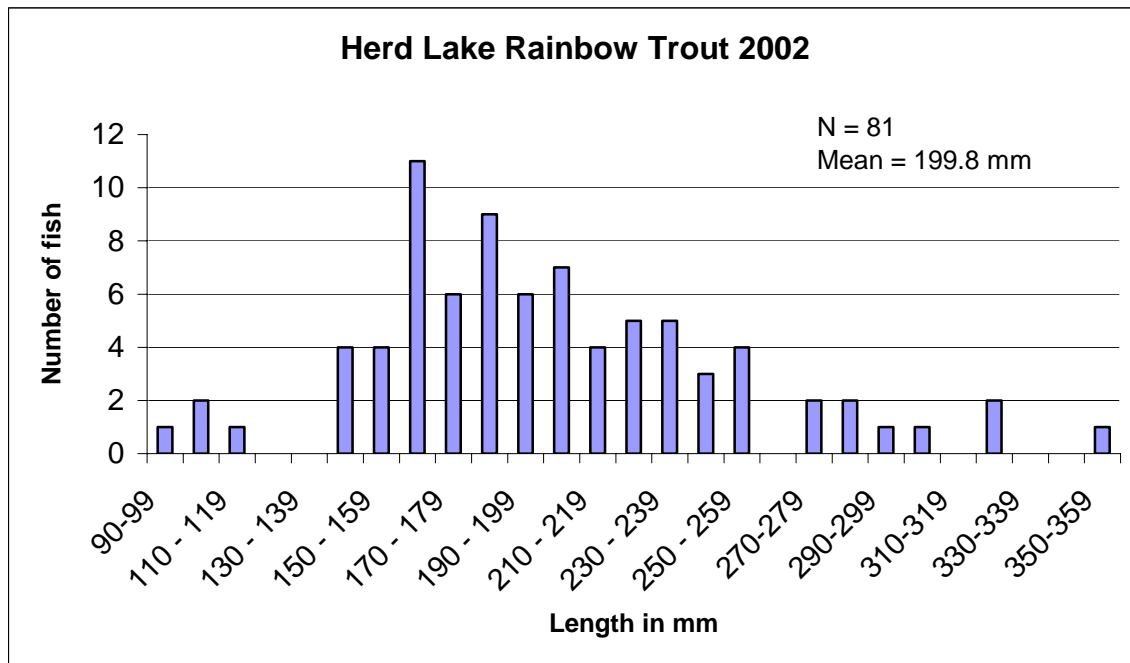


Figure 1. Length frequency of rainbow trout collected from Herd Lake, Idaho 2002

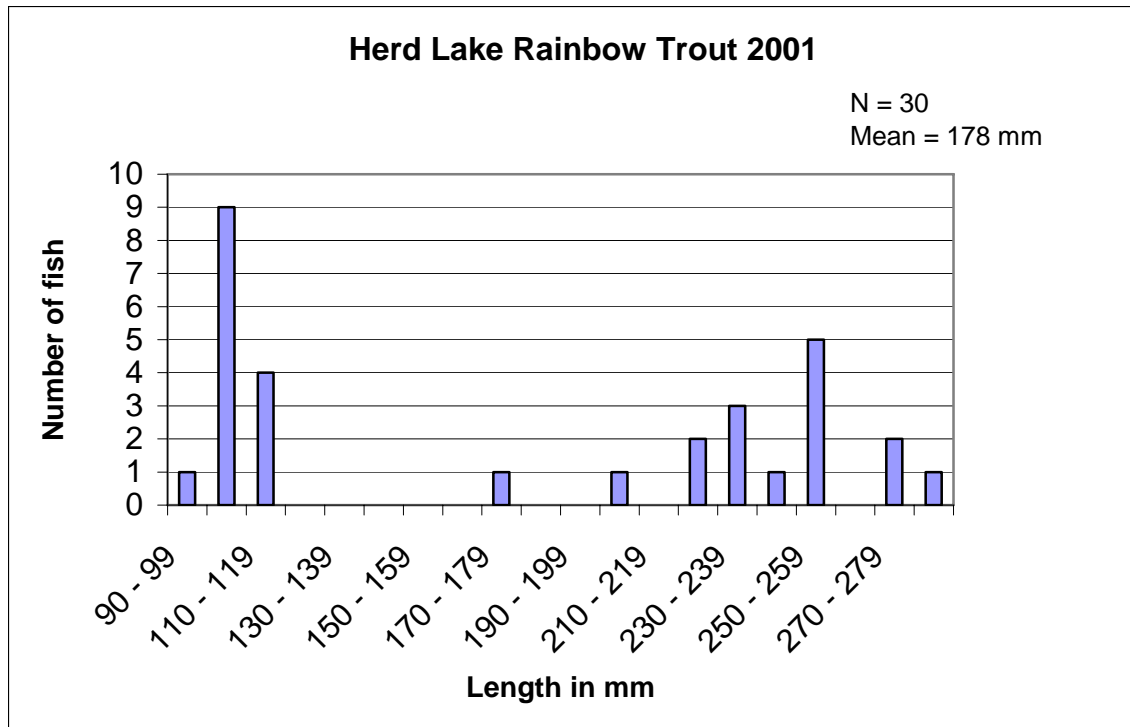


Figure 2. Length frequency of rainbow trout collected from Herd Lake, Idaho 2001

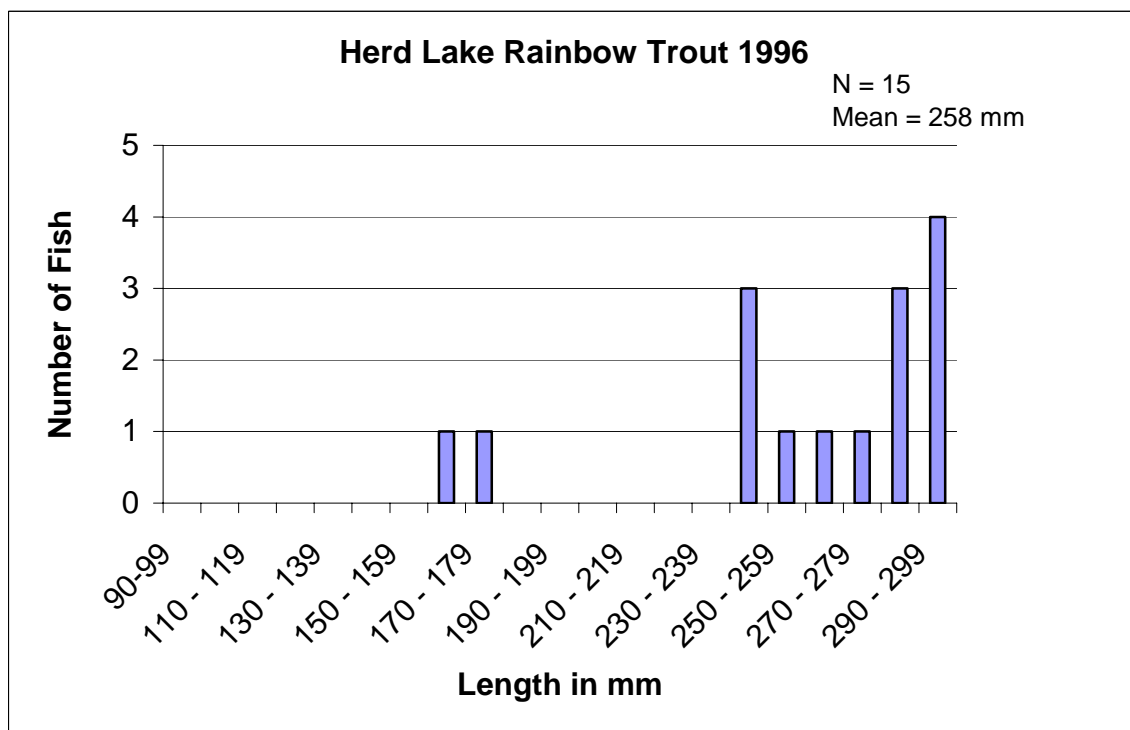


Figure 3. Length frequency of rainbow trout collected from Herd Lake, Idaho 1996

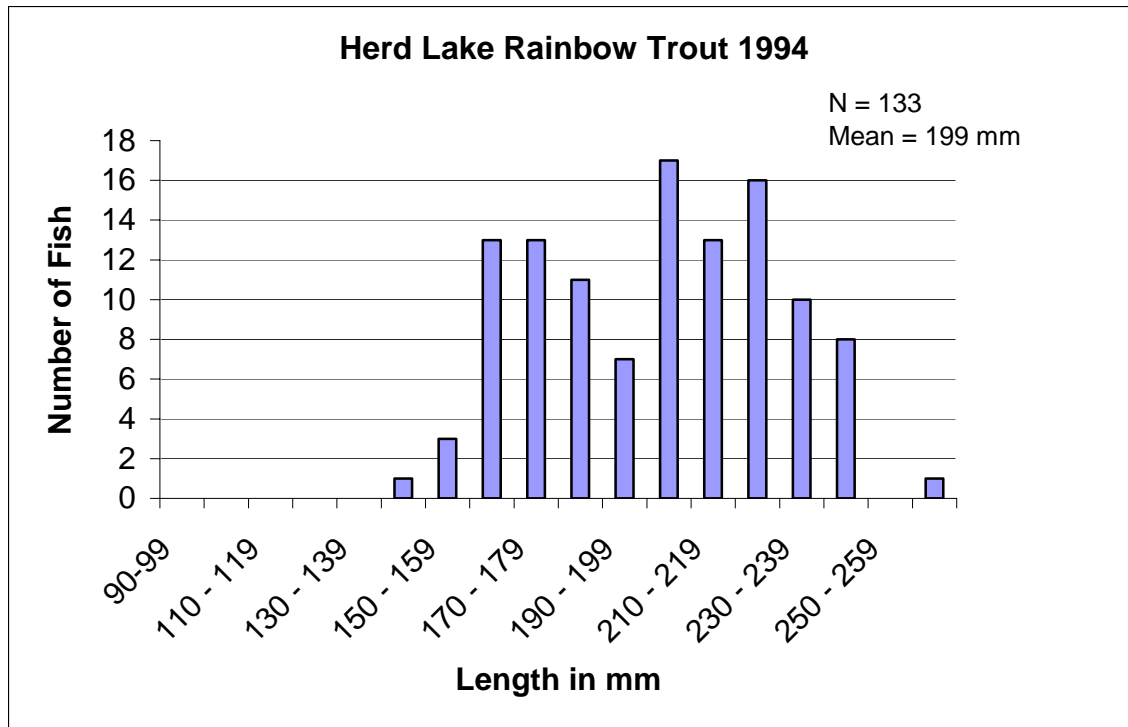


Figure 4. Length frequency of rainbow trout collected from Herd Lake, Idaho 1994

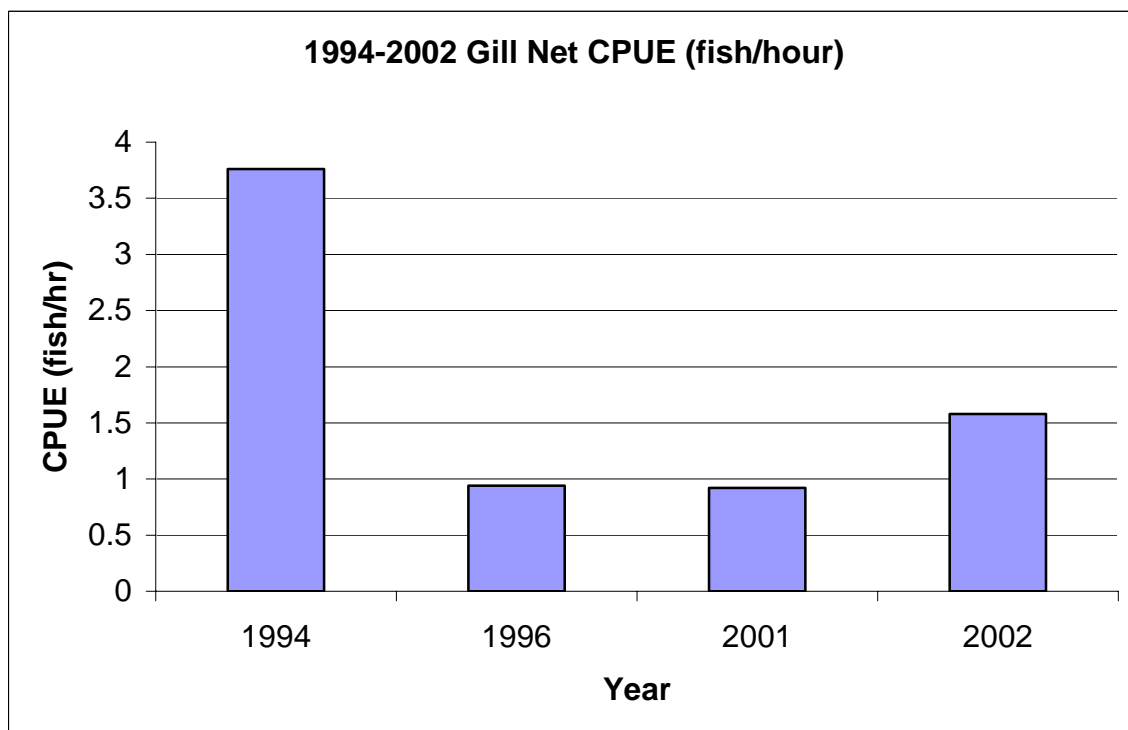


Figure 5. Gill Net CPUE (fish/hour) 1994 - 2002

positive response in 2001 could be due to another fish kill or impacts to the spawning population as a result of the 1994/1995 fish kill (Figure 5). A relatively high number of small fish in the 2001 graph (Figure 2) may support the latter hypothesis. The improved CPUE in 2002 along with a more complete size structure may be a result of more favorable lake conditions (Figure 5).

Results of the zooplankton tows provided ZPR and ZQI values of 0.06 and 0.01 at mid-lake and 0.02 and 0.01 at the inlet respectively. The inlet was too shallow to get an appropriate sample. These values suggest that forage resources are limited and the fish population is cropping off almost entirely the preferred zooplankton size.

Fish size in Herd Lake, similar to Jimmy Smith Lake, is believed to be density dependent and available forage limited. ZQI results given above coupled with fish length frequency data leads us to consider an effort to increase fish size. However, the lake is meeting the direction of the management plan. The direction is to maintain a fishery with natural production. The Regional office receives periodic reports of fish kills that may occasionally control population levels. We need to consider this intermittent control. Further evaluation of this fish population and water quality is justified to determine what factors may be limiting fish growth in the lake.

RECOMMENDATIONS

1. Continue to monitor the zooplankton population.
2. Explore opportunities for population control in Herd Lake to improve the average size of fish. We will evaluate the weir blocking the inlet creek at about 1/3 mile upstream of lake to limit spawning.
3. Sample Herd Lake to assess the relative weight /size structure of resident rainbow trout with gill net sampling.

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2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-26

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-b²

Title: Lowland Lake Investigations
- Jimmy Smith Lake

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

On August 27, 2002, the zooplankton community in Jimmy Smith Lake was sampled to determine zooplankton ratios (ZPR) and zooplankton quality index (ZQI) at the outlet and mid-lake. Zooplankton samples were collected, preserved and processed using methods outlined by Teuscher. Due to the lack of large zooplankton, results for ZPR and ZQI were 0 and 0, respectively. This data suggests that zooplankton resources in Jimmy Smith Lake are limited as a forage resource for trout production.

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INTRODUCTION

Jimmy Smith Lake is a landslide lake, located in north-central Custer County at 1,948 m elevation with a surface area of 26 hectares (UTM coordinates 11T 707474mE, 4894112mN NAD 27). The lake has one outlet and two inlet streams. The outlet stream is located at the north end of the Lake. The two inlet streams are located at the west and south ends of the lake. These tributaries provide adequate spawning area.

Jimmy Smith Lake is eutrophic body of water dominated by an abundance of aquatic macrophytes. It supports a naturally reproducing population of rainbow trout *Oncorhynchus mykiss*. The lake was stocked with 184,600 rainbow trout from the Mackay Hatchery between 1927 and 1938 and has not been stocked since.

During the week of July 30, 2000 approximately 1,000 fish died as a result of high water temperature and low dissolved oxygen. These conditions were aggravated by extremely hot weather, little precipitation, and the high demand placed on the system due to the decay of the aquatic plants in the lake (Brimmer 2000). This is the first documented fish kill found in the Region's records for Jimmy Smith Lake.

Historical data from 1966 illustrates little change over 30 years in Jimmy Smith Lake rainbow trout distribution (Liter et al. 1997). Gill net efforts in 2001 produced 6.85 fish/hr, with a mean length of 203 mm (n=113) (Curet et al. 2001). Gillnet efforts in 1996 produced 10.1 fish/hr, with a mean length of 213 mm (n=157). Data from 1966 reported rainbow trout mean length at 217 mm (n=99).

OBJECTIVES

1. Monitor the lake's zooplankton community to determine the zooplankton ratios (ZPR) and zooplankton quality index (ZQI) for the lake.
2. Review and analyze historical files on Jimmy Smith Lake to better determine future management options.

METHODS

Zooplankton were sampled on August 19, 2002 using methods outlined by Teuscher, 1999. In the laboratory procedures, zooplankton abundance and quality were analyzed using ZPR and ZQI methods developed by the Wyoming Game and Fish (Dan Yule, Wyoming Game and Fish, unpublished data) and Teuscher, 1999

Zooplankton were collected using three nets fitted with small (150), medium (500) and large (750) mesh. Samples were preserved in denatured alcohol for more than two days to breakdown the phytoplankton. Biomass of the samples were then recorded. Calculations of weights generated ZPR and ZQI data.

RESULTS AND DISCUSSION

Results from the zooplankton ZPR and ZQI indices were 0 and 0, respectively. At both sites sampled (outlet and mid-lake), we did not capture any large zooplankton so the values from the 750 mesh net were zeros. Therefore, the calculations made to generate the ZPR and ZQI values were zero. These estimates suggest that forage resources are limited (Table 1). We feel that the fish population is cropping off the larger sized zooplankton, susceptible to trout predation.

After reviewing historical records it has been determined that mean length of fish has changed little over the last 36 years. There has been a slight decrease in the mean length of the fish. In 2001, mean length of the fish sampled was 203 mm (n=113) compared to a 1966 data report where rainbow trout mean length was 217 mm (n=99). Jimmy Smith Lake is meeting the direction of the management plan to provide a fishery supported by natural production.

We suggest methods to potentially reduce the fish population. Potential management methods would include: installing migration barrier to limit inlet spawning; promoting increased angler use; gill netting yearling-sized fish in littoral strongholds; and/or tiger muskellunge *Esox lucius* x *E. masquinongy* introduction. The Department is currently experimenting with tiger muskellunge introductions in several mountain lakes in the Clearwater Region. Preliminary results suggest these introductions have been successful in significantly reducing brook trout numbers (T. Cochnauer, personal communication).

RECOMMENDATIONS

1. Sample Jimmy Smith Lake to monitor the size structure of resident rainbow trout with gill net sampling.
2. Monitor zooplankton community and determine zooplankton species present.
3. Explore opportunities for population control in the lake to improve the average size of fish.

Table 1. Zooplankton ratio (ZPR), and zooplankton quality index (ZQI) from Teuscher, 1999.

ZQI > 0.60	Competition for food unlikely stock fingerlings from 150 to 300 per acre
0.60 > ZQI > 0.10	Competition for food may be occurring stock fingerlings from 75 to 150 per acre
ZQI < 0.10	Forage resources are limiting stock less than 75 fingerlings per acre or catchables

LITERATURE CITED

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2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-26

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-b³

Title: Lowland Lake Investigations
- Mosquito Flat

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

On June 5 and 6, 2002, we sampled Mosquito Flat Reservoir with gill nets. A total of 52 trout were captured in 49.5 overnight hours of gill net effort. The catch was comprised of 43 rainbow trout *Oncorhynchus mykiss*, 6 brook trout *Salvelinus fontinalis*, two bull trout *S. confluentus* and one rainbow/cutthroat *O. mykiss* x *O. clarki* hybrid. A relative weight of 100.6 g was determined for the rainbow trout sampled. A range of relative weights from 14.6 to 110.6 g were calculated for the brook trout sampled.

The zooplankton community in Mosquito Flats Reservoir was sampled on August 28, 2002 to assess zooplankton resources available for fish forage. The zooplankton quality index (ZQI) values for the reservoir at the dam and at mid-reservoir were 0.51 and 0.13, respectively. These values suggest that competition for food resources may be occurring.

During the summer of 2002, work was completed on the Mosquito Flat Reservoir dam to bring the structure into compliance with Idaho Department of Water Resources (IDWR) dam safety requirements. The result of the construction fortified the dam and made it possible to raise the reservoir level to 100.5 feet. Monuments were placed and positions recorded on the face of the dam for monitoring movement. The work area was reseeded with native grasses and forbs.

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INTRODUCTION

Mosquito Flat Reservoir is located on Challis Creek 16.1 kilometers west of Challis, (UTM coordinates 11T 703768mE, 4932646mN, NAD 27) at an elevation of 2,112 m. The reservoir was built in 1954 and stores 793 acre-feet of irrigation water. The Idaho Department of Fish and Game (Department) has water rights on 28% of the storage, reserved as a minimum pool. This represents a 222 acre-foot pool with a surface area of approximately 8.5 hectares. Mosquito Flat Reservoir is a popular fishery with local anglers.

OBJECTIVES

1. Determine the status of the zooplankton community and suitability for forage.
2. Improve dam to comply with IDWR requirements.
3. Monitor fish species composition and size structure

METHODS

Four experimental gill nets, two floating and two sinking, were deployed on the evening of June 5, 2002 and removed the next morning. Gill nets were set perpendicular to the shore. Captured fish were measured to the nearest mm in total length (TL) and weighed to the nearest gram.

Brook trout *Salvelinus fontinalis* and rainbow trout *Oncorhynchus mykiss* sampled from the lake were used to assess the population. Length and weight data was used to calculate relative weights for each species. Relative weight formulas for brook and rainbow trout were obtained from Murphy (Murphy et al. 1990) and brook trout from Simpkins (Simpkins et al. 1996).

Zooplankton were sampled at the dam and mid-lake using methods outlined by Teuscher, 1999. The only variation from the methods outlined by Teuscher is that all zooplankton tows were taken at 8.5 m instead of the standardized 9.1 m due to depth of lake. In the laboratory, zooplankton abundance and quality was analyzed using zooplankton ration method (ZPR) and zooplankton quality index (ZQI) methods developed by the Wyoming Game and Fish (Dan Yule, Wyoming Game and Fish, unpublished data) and Teuscher, 1999. An average was calculated using the ZPR and ZQI results from the two sampling sites.

RESULTS AND DISCUSSION

We captured a total of 52 trout during 49.5 overnight gill net hours. Overall catch-per-unit-effort (CPUE) was calculated to be 1.05 fish/gill net hour. The CPUE by species was: 0.87 for rainbow trout, 0.12 for brook trout, 0.03 for bull trout *S. confluentus* and 0.02 for rainbow/cutthroat *O. mykiss* x *O. clarki* hybrid. Total length (TL) of rainbow trout ranged from 270 to 315 mm with a mean TL of 291 mm (Figure 1). The TL of the brook trout ranged from 215 to 250 mm with a mean length of 228 mm. Relative weights for the rainbow trout captured were determined to be 100.6 g. Relative weights for brook trout ranged from 14.6 to 110.6 g. We feel a problem with the scale used to weigh the fish led to these erratic values. A relative weight of 100 g is considered average weight to length when compared to other North American

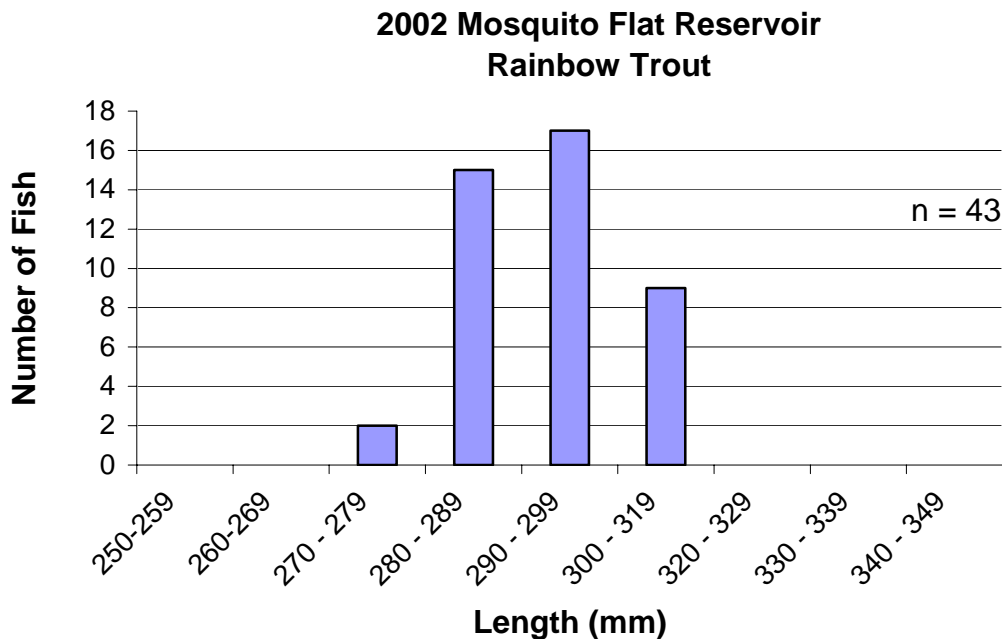


Figure 1. Length frequency of rainbow trout collected from Mosquito Flat Reservoir, Idaho 2002.

populations. Formulas to calculate relative weights for rainbow trout and brook trout Simpkins et al. 1996 and Murphy et al., respectively.

The zooplankton ZPR indices for the dam and mid-lake sites were 0.45 and 0.21, respectively. The zooplankton ZQI for the dam and mid-lake sites were 0.51 and 0.31, respectively. These values suggest that competition for food resources may be occurring (Table 1). In 2001 and 2002, fingerling releases were curtailed to determine if zooplankton numbers or size structure would increase accordingly. Given the ZQI values in 2000, 2001 and 2002 the reduction in fingerling stocking may have caused the increase in the ZQI values (Figure 2). A concurrent collection of weights and lengths of sampled fish would have helped verify this conclusion. However, weight information was not collected in years prior to 2002. In 2003, length and weight information will be collected again for future comparisons and to track trends in relative weights. Future management will look at relative weight trends and zooplankton monitoring over time to consider further stocking reductions.

The Department was involved with improving the dam and water control structures at the Reservoir. In 2002, measures implemented included: the crest of the dam was raised and leveled to a height of 100.5 feet in order to sustain $\frac{1}{2}$ probable maximum flood (PMF), placement of stability pins to monitor dam movement, and reseeding of disturbed area. This work was accomplished at a cost of \$17,600. The Mosquito Flat Water Users, Inc., Challis/Salmon National Forest, Idaho Department of Water Resources, Challis Creek Cattle Company, and the Department cooperated to accomplish improvements.

Table 1. Zooplankton ratio (ZPR), and zooplankton quality index (ZQI) from Teuscher, 1999.

ZQI > 0.60	Competition for food unlikely stock fingerlings from 150 to 300 per acre
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ZQI < 0.10	Forage resources are limiting stock less than 75 fingerlings per acre or catchables

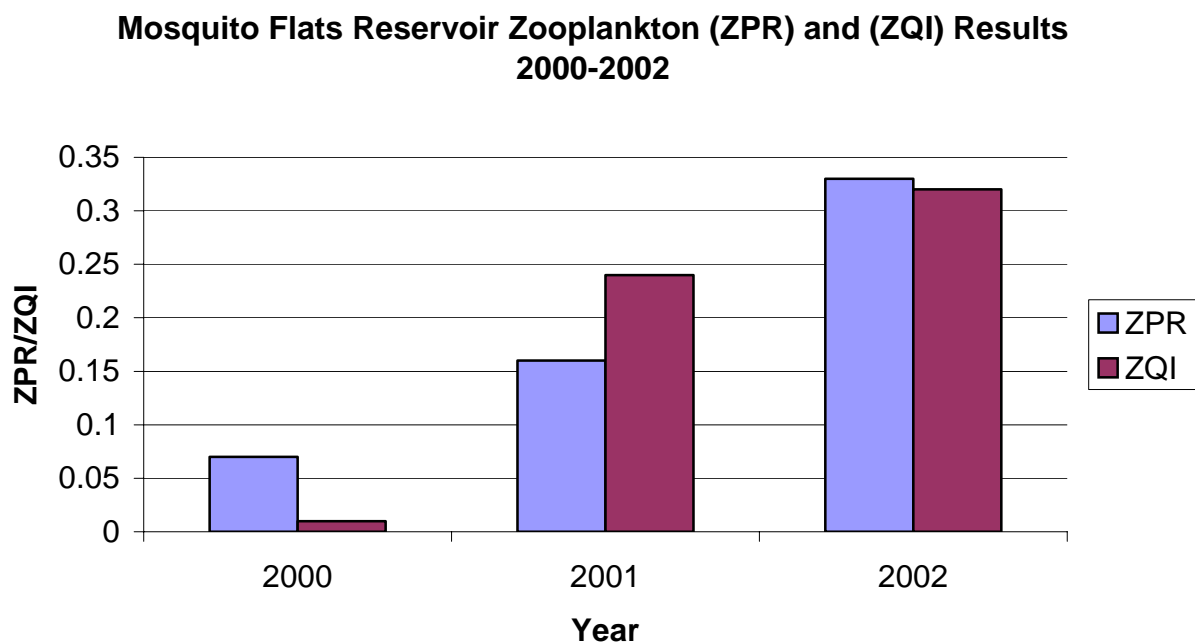


Figure 2. Zooplankton ZPR and ZQI Indices from Mosquito Flats Reservoir, Idaho, during 2000, 2001, and 2002.

Species Composition of Mosquito Flat Reservoir

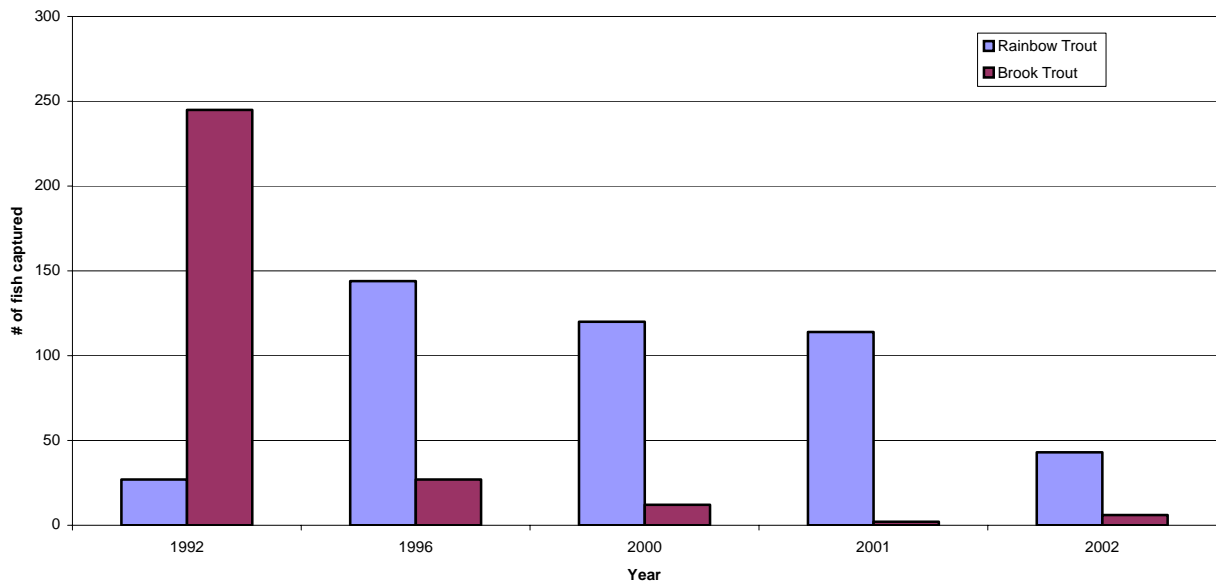


Figure 3. Species Composition of Mosquito Flats Reservoir, Idaho, 1992 through 2002.

RECOMMENDATIONS

1. Reduce stocking rates in Mosquito Flats Reservoir to determine if adjustments in stocking will improve fish relative weights and ZPR and ZQI values.
2. Continue to monitor trends in the trout population in Mosquito Flat reservoir with a consideration for determining the possible causes of decline of brook trout within the drainage.

LITERATURE CITED

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2002 ANNUAL PERFORMANCE REPORT

State Of: Idaho

Program: Fisheries Management F-71-R-26

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-b⁴

Title: Lowland Lake Investigations
- Williams Lake

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

The Williams Lake zooplankton community was sampled August 19, 2002 to determine the lake's standing crop levels available for fish utilization. Zooplankton ZPR values averaged 0.7 and zooplankton ZQI values averaged 0.66. The values generated suggest that competition for forage by fish is unlikely. In March 2002, dissolved oxygen and temperature were sampled as part of an on-going citizen's water-monitoring project. We found acceptable oxygen levels (5.0 ppm) to a depth of 2-3 m and the lake to be unstratified by temperature during sampling efforts in March 2002. Flow measurements were taken at the inlet and outlet between May and September 2002. Inlet flow measurements ranged between 1.45 to 2.41 cubic feet per second (cfs). The inlet water temperature ranged from -0.1°C to 14.5°C. Outlet flow measurements ranged between 0.77 to 3.64 cfs. The outlet water temperature ranged from 10.3°C to 12.3°C. Lake level gauge readings were measured from April to September 2002 and ranged from 8.7 feet to 10.69 feet. As of January 2003, the Department of Environmental Quality (DEQ) has determined a no change status in the lakes trophic levels from 1992 to 2002. With the assistance of volunteers, Department staff collected and spawned 20 pairs of adult rainbow trout *Oncorhynchus mykiss*. Resultant progeny, estimated to number 40,000, were released into the inlet

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INTRODUCTION

Williams Lake, an early eutrophic lake, is located in north central Lemhi County (UTM coordinates 12T 265427mE, 4989077mN NAD 27) at 1,600 m elevation. The lake has a surface area of 73 ha, maximum depth of 58 m, and mean depth of 23 m. The principle in-flow is provided by Lake Creek, with some inflow originating from springs and intermittent streams. Rainbow trout *Oncorhynchus mykiss* and bull trout *Salvelinus confluentus* are the only fish species recorded from the lake.

Winter dissolved oxygen concentrations fall below 5.0 ppm within 2 to 4 m of the surface. In summer and winter, dissolved oxygen concentrations of 1.0 ppm occur as shallow as 8 m. These low dissolved oxygen levels are limiting the available fish habitat and therefore, are limiting the fish production potential of the lake. Furthermore, these low oxygen levels have been responsible for past fish kills in the lake. Poor water quality in the lake is caused by nutrient input from phosphorous, eroded sediments from the watershed and the leaching of human waste from private septic systems around the lake. During 2000 and 2001 private landowners renovated their septic systems to reduce this problem.

OBJECTIVES

1. Determine the status of the zooplankton community and its suitability for forage.
2. Monitor oxygen and temperatures at specified locations and depths.
3. Monitor inlet/outlet flows and lake level gauge readings.
4. Engage private interests with a goal of addressing fisheries and water quality issues.
5. Spawn rainbow trout in inlet tributary and release progeny to William Lake

METHODS

ZPR/ZQI Measurements

Zooplankton were sampled on August 19th of 2002 using methods outlined by Teuscher, 1999. In the laboratory, zooplankton abundance and quality was analyzed using zooplankton ratio method (ZPR) and zooplankton quality index (ZQI) methods developed by the Wyoming Game and Fish (Dan Yule, Wyoming Game and Fish, unpublished data) and Teuscher, 1999.

Dissolved Oxygen and Temperature Measurements

Dissolved oxygen was monitored on March 6, 2002 with a YSI oxygen meter. Temperature was monitored with a YSI meter which was verified with a hand held thermometer.

Inlet/Outlet Flows and Temperature Measurements

Inlet and Outlet flow measurements were taken with a velocity meter in May, July and September of 2002. In order to maintain consistency between sampling efforts a set transect area was established for both sites. Depth, width, and velocity were measured during each sampling session. Width was measured in feet using a carpenter's tape. Depth was measured

in feet using the calibrated rod on the velocity meter. Velocity was measured in cubic feet per second (cfs) using a velocity meter provided by Idaho Department of Environmental Quality (DEQ). Depth and velocity measurements were taken every 0.5 feet. The raw data was then used to calculate wetted width (ft), average depth (ft), averaged velocity (ft/sec.) and finally, the flow (cfs).

Two hobos were deployed in the inlet and two in the outlet on April 15 and retrieved on October 16, 2002. Only the data collected from April 17 to October 11 was used for analysis. The hobos recorded temperatures approximately every 2.5 hours. The downloaded data was imported into a thermograph macro that charted the daily high, low, average and seven-day average high temperatures. This data was then used in a graph that showed daily high, average and diurnal water temperatures. The diurnal temperatures graphed relate to the difference in daily highs and lows.

A lake level gauge located at (12T 266199mE, 4988741mN) the east end of the lake was used to monitor fluctuations in water levels. Lake level measurements were recorded every two to three days from April 11 to September 21, 2002. Measurements were recorded in feet and 10th/foot.

The IDEQ used their LakeWatch program to calculate Burns and Carlson Trophic State Index (TSI) values for Williams Lake from January 1992 to December 2002 (Herron, 2003). The variables used by DEQ to determine TSI values were chlorophyll a, secchi depth, total phosphorous and total nitrogen.

On May 16 and 23, ten female rainbows and eleven female rainbows, respectively, were collected with electrofishing gear and spawned with more than 21 male rainbows. The resultant spawn was incubated at a facility downstream of the lake until the fry were ready for release in the lake.

RESULTS AND DISCUSSION

ZPR/ZQI Measurements

Results from the zooplankton ZPR were 0.43 at the inlet, 0.56 at mid-lake and 1.1 at the dam. Results from the zooplankton ZQI were 0.29 at the inlet, 0.98 at mid-lake and 0.71 at the dam. The averaged ZQI (.66) for the entire lake suggest that competition for food is unlikely. Individual readings are presented in Table 1. By comparison, results of 2000 and 2001 averaged ZQI values were 0.67 and 0.92 (Figure 1). 2000 and 2002 averaged ZQI results are almost identical where 2001 results are higher. We will continue to monitor the zooplankton community to see whether a trend in zooplankton growth can be determined.

Dissolved Oxygen and Temperature Measurements

Dissolved oxygen and temperature recordings taken on March 6, 2002 demonstrated similar profiles to those collected in the last 10 years. These profiles indicate the lake to be stratified for dissolved oxygen. As in the recent past, oxygen levels hold above 5 ppm for upper two meters of the lake and then decline with depth. In the winter, the lake was stratified for oxygen but not for temperature (Tables 2, 3 and 4.).

Table1. Zooplankton ratio (ZPR), and zooplankton quality index (ZQI) from Teuscher, 1999.

ZQI > 0.60	Competition for food unlikely stock fingerlings from 150 to 300 per acre
0.60 > ZQI > 0.10	Competition for food may be occurring stock fingerlings from 75 to 150 per acre
ZQI < 0.10	Forage resources are limiting stock less than 75 fingerlings per acre or catchables

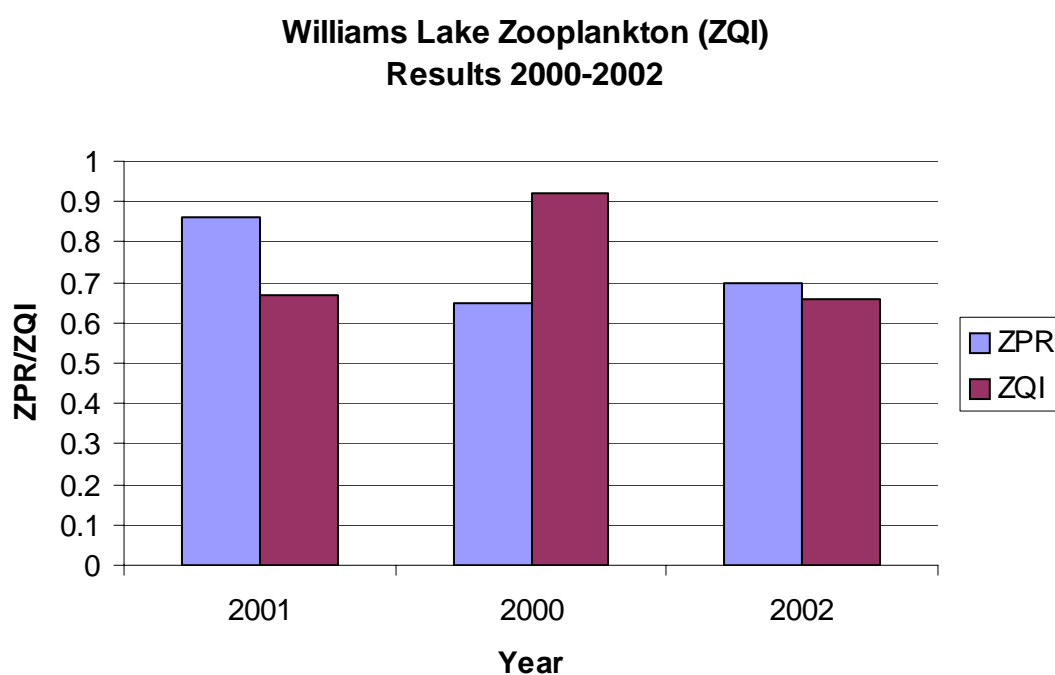


Figure 1. Zooplankton (ZQI) Results from 2000 and 2002.

Table 2. Dissolved oxygen and water temperature measurements for Williams Lake at Inlet. March 6, 2002.

Lake depth (m)	Water Temperature (°C)	Dissolved Oxygen (ppm)
0	1.0	9.8
1		8.0
2	3.0	6.0
3		4.2
4	3.0	3.7
5		3.4
6		3.2
7	3.0	3.0
8		1.9
9		0.5
10	3.0	0.4

Table 3. Dissolved oxygen and water temperature measurements for Williams Lake at Boat Dock, March 6, 2002.

Lake depth (m)	Water Temperature (°C)	Dissolved Oxygen (ppm)
0	0	8.2
1	1.5	6.1
2	1.5	5.2
3	2.5	4.5
4	3.0	4.0
5	3.0	3.6
6	3.0	3.5
7	3.0	3.2
8	3.0	2.1

Table 4. Dissolved oxygen and water temperature measurements for Williams Lake at Zmax*, March 6, 2002.

Lake depth (m)	Water Temperature (°C)	Dissolved Oxygen (ppm)
0	3.0	8.2
1		8.0
2	2.9	5.0
3		3.8
4	2.9	3.6
5		3.4
6		3.4
7	2.9	2.8
8		1.0
9		0.4
10		0.2
20	4.0	0.15

* Zmax is the deepest location in body of water.

Inlet/Outlet Flows and Temperature Measurements

The outlet flow consists of a stream formed by spring flow at the base of a landslide deposit nearly 0.4 km away and 120 m (400 ft) below the lake surface (Barnes et al. 1994). The outlet flow ranged from 0.77 to 3.64 cfs (Table 5). The outlet flow measurement taken on May 11, 2002 (0.77 cfs) was repeated on May 12 due to inconsistent flow readings and equipment difficulties. The May 12 outlet flow measurement was 1.34 cfs. The outlet water temperature ranged from 10.3°C to 12.3°C (Table 6 and Figure 2). The minimum and maximum outlet temperatures occurred on April 24 and May 19, 2002 (Figure 2). The outlet flow and temperature data remained relatively uniform throughout the study period. This uniformity in measurements can be contributed to how the water percolates through the dam and that the ground moderates the temperature of the water moving through it.

The inlet water temperature ranged from -0.1°C to 14.5°C (Table 6 and Figure 3). The minimum and maximum inlet temperatures occurred on April 20 and July 11, 2002 (Figure 3). The inlet flow ranged from 1.45 to 2.41 cfs (Table 5).

The IDEQ, using their LakeWatch program to calculate Burns and Carlson TSI values, has determined that no change has occurred in the lakes trophic level from 1992 to 2002. These results could indicate a stabilization of the trophic state of Williams Lake. Further collaboration with DEQ in monitoring of the lakes chlorophyll a, secchi depth, total phosphorous, and total nitrogen is suggested to determine whether further degradation of the trophic state occurs.

The long-term goal for Williams Lake is to determine if any strategies can be employed to make improvements in water quality. Options under consideration include hypolimnetic withdrawal, solar powered aerators and monitoring water quality parameters to track potential improvements post septic system upgrades. The Department is currently collaborating with the Idaho Department of Water Resources, Idaho State University and private landowners to develop a long-term strategy to improve the water quality in Williams Lake.

Spawning and releasing rainbow trout

Fertilized eggs from 21 females and 21 males were incubated at a facility downstream of the lake. The fry were then released in the lake. A cooperator (Ken John) tended the eggs until "button up". Approximately 40,000 fry were released on July 5, 2002. The cooperator described the project as a success in that fry "were all over the lake". This effort was written up in the Williams lake homeowners newsletter as a positive collaboration effort with the Department to maintain a recreational fishery in the lake.

Table 5. Williams Lake inlet and outlet flow measurements.

Flow Station	Sampling Date	Wetted Width (ft)	Average Depth (ft)	Average Velocity (ft/sec)	Flow (cfs)
Inlet	05/06/02	10.8	0.29	0.69	2.16
Inlet	07/21/02	10	0.32	0.75	2.41
Inlet	09/16/02	8.5	0.21	0.81	1.45
Outlet*	05/11/02	5	0.28	0.55	.77
Outlet	07/21/02	9	0.39	1.03	3.64
Outlet	09/16/02	9	0.32	0.8	2.30

* Flow measurements inaccurate due to inconsistent readings and equipment difficulties. Outlet flow measurements were re-taken on May 12. May 12 flow was 1.34 cfs.

Table 6. Comparative minimum, maximum, and average water temperatures (° C) recorded at two locations in Williams Lake during 2002.

Temperature Station	Total Days Recorded	Instantaneous Maximum	Instantaneous Minimum	Mean Daily Maximum	Mean Daily Average	Mean Daily Minimum	Maximum Daily Average	Maximum 7-Day Maximum	Maximum 7-Day Average	Minimum 7-Day Minimum
Inlet 1	178	14.4	0.0	10.0	8.5	6.9	12.8	13.9	12.4	1.0
Inlet 2	178	14.5	-0.1	9.9	8.1	6.6	12.5	13.9	12.1	.60
Outlet 1	177	12.3	10.5	11.6	11.3	11.0	11.5	12.0	11.5	10.6
Outlet 2	177	12.0	10.3	11.5	11.1	10.9	11.4	11.8	11.3	10.5

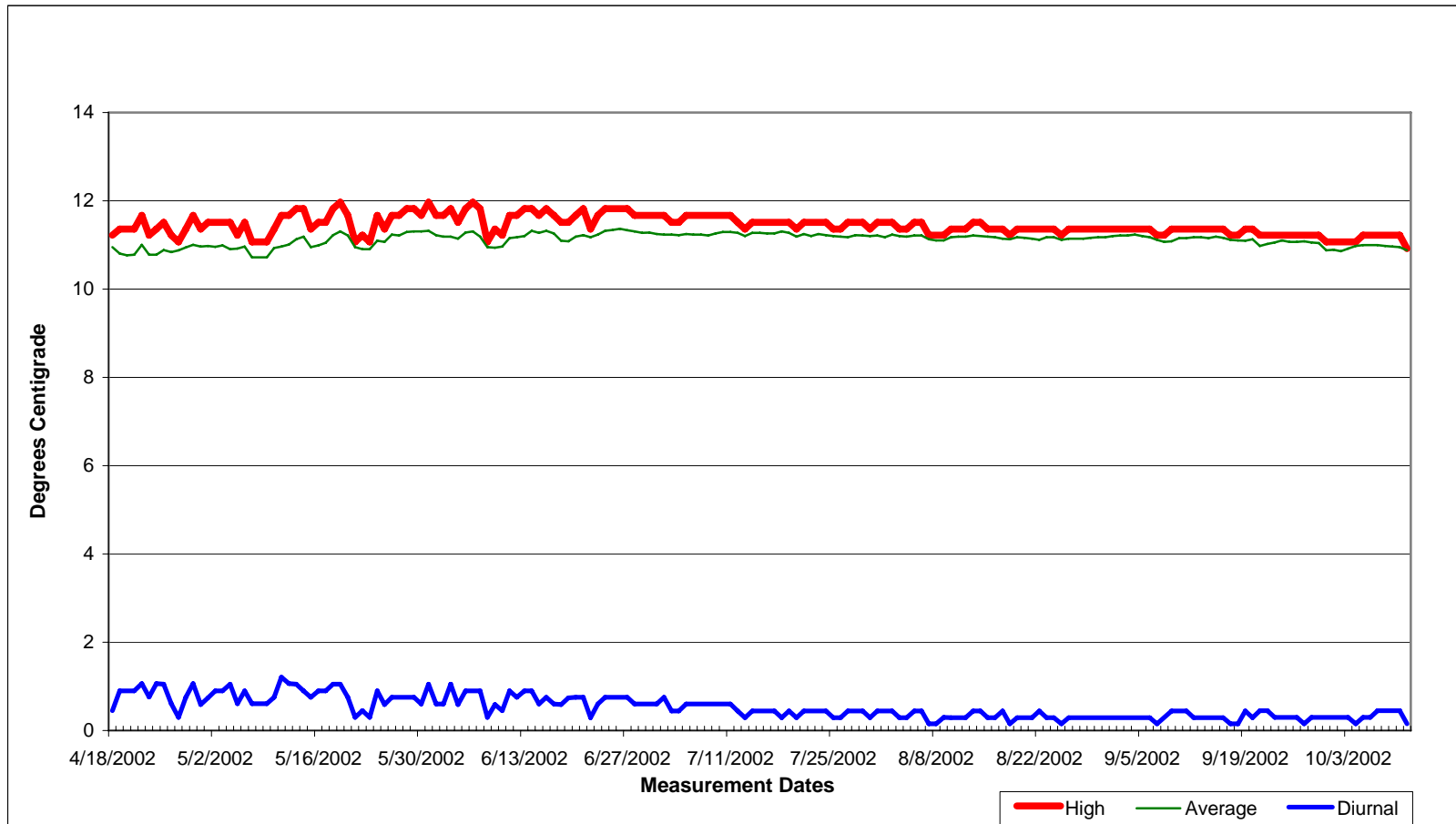


Figure 2. Average, maximum, and daily temperatures recorded for William's Lake outlet from April 18 to October 11, 2002.

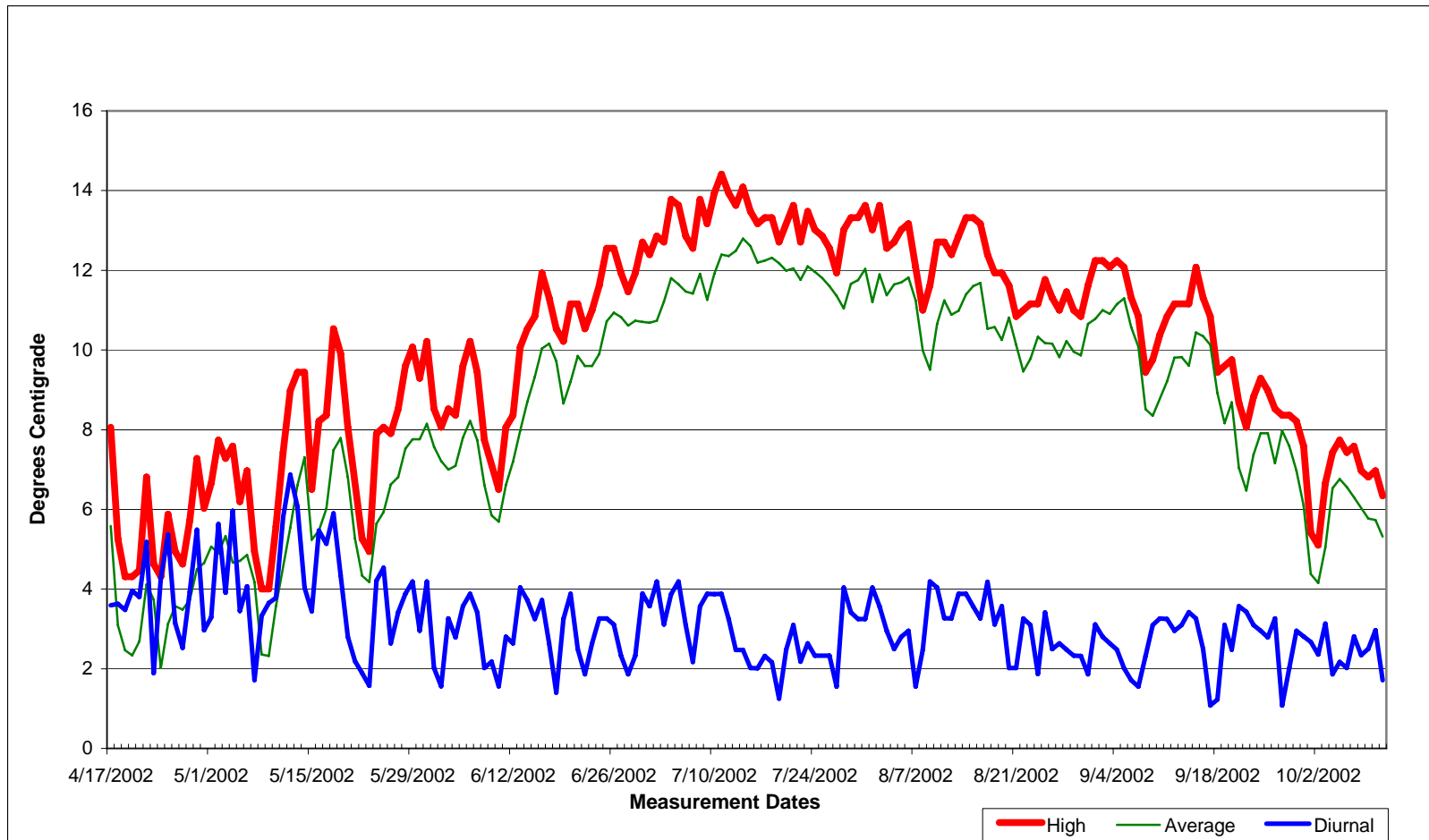


Figure 3. Average, maximum, and daily temperatures recorded for William's Lake inlet from April 17 to October 11, 2002.

RECOMMENDATIONS

1. Continue collaboration with interested parties to develop a long term strategy for improving water quality in Williams Lake.
2. Consultation with a limnological specialist to review hypolimnetic withdrawal as a potential management option.
3. Monitor oxygen and temperatures at specified locations and depths.
4. Continue trapping, spawning and stocking fry as a local involvement program.

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2002 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fishery Management F-71-R-27

Project I: Surveys and Inventories

Subproject I-H: Salmon Region

Job: 7-c¹

Title: Rivers and Stream Investigations
- Wild Trout Redd Counts and Stream
Surveys

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

Wild Trout Population Surveys

During summer 2002, Idaho Department of Fish Game (Department), Bureau of Land Management (BLM), US Forest Service (USFS) and Idaho Department of Environmental Quality (DEQ) sampled 76 tributary streams of the upper Salmon River basin to determine fish species composition, relative abundance and size distribution. Rainbow trout *Onchorynchus mykiss* were found in 71% of the tributary streams surveyed and had total lengths ranging from 30 to 300 mm. Westslope cutthroat trout *O. clarkii lewisi* were found in 56% of the tributary streams surveyed and had total lengths ranging from 55 to 330 mm. Bull trout *Salvelinus confluentus* were found in 29% of the streams surveyed and had total lengths ranging from 48 to 332 mm. Hybrid rainbow/cutthroat trout were found in 12% of the tributary streams surveyed with total lengths ranging from 75 to 230 mm. The following salmonids were found in less than 15% of the surveyed streams: Brook trout *S. fontinalis* 9% (total lengths ranging from 37 to 251 mm) and juvenile Chinook salmon *O. tshawytscha* 13%. Non-game fish were found in 58% of the streams sampled.

Big Springs Creek Rainbow Trout

Project personnel conducted rainbow trout spawning ground surveys on Big Springs Creek (tributary to the Lemhi River) and the Upper Lemhi River to monitor trends in numbers of redds which may reflect benefits of fishing rule changes and habitat improvement projects sponsored by the Upper Salmon Basin Watershed Project. We counted a total of 287 redds on April 22, 2003, which is a decrease from previous years (556 in 2002, 283 in 2001 and 306 in 2000). One reach, the Beleyer ranch (Lemhi River) did demonstrate a significant increase.

Bear Valley Creek Bull Trout

On September 4, 2002, regional staff surveyed a meadow reach of Bear Valley Creek to determine the number of bull trout redds. Twenty-six bull trout redds and one chinook redd were observed.

East Fork Hayden Creek Bull Trout

On September 17, 2002, project staff surveyed a meadow reach of the East Fork of Hayden Creek and counted 33 bull trout redds.

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INTRODUCTION

Wild Trout Population Surveys

During the summer of 2002, the Idaho Department of Fish and Game (Department) and the Salmon and Challis Resource Areas of the Bureau of Land Management (BLM), US Forest Service (USFS), and the Idaho Department of Environmental Quality (DEQ) cooperatively inventoried fish communities in tributary streams of the upper Salmon River basin. Accurate and current information is needed to effectively manage fish stocks, particularly since several endangered fish species (bull trout *Salvelinus confluentus*, chinook salmon *Oncorhynchus tshawytscha*, sockeye salmon *O. nerka*, and steelhead trout *O. mykiss*) are known to inhabit the upper Salmon River basin.

Big Springs Creek Rainbow trout

In 1994 the Department initiated resident rainbow trout redd count surveys on Big Springs Creek (BSC), a tributary to the Upper Lemhi River near Leadore. We established three transect areas in 1997 to monitor long-term resident rainbow trout population trends; two on BSC and one on the Upper Lemhi River. The two sites on BSC include the portion of the creek that flows through the Karl Tyler Ranch and the Darwin Neibaur Ranch. The Upper Lemhi River site includes the section that flows through the Merrill Beyeler Ranch. The redd counts are usually conducted during the last week of April or the first week of May. These efforts are performed to track trends in numbers of redds observed. Theoretically, regulation changes, habitat projects and tributary reconnects should be reflected with increased spawning activity.

Bear Valley Creek Bull trout

2002 marked the first year for monitoring bull trout redd counts in Bear Valley Creek. Bear Valley Creek is a tributary of Hayden Creek which is a high quality bull trout rearing and spawning tributary to the Lemhi River. Bear Valley Creek has a relatively low gradient meadow formed by a landslide. This meadow has a reputation for bull trout spawning and is located about 3.2 km upstream from the confluence of Bear Valley Creek with Hayden Creek.

East Fork Hayden Creek Bull trout

2002 is the first year for monitoring bull trout redds in the East Fork Hayden Creek. East Fork Hayden Creek is a tributary to Hayden Creek in the Lemhi River drainage. East Fork of Hayden Creek has bull trout spawning in a meadow 5 km upstream from the confluence with Hayden Creek.

OBJECTIVE

1. Monitor fish populations in streams to determine species, size, and density information.
2. Evaluate the effects of harvest restrictions and habitat improvement efforts on resident rainbow trout population responses in the Upper Lemhi River and Big Springs Creek.
3. Monitor the number of trout redds in Bear Valley Creek and East Fork Hayden Creek to provide baseline information relative to bull trout recovery.

STUDY AREA AND METHODS

Wild Trout Population Studies

Between May 9 and September 25, 2002, 76 tributary streams of the upper Salmon River basin were surveyed for fish composition, relative abundance, and size distribution. Stream characteristics (temperature, gradient, altitude, and area sampled) were also recorded (Appendix A). Drainage information and map coordinates are found in Appendix B. Overall findings from Wimpey, Morgan, Challis and Bohannon creeks are presented in this report however more detailed information can be found in Murphy and Yanke 2003^{a,b,c,d}.

In the summer of 2002, fish presence and abundance was documented by utilization of backpack electrofishing methodologies. Site locations were selected to encompass a complete sampling coverage of fish communities within a drainage. Site locations in some instances had to be based on adequate access and permission from landowners.

Streams were sampled by electrofishing with use of a Smith Root SR-15 backpack shocking unit. Samplers attempted to catch all sizes of game and non-game fish in transects ranging in size from 80.0 to 722 m in length while moving upstream. A given transect was sampled one or two times or until a 50% reduction in fish numbers was realized. Captured fish were measured (total length TL) to the nearest millimeter, placed in holding pens, and monitored for recovery until all passes were completed. Non-game fish were enumerated only. Once electrofishing was completed, fish were returned to the general area where they were captured.

Density estimates (fish sampled per 100 m²) were calculated by use of Microfish population software (Van Deventer & Platts, 1989). When consecutive passes did not achieve the appropriate reduction (50%), no population estimate for that stream was calculated.

Big Springs Creek

In 1994 the Department initiated informal resident rainbow trout redd count surveys on Big Springs Creek (BSC), a tributary to the upper Lemhi River near Leadore, Idaho. We established three transect areas in 1997 to monitor long-term resident rainbow trout population trends; two on BSC and one on the upper Lemhi River. The two sites on BSC include the portion of the creek that flows through the Karl Tyler Ranch and the Darwin Neibaur Ranch. The upper Lemhi River site includes the section that flows through the Merrill Beyeler Ranch. The redd counts are usually conducted during the last week of April or the first week of May using visual, on the ground, count methods. We conducted resident rainbow trout redd counts on April 22, 2003 (Table 1).

Bear Valley Creek Bull Trout

Area reconnaissance indicated bull trout spawning the first week of September. Redd counts were conducted during the first week of September using visual, on the ground, count methods. We conducted fluvial bull trout redd counts on September 4, 2002.

Table 1. Number of resident rainbow trout redds counted in Big Springs Creek (BSC) and Lemhi River, 1994 through 2003.

Date	Lemhi River Beyeler Ranch ^a	BSC Neibaur Ranch	BSC Tyler Ranch ^b	Total
4/26/94	-	-	-	40 ^c
5/3/95	-	57	-	57
5/3/96	7	32	-	39
4/21-5/3/97	8	44	45	97
5/3/98	18	93	124	235
4/29/99	29	39	71	139
4/20/00	23	160	123	306
4/5/01	2	95	186	283
4/25/02	3	360	193	556
4/22/03	56	128	103	287

^a Habitat improvement project implemented spring 1995.

^b Habitat improvement project implemented spring 1998.

^c Incidental count taken during a Lemhi Model Watershed Project habitat survey, includes all of Big Spring Creek.

UTM coordinates for the start and end of the redd count transect on Bear Valley Creek are: 12 0282998 Easting, 4961730 Northing and 12 0282169 Easting, 4962479 Northing, respectively. The transect for Bear Valley consists of c-channel habitat. To access the site park vehicle in pull out below first cattle guard. Walk East down to stream where c-channel starts and b-channel ends. There are two large boulders on left side of transect, facing upstream, marking the start of the transect. Transect ends at first beaver dam. The beaver dam has been partially washed out however, a large pool remains.

East Fork Hayden Creek Bull Trout

The redd counts are conducted during the third week September using visual, on the ground, count methods. We conducted fluvial bull trout redd counts on September 17, 2002.

UTM coordinates for the start and end of the redd count transect on East Fork of Hayden Creek are: 12 288683 Easting, 4955925 Northing and 12 289197 Easting, 4955050 Northing respectively. The transect for the East Fork consists of c-channel type. Follow East Fork of Hayden Creek road to the bridge which is the start of the transect. Transect ends up stream at large uprooted tree. The end is very difficult to find and photos are needed to determine the correct ending point. In the future the transect could be extended in both directions if needed.

RESULTS AND DISCUSSION

Wild Trout Population Studies

Population estimates for all species of salmonids were calculated based on total sample size (n) of all salmonids per tributary stream (Table 2). Salmonids were found in 75 out of 76 streams surveyed (Table 2). Rainbow trout was the predominant species encountered during our investigations and was found in 71% of the tributary streams surveyed. Rainbow trout had total lengths ranging from 30 to 300 mm. Haynes and Moose creeks had the highest densities of rainbow trout (Table 2). Westslope cutthroat trout were found in 56% of the tributary streams surveyed and had total lengths ranging from 55 to 330 mm. The highest densities of westslope cutthroat trout occurred in Wagonhammer and Pierce creeks (Table 2). Bull trout were found in 29% of the streams surveyed and had total lengths ranging from 48 to 332 mm. Twin and Fourth of July creeks had the highest densities of bull trout (Table 2). The following salmonids were found in less than 15% of the surveyed streams: hybrid rainbow/cutthroat trout were found in 12% of the tributary streams surveyed (total lengths ranging from 75 to 230 mm), brook trout were found in 9% of the tributary streams surveyed (total lengths ranging from 37 to 251 mm). Highest densities of brook trout were found in East Fork of Bohannon Creek and Dahlenega Creek. Juvenile Chinook salmon were found in 13% of the tributary streams surveyed. Indian and Moose creeks had the highest densities of juvenile chinook (Table 2). Fish were not found in the surveyed transect of Big Hat Creek.

Non-game species found included: dace (Various species), longnose dace *Rhinichthys cataractae*, sculpin *Cottus sp.*, mottled sculpin *C. bairdi*, mountain whitefish *Prosopium williamsoni* and redbside shiner *Richardsonius balteatus* (Table 3). Non-game species were found in 58% of tributaries surveyed. Sculpin species were sampled in 44 of the 76 tributaries. The highest densities of sculpins were found in Kenney Creek and Challis Creek. Other non-game species found in less than 5% of tributaries are: dace species (4%), mountain whitefish (3%), redbside shiner (3%), and sucker species (1%).

Table 2. Combined salmonids population estimates, 95% confidence intervals (CI), and species composition for selected streams of the Upper Salmon River Basin in 2003 (L= lower reach, M= middle reach, and U= upper reach).

Stream	Transect	Fish		Fish/ 100m2	Species Composition					
		Sampled (n)	Pop. Estimate (95% CI)		CT	RB	BLT	RBXCT	EBT	CHINOOK
Agency	M	10	**	3.3		90	10			
Anderson	M	20	20(20-22)	11.0	100					
Basin	L	12	**	3.0		75				25
Basin	M	14	**	2.8		79				21
Bear Basin	L	2	**	0.9		100				
Beaver	L	10	**	5.0		60			40	
Big Deer	L	5	**	2.0		80				20
Big Eightmile	L	5	**	1.3		40	40	20		
Big Timber	L	7	**	3.5	100					
Big Timber	L	3	**	0.8	100					
Big Timber	M	18	**	3.2		94	6			
Bohannon	L	16	**	3.4		88			13	
Bohannon	L	4	**	2.2		100				
Bohannon	L	21	**	5.0		100				
Bohannon	L	45	**	9.7		87			13	
Bohannon	L	10	**	3.1		100				
Bohannon	L	19	**	9.3		12				
Bohannon	L	5	**	1.9		5			7	
Bohannon	L	24	33(24-55)	7.8		23				
Bohannon	M	1	**	0.4		1			1	
Bohannon	M	7	**	1.7		6				
Bohannon	U	11	**	2.8			11		1	
Bohannon	U	2	**	0.4		50	50			
Bohannon	U	1	**	0.3		100				
Boulder	M	9	9(9-10)	2.7			100			
Carmen	M	131	143(131-156)	18.7		95				5
Challis	L	56	**	9.3		86				14
Challis	L	34	**	5.7		79				21
Challis	M	12	**	2.3		100				
Challis	M	35	**	5.4		97		3		
Challis	M	4	**	1.2		100				
Challis	U	6	**	4.3	17		33		50	
Colson	L	39	41(39-46)	12.2	44	56				
Colson	L	34	37(34-44)	14.0	100					
Colson	L	18	19(18-24)	6.6	100					
Corn	L	48	49(48-52)	12.4		100				
Corral	M	5	**	1.7	20			80		
Dahlonga	L	20	20(20-22)	4.7	20	55			25	
Darling	M	35	**	26.5	94	6				
Deep	L	37	41(37-50)	19.9	100					
Dump	L	54	54(54-55)			31				69

Table 2. continued

Stream	Transect	Fish			Species Composition					
		Sampled	Pop. Estimate	Fish/ 100m2	CT	RB	BLT	RBXCT	EBT	CHINOOK
		(n)	(95% CI)							
Dump	L	13	**			92				8
Dump	L	50	50(50-52)			46				54
Dump	L	19	19(19-20)			11				89
East Basin	L	9	**	4.5		100				
East Fork Bohannon	L	44	66(44-106)	15.4		55	2		43	
East Fork Bohannon	M	5	**	1.5		100				
East Fork Pierce	L	13	13(13-15)	11.2	100					
East Fork Spring	L	14	**	14.9	14	86				
East Fork Spring	L	19	20(19-25)	7.6	100					
Elk	L	5	**	1.3		60			40	
Fourth of July	M	1	**	0.5				100		
Fourth of July	M	33	35(33-41)	6.6	24		76			
Fourth of July	U	22	22(22-23)	4.8			100			
Freeman	L	63	65(63-70)	11.6	5	95				
Hammerean	L	15	15(15-17)	7.7	100					
Hammerean	L	12	13(12-19)	5.3	100					
Hammerean	M	4	4(4-6)	2.2	100					
Hat	M	14	**	3.6		100				
Hat	M	35	**	9.5		100				
Hat	M	32	160(32-993)	6.9		100				
Hawley	M	4	**	2.0		100				
Haynes	L	10	**	4.4		100				
Haynes	L	46	**	16.5		100				
Haynes	L	78	94(78-114)	25.7		100				
Haynes	M	11	**	7.6		100				
Hoodoo	L	15	**	7.5		93	7			
Hoodoo	L	2	**	0.7		100				
Horse	M	25	26(25-30)	3.3		88	22			
Horse	U	15	15(15-16)	4.2		7	93			
Horse	U	7	7(7-9)	3.7			100			
Hughes	L	28	29(28-33)	5.5		100				
Indian	L	118	119(118-122)	19.5	1	60				39
Iron	L	3	**	1.0		67		33		
Johnson Gulch	M	16	16(16-19)	14.0	100					
Jordan	L	7	**	2.3		100				
Kenney	M	8	**	1.9		100				
Kinnikinic	M	5	**	5.0				100		
Little Sheep	L	22	22(22-24)	15.9	100					
McDevitt	L	28	**	9.4		100				
Mill	L	9	**	2.8		100				
Mill	M	25	**	6.5	12	44				
Moose	L	124	131(124-141)	27.3	3	66				31
Moose	L	35	36(35-40)	12.0	66		34			

Table 2 continued

Stream	Transect	Fish			Species Composition					
		Sampled	Pop. Estimate	Fish/ 100m2	CT	RB	BLT	RBXCT	EBT	CHINOOK
		(n)	(95% CI)							
Moose	M	34	34(35-38)	13.2	100					
Morgan	L	15	**	1.4		53				47
Morgan	L	45	**	8.2		87				23
Morgan	L	1	**	0.2		100				
Morgan	L	13	**	2.0		77				23
Morgan	M	20	**	6.3		100				
Morgan	M	13	13(13-15)	2.5		100				
Morgan	M	4	**	0.9		100				
Morgan	M	34	37(34-44)	7.4		100				
Morgan	M	3	**	0.6		100				
Morgan	M	16	**	3.2		100				
Morgan	M	7	**	2.0		100				
Morgan	M	8	**	1.1		100				
Morgan	M	36	39(36-46)	7.1	3	97				
Morgan	M	18	**	3.1		100				
Morgan	M	2	**	2.9		100				
Nez Perce	L	12	13(12-19)	5.4	100					
North Fork Salmon	U	25	25(25-26)	7.1	100					
Owl	L	17	17(17-19)	6.6		65	6			29
Owl	L	12	**	5.0		83				17
Pierce	M	68	72(68-79)	27.6	40	60				
Pierce	U	54	54(54-55)	27.3	100					
Pine	L	13		13.0		100				
Pine	L	34	36(34-42)	11.7	3	94	3			
Pine	L	28	28(28-30)	7.2	43	57	29			
Pine	M	21	21(21-23)	6.3	71					
Sage	U	13	13(13-14)	12.7	100					
Salzer	L	45	47(45-52)	18.6	100					
Sandy	M	19	**	9.7	100					
Sheep	L	2	**	1.0	50			50		
Sheep	L	11	11(11-12)	2.0	55	27	18			
Slate	L	10	**	5.0		90	10			
Slate	L	9	**	4.5		100				
Smiley	M	2	**	1.0					100	
Smithy	L	8	**	4.1	75	25				
Smithy	M	4	4(4-6)	1.4	100					
South Fork Williams	L	9	**	9.0		11		89		
Spring	L	10	10(10-12)	3.1		100				
Spring	M	11	**	10.0		91				9
Spring	M	18	18(18-19)	7.1	100					
Squaw	L	7	**	3.0		100				
Squaw	L	24	24(24-26)	9.4	50	46	4			
Squaw	L	30	31(30-35)	9.9	13	53	34			

Table 2 continued

Stream	Transect	Fish			Species Composition					
		Sampled	Pop. Estimate	Fish/ 100m2	CT	RB	BLT	RBXCT	EBT	CHINOOK
		(n)	(95% CI)							
Squaw	M	6	**	2.0		33	17	50		
Squaw	M	6	**	1.5		100				
Squaw	M	28	28(28-30)	8.2	79		21			
Stein	L	2	**	2.2	100					
Stein	M	2	**	2.0	100					
Threemile	L	24	24(24-26)	10.3	21	13	67			
Threemile	L	19	20(19-25)	8.6	100					
Threemile	M	3	**	1.5	100					
Tower	L	24	**	24.0		100				
Twin	L	31	32(31-36)	7.6	10		90			
Van Horn	M	5	**	2.1	60	40				
Van Horn	U	29	**	11.1	76	7	17			
Vine	L	28	28(28-30)	17.7	100					
Vine	M	28	28(28-30)	13.1	100					
Wagonhammer	L	19	19(19-20)	13.6	100					
Wagonhammer	M	40	40(40-41)	31.3	100					
Wagonhammer	M	22	22(22-24)	16.4	100					
Wagonhammer	M	89	90(89-93)	37.4	100					
Wagonhammer	M	57	58(57-61)	35.6	100					
Wagonhammer	U	7	7(7-8)	4.2	100					
West Fork Anderson	L	23	23(23-24)	9.9	100					
West Fork Hughes	L	9	9(9-12)	3.6	56	44				
West Fork Morgan	L	7	**	1.7		100				
West Fork Morgan	L	17	20(17-29)	5.0		100				
West Fork Morgan	L	7	**	1.6		100				
West Fork Morgan	M	18	**	4.1	72	28				
West Fork Nez Perce	L	7	10(10-13)	4.9	100					
West Fork Wimpey	L	25	**	15.0	96	4				
Wheat	L	10	10(10-11)	11.9		100				
Wimpey	L	1	**	0.8	100					
Wimpey	L	14	14(14-16)	3.9		100				
Wimpey	L	42	**	14.9		100				
Wimpey	L	22	**	8.1		100				
Wimpey	L	19	**	7.4		100				
Wimpey	L	18	**	7.4		100				
Wimpey	M	2	**	1.3	50	50				
Wimpey	M	21	**	22.8		100				
Wimpey	M	40	41(40-45)	12.2	2	98				
Wimpey	U	4	**	1.1	25	75				
Woods	L	24	25(24-29)	9.4		79	21			
Yellowjacket	M	12	**	2.7		100				

Table 3. Combined non-game fish population estimates, and species composition for selected streams of the Upper Salmon River Basin in 2003 (L= lower reach, M= middle reach, and U= upper reach).

Stream	Transect	Fish		Species Composition						
		Sampled	Fish/ 100m2	SCU	DAC	SUC	MTW	MSC	RSS	LND
Agency	M	15	15.0	100						
Agency	M	5	1.7	100						
Anderson	M	38	20.9	100						
Basin	L	9	3.0	100						
Basin	M	7	1.8	100						
Beaver	L	9	4.5	100						
Big Eightmile	L	9	2.3	100						
Big Timber	L	4	2.0	100						
Big Timber	L	13	3.3	100						
Big Timber	M	43	7.8	88	2		9			
Bohannon	L	2	1.1		100					
Bohannon	L	43	10.3					100		
Bohannon	L	47	10.1					100		
Bohannon	L	14	6.9	100						
Bohannon	L	68	22.1	100						
Bohannon	M	11	4.0	100						
Bohannon	M	35	8.6	100						
Bohannon	U	2	0.6	100						
Challis	L	82	16.0	99		1				
Challis	L	105	22.2	3	6	90			1	
Challis	M	76	14.8	100						
Challis	M	195	30.4	100						
Challis	M	35	10.4	100						
Corral	M	9	3.0	100						
Corral	M	1	1.1	100						
Dahlonga	L	11	2.6	100						
East Basin	L	2	1.0	100						
East Fork Bohannon	L	99	34.6	100						
Eighteenmile	L	9	4.5	100						
Elk	L	4	1.0	75			25			
Freeman	L	40	7.4	100						
Hawley	M	8	4.0	100						
Haynes	L	11	4.8	100						
Haynes	L	85	30.6	100						
Haynes	L	119	39.1	100						
Haynes	M	105	72.4	100						
Hoodoo	L	1	0.5	100						
Hoodoo	L	8	2.7	100						
Hughes	L	21	4.1	100						
Iron	L	8	2.7	100						
Jordan	L	2	0.7	100						

Table 3. continued

Stream	Transect	Fish		Species Composition						
		Sampled	Fish/ 100m2	SCU	DAC	SUC	MTW	MSC	RSS	LND
Kenney	M	260	62.8	100						
McDevitt	L	1	0.3					100		
Mill	L	16	4.9	100						
Mill	M	60	15.6	100						
Morgan	L	13	2.3	100						
Morgan	L	36	7.6	100						
Morgan	L	13	2.4	15						85
Morgan	L	44	8.8	89					4	7
Morgan	M	19	3.6	100						
Morgan	M	10	2.3	100						
Morgan	M	11	2.4	100						
Morgan	M	24	4.7	100						
Morgan	M	26	5.3	100						
Morgan	M	12	3.5	100						
Morgan	M	54	7.5	100						
Morgan	M	64	12.6	100						
Morgan	M	26	4.5	100						
Morgan	M	1	1.3	100						
Nez Perce	L	20	9.0	100						
North Fork Salmon	U	16	4.5	100						
Owl	L	2	1.0	100						
Pierce	M	50	20.3	100						
Pierce	U	15	7.6	100						
Sheep	L	4	2.0	100						
Sheep	L	20	3.6	100						
Smiley	M	12	6.0	100						
Squaw	M	9	3.0	100						
Squaw	M	5	1.3	100						
Stein	L	1	1.1	100						
Threemile	L	27	11.6	100						
Threemile	L	6	2.7	100						
Threemile	M	9	4.4	100						
Tower	L	4	4.0	100						
Twin	L	20	4.9	100						
Van Horn	M	12	5.0	100						
West Fork Anderson	L	13	5.6	100						
West Fork Hughes	L	10	4.0	100						
West Fork Morgan	L	20	5.0	100						
West Fork Morgan	L	38	11.2	100						
West Fork Morgan	M	4	0.9	100						
West Fork Nez Perce	L	7	4.9	100						
West Fork Wimpey	L	26	15.6	100						

Table 3. continued

Stream	Transect	Fish		Species Composition						
		Sampled	Fish/ 100m2	SCU	DAC	SUC	MTW	MSC	RSS	LND
Wimpey	L	189	52.8	100						
Wimpey	L	55	19.5	98			2			
Wimpey	L	50	18.4	30			58			12
Wimpey	L	129	50.4	100						
Wimpey	L	5	2.1	80			20			
Wimpey	M	169	51.5	100						
Yellowjacket	M	2	0.5	100						

SCU = sculpin, DAC = dace, SUC = suckers, MTW = mountain whitefish, MSC = mottled sculpin,
 RSS=redside shiner, LND=longnose dace

More detailed information on stream sites is located in Appendices A. and B. Appendix A lists stream sites surveyed, dates of sampling, and transect measurements. Appendix B lists streams surveyed, primary drainage, secondary drainage, UTM zone, and UTM coordinates.

Big Springs Creek

We observed a total of 287 redds on Big Springs Creek (BSC) and upper Lemhi River. One hundred and twenty-eight redds were counted on the Neibaur Ranch while 103 were observed on the Tyler Ranch. Fifty-six redds were counted on the Beyeler Ranch (upper Lemhi River) (Figure 1). While the total number of redds observed in 2003 was less than what we observed last year (556; Table 1), the number of redds counted on the Beyeler Ranch (upper Lemhi River) in 2003 (56) was fifty-three more than 2002 (Curet et al. 2001).

The Neibaur Ranch reach had a fencing project of 2.5 km completed during February and March of 2003. Variable numbers of redds on the Neibaur Ranch may be a ramification of lack of stability in part due to habitat degradation. This should improve over time as the effects of the new fencing project are realized. The BSC transect within Tyler Ranch boundaries, with an exclusionary fencing project completed in 1998, contained fewer redds in 2003 than the previous year. We believe the general increase over time and improving stability of the habitat will result in continued upward trends in redd numbers in the future. The upper Lemhi Beyeler Ranch reach is currently under a reasonable riparian pasture management program and the fifty-six redds were a historic high. Reviewing redd counts over time suggests there may be alternate year spawning occurring. Of note, this year the steelhead run was earlier than normal to area hatcheries and we suspect the peak for rainbow trout redds was missed and some amount of redd degradation may have resulted in lower counts for the Neibaur and Tyler reaches. These sites will continue to be monitored and trends evaluated in the rainbow trout population in future years.

Habitat changes will be monitored over the next 10 years to document improvements in the riparian areas. Snorkel data will be reviewed to determine if a change in size structure and species composition has occurred.

Bear Valley Creek Bull Trout

On September 4, 2002 Idaho Department of Fish and Game performed bull trout redd counts on Bear Valley Creek. A new transect was established for future redd counts. Photographs, written description, and G.P.S. coordinates were recorded for both start and finish of transects.

Twenty-six bull trout redds were observed. The majority of redds were still in progress having both the female and male present. One chinook redd was observed with a two ocean female still attending the site. The population of bull trout, which uses Bear Valley Creek for spawning, appears to be a fluvial population. The estimated size of the bull trout ranged from 10 inches to 25 inches. Anglers reported catching bull trout fish up to 27 inches long in Bear Valley Creek. These fish may be spending part of their lives in the Main stem Salmon and Lemhi Rivers, then, run up Hayden Creek to the meadow on Bear Valley Creek to spawn.

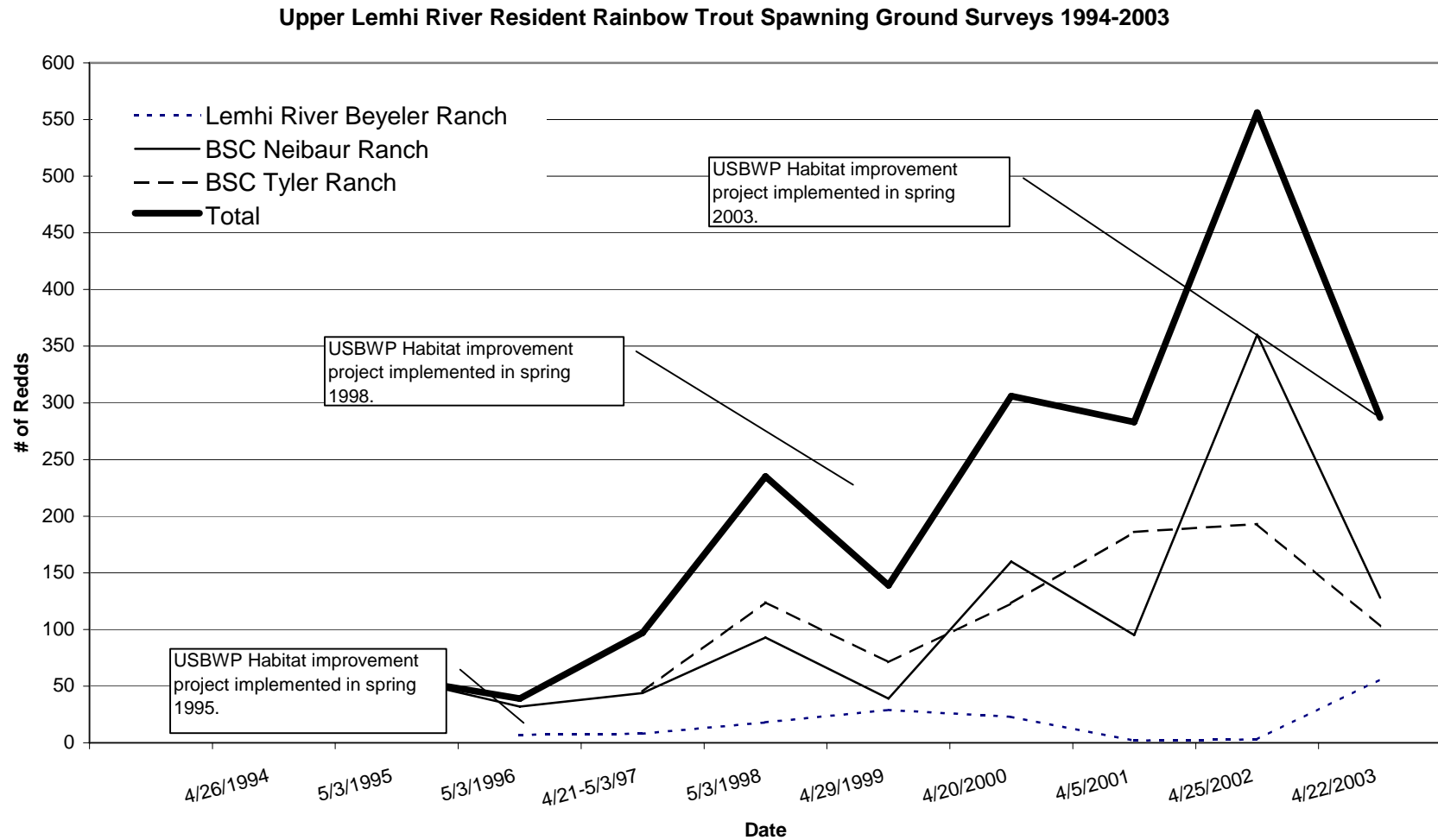


Figure 1. - Upper Lemhi Resident Rainbow Trout Spawning Ground Surveys 1994 – 2003.

East Fork Hayden Creek Bull Trout

On September 17, 2002 the Department performed bull trout redd counts on the East Fork of Hayden Creek. A new transect was established for future redd counts. Photographs, written description, and GPS coordinates were recorded for both start and finish of transects.

We observed 33 bull trout redds in East Fork Hayden Creek. This population appears to be a resident population with individuals being significantly smaller than the Bear Valley Creek population. Fish observed were estimated to be eight to fourteen inches in length.

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APPENDICES

Appendix A. Site characteristics of streams surveyed in the Upper Salmon River Basin during the summer of 2002

Stream	Transect	Sample date	Channel type	Water temperature (°C)	Transect length (m)	Transect mean width (m)	Transect area (m)
Adams	L	6/21/2002	C	22	47.4	5.7	270
Adams	U	6/21/2002	C	19.5	74	4.8	355
Agency	M	9/18/2002		11.8	100	1	100
Agency	M	9/23/2002			100	3	300
Alder	Alder Creek	7/25/2002	C	16	58.8	6.1	359
Anderson	M	6/4/2002	B	7	100	1.82	182
Basin	L	9/23/2002		12.6	100	3	300
Basin	M	9/23/2002		8.3	100	4	400
Beagle	M	7/17/2002		14.4	134	2.87	385
Bear Basin	L	7/2/2002		11	100	2.2	220
Beaver	L	9/23/2002		10.7	100	2	200
Big Deer	L	8/25/2002		15.9	100	2	200
Big Eightmile	L	9/18/2002		8.9	100	4	400
Big Hat	U	7/13/2002		15	100	2.6	260
Big Springs	L	7/24/2002	C	15	103.5	5.26	544
Big Springs	M	7/24/2002	C	15	61	5.18	316
Big Springs	U	7/24/2002	C	15	50.3	2.65	133
Big Timber	L	9/18/2002		12.8	100	4	400
Big Timber	L	9/25/2002		10.1	100	2	200
Big Timber	M	5/31/2002		9	100	5.54	554
Big Timber	M	9/11/2002	B	7.8	100	3.66	366
Big Timber	M	9/12/2002	B		100	4.27	427
Big Timber	M	9/12/2002	B	8.1	100	4.27	427
Big Timber	M	9/12/2002	B	10.6	100	4.27	427
Big Timber	M	9/12/2002	C	10.6	150	7.62	1143
Big Timber	U	9/11/2002	B	5.8	200	1.83	366
Big Timber Creek Fk	L	9/11/2002		5	50	0.762	38.1
Birdseye	L	8/1/2002	C	12.2	91.8	1.79	164
Blackbird	L	9/25/2002		9.9	100	2	200
Blackeagle	L	7/19/2002		12.2	55.8	2.3	128
Bohannon	L	6/7/2002		10	100	3.22	322
Bohannon	L	6/7/2002		11	110	3.8	418
Bohannon	L	6/10/2002		11	100	1.8	180
Bohannon	L	6/11/2002		6	100	4.66	466
Bohannon	L	6/11/2002		10	100	3.08	308
Bohannon	L	6/12/2002		8	100	4.46	446
Bohannon	L	6/17/2002		13	100	2.7	270
Bohannon	L	7/25/2002		11	100	2.04	204
Bohannon	M	6/13/2002		8	100	4.06	406
Bohannon	M	6/17/2002		10	90	3.04	273.6
Bohannon	U	6/12/2002		7	100	1.2	120
Bohannon	U	6/12/2002		14	100	3.1	310
Bohannon	U	6/17/2002		8	110	6.22	684

Appendix A. Continued.

Stream	Transect	Sample date	Channel type	Water temperature (°C)	Transect length (m)	Transect mean width (m)	Transect area (m)
Bohannon	U	7/25/2002		10	100	3.94	394
Boulder	M	7/3/2002		9.5	100	3.36	336
Buckhorn	L	7/23/2002	A	16.7	45.2	1.19	54
Cabin	L	9/11/2002	B	5	100	1.52	152
Cabin	M	5/22/2002	B		100	4.942	494
Camas	U	8/8/2002	B	9.4	215.2	2.93	631
Camp	L	7/25/2002	A	10	56.4	2.55	144
Carmen	M	7/31/2002		16	100	6.64	664
Challis	L	9/13/2002		14	100	4.74	474
Challis	L	9/13/2002		15	100	5.14	514
Challis	M	7/15/2002		18	100	3.36	336
Challis	M	9/12/2002		12	110	5.84	642
Challis	M	9/12/2002		16.5	100	5.12	512
Challis	U	7/15/2002		10	100	1.38	138
Clear	L	7/3/2002			100	6.98	698
Climb	L	9/11/2002		5.6	400	1.07	428
Colson	L	8/5/2002		9	100	2.74	274
Colson	L	8/5/2002		13	100	3.1932	319
Colson	L	8/12/2002		11	100	2.42	242
Colson	M	8/5/2002		8	50	0	0
Corn	L	7/16/2002		12.5	100	3.88	388
Corral	M	7/11/2002		21	100	3.02	302
Corral	M	7/11/2002		23	100	0.92	92
Dahlonge	L	6/23/2002	B	9.2	100	4.24	424
Darling	M	7/12/2002		19	100	1.32	132
Deep	L	7/31/2002	B	9	100	1.86	186
Dump	L	5/16/2002		7	100	1.76	176
Dump	L	5/16/2002		7	100	2.44	244
Dump	L	8/21/2002		12	100	1.66	166
Dump	L	8/21/2002		12	110	2.06	227
East Basin	L	9/23/2002		12.1	100	2	200
East Fork Bohannon	L	7/24/2002		12	100	2.86	286
East Fork Bohannon	M	6/13/2002		6	100	3.3	330
East Fork Bohannon	U	7/25/2002		8	100	3.04	304
East Fork Pierce	L	7/11/2002			100	1.16	116
East Fork Spring	L	7/8/2002		12	100	2.5	250
East Fork Spring	L	7/8/2002	B	12	50	1.88	94
Eighteenmile	L	9/18/2002		7.6	100	2	200
Elk	L	9/23/2002		8.9	100	4	400
Falls	M	9/11/2002		6.1	100	3.05	305
Flume	L	8/2/2002	B	9.4	130.6	1.88	246
Fly	L	8/8/2002	A	8.9	78.8	2.69	212
Fourth of July	M	7/25/2002		8	100	5	500
Fourth of July	M	9/23/2002		8.4	100	2	200

Appendix A. Continued.

Stream	Transect	Sample date	Channel type	Water temperature (°C)	Transect length (m)	Transect mean width (m)	Transect area (m)
Fourth of July	U	7/25/2002		7	100	4.56	456
Freeman	L	7/31/2002		12	100	5.42	542
Garden	L	7/2/2002		11.5	100	2.28	228
Hammerean	L	6/25/2002	B	8	100	2.28	228
Hammerean	L	6/25/2002	B	9.9	100	1.96	196
Hammerean	M	6/27/2002	B	7	80	2.3	184
Hannah Slough	Hannah Slough	7/25/2002	C	15	82.7	8.4	695
Hat	M	7/13/2002		19	80	4.8	384
Hat	M	7/16/2002		15	100	4.66	466
Hat	M	7/16/2002		17	90	4.08	367
Hawley	M	9/18/2002		12.8	100	2	200
Haynes	L	6/19/2002		12	100	3.04	304
Haynes	L	6/20/2002		8	100	2.28	228
Haynes	L	6/20/2002		13	100	2.78	278
Haynes	M	6/20/2002		13	40	3.625	145
Hoodoo	L	9/23/2002		12.2	100	3	300
Hoodoo	L	9/24/2002		13.1	100	2	200
Hoodoo	M	7/19/2002	B	12.2	155	5.89	913
Hoodoo	U	7/24/2002	B	6.7	60.5	2.12	128
Horse	M	8/6/2002		14	100	7.26	726
Horse	U	8/6/2002	B	7	100	1.9	190
Horse	U	8/7/2002		7	100	3.6	360
Hot Spring	L	7/25/2002	C	21	40.8	6.22	254
Hot Spring	M	7/25/2002	C	18	93.7	5.72	536
Hot Spring	U	7/25/2002	C	15	57.7	5.78	334
Hughes	L	7/17/2002	B	11	100	5.1	510
Indian	L	8/29/2002	B	10	100	3.7	370
Iron	L	9/23/2002		12.2	100	3	300
J Fell	L	8/8/2002	B	6.1	101.5	3.45	350
Johnson	M	6/27/2002	B	13.5	100	1.14	114
Jordan	L	9/24/2002		11.3	100	3	300
Kenney	M	6/25/2002		9	90	4.6	414
Kinnikinic	M	9/24/2002		8.6	100	1	100
Lake	L	7/25/2002	A	12.8	46.5	3.21	149
Lake	L	9/11/2002	B		100	1.07	107
Lemhi	L	7/15/2002	B	16	75.9	16.58	1258
Lemhi	M	7/15/2002	B	16	131.2	37.9	4972
Lemhi	U	7/15/2002	B	16	69	14.26	984
Liberty	L	8/21/2002	B	8.3	112.5	2.37	267
Little Sheep	L	7/30/2002	B	7	100	1.38	138
Little Spring	M	7/13/2002		19	95.7	5.78	553
Little Spring	M	7/13/2002	C	19	61	7.64	466
Little White Goat	L	8/6/2002	B	12.2	52.8	1.49	79

Appendix A. Continued.

Stream	Transect	Sample date	Channel type	Water temperature (°C)	Transect length (m)	Transect mean width (m)	Transect area (m)
Little Woodtick	L	7/30/2002	A	11.1	53.6	1.29	69
Lost Springs	L	7/29/2002	B	17.8	161.3	1.25	202
Martindale	L	8/20/2002	A	8.9	43.3	2.33	101
Martindale	L	8/20/2002	AB	9.4	92	1.68	155
McDevitt	L	7/30/2002	C	15	130	2.3	299
Meadow	L	7/25/2002	B	15.6	82.5	1.77	146
Melville	L	8/21/2002	B	9.4	85.6	1.91	163
Mill	L	7/14/2002		16	100	3.26	326
Mill	M	9/12/2002		15	100	3.84	384
Moose	L	8/21/2002	B	12	100	4.54	454
Moose	L	8/28/2002	B	8	100	2.92	292
Moose	M	8/28/2002	B	6	100	2.58	258
Morgan	L	7/3/2002		14	90	6.18	556.2
Morgan	L	7/12/2002		16	100	4.76	476
Morgan	L	7/12/2002		17	100	5	500
Morgan	L	7/15/2002		19	100	5.5	550
Morgan	M	7/1/2002		13	100	7.22	722
Morgan	M	7/1/2002		14	100	5.12	512
Morgan	M	7/1/2002		19	100	5.3	530
Morgan	M	7/1/2002		21	100	4.42	442
Morgan	M	7/2/2002		11	100	5.06	506
Morgan	M	7/2/2002		18	100	5.78	578
Morgan	M	7/3/2002		16	100	4.94	494
Morgan	M	7/10/2002		21	100	3.44	344
Morgan	M	7/11/2002		15	100	4.62	462
Morgan	M	7/11/2002		19	50	6.4	320
Morgan	M	7/14/2002		14	100	0.8	80
Morgan	M	7/17/2002			100	0.7	70
Nez Perce	L	6/6/2002		6.4	100	2.22	222
North Fork Salmon	U	7/10/2002		12.5	100	3.52	352
Owl	L	7/16/2002	B	16	100	1.82	182
Owl	L	9/25/2002		16.5	100	2	200
Pierce	M	7/11/2002		11	100	2.46	246
Pierce	U	7/11/2002			100	1.98	198
Pine	L	7/9/2002	B	12.7	100	3.88	388
Pine	L	7/9/2002	B	14	100	2.9	290
Pine	L	9/25/2002		10.3	100	1	100
Pine	M	7/9/2002	B	9	100	3.32	332
Pole	M	8/21/2002	B	5.6	40	2.71	108
Prospect	L	9/11/2002		5	200	2.44	488
Rams	L	8/1/2002	B	7.8	134.9	2	270
Rams Creek Trib		8/1/2002		8.3	62	1.34	83
Rocky	L	8/8/2002	B	7.2	100	1.52	152
Sage	U	7/2/2002		12	100	1.02	102

Appendix A. Continued.

Stream	Transect	Sample date	Channel type	Water temperature (°C)	Transect length (m)	Transect mean width (m)	Transect area (m)
Salzer	L	7/30/2002	B	10.5	100	2.42	242
Sandy	M	6/21/2002	B		38.71	5.0275	195
Sheep	L	8/1/2002	B	9	100	5.5	550
Sheep	L	8/6/2002	A	7.8	54.1	1.58	85
Sheep	L	9/25/2002		11.2	100	2	200
Sheldon	L	8/7/2002	B	5.6	50	1.65	83
Short	L	9/12/2002		11.1	400	2.5	1000
Shovel	L	7/17/2002		14.4	95	2.83	269
Slate	L	7/26/2002	B	9	36.8	4.44	163
Slate	L	7/26/2002	B	10	34.1	3.78	129
Slate	L	9/24/2002		11.2	100	2	200
Slate	L	9/24/2002		12.7	100	2	200
Smiley	M	9/23/2002		9	100	2	200
Smithy	L	6/23/2002	B	8.8	100	1.94	194
Smithy	M	6/23/2002	B	10.3	100	2.8	280
South Fork Camas	L	8/7/2002	B	8.9	203.5	3.88	790
South Fork Williams	L	9/25/2002		11	100	1	100
Spider	L	8/8/2002	A	8.9	39.5	2.24	88
Spring	L	7/8/2002	B	11.6	100	3.24	324
Spring	M	7/8/2002	B	10.7	100	2.54	254
Spring	M	9/25/2002		14.4	100	1	100
Squaw	L	8/1/2002	B	8	100	3.04	304
Squaw	L	8/1/2002	B	10	100	2.36	236
Squaw	L	8/29/2002	B	7	100	2.54	254
Squaw	M	8/1/2002	B	8	100	3.4	340
Squaw	M	9/24/2002		6.3	100	3	300
Squaw	M	9/24/2002		9.6	100	4	400
Squirrel	L	9/12/2002		5	600	1.83	1098
Stein	L	7/1/2002	B	10	100	0.92	92
Stein	M	7/1/2002	B	10.7	100	1	100
Threemile	L	6/4/2002	B	8.5	100	2.32	232
Threemile	L	6/13/2002	B	6.4	100	2.22	222
Threemile	M	6/13/2002	B	6	100	2.06	206
Tower	L	9/25/2002		12.1	100	1	100
Trail	L	7/18/2002	A	13.3	88.8	13.3	1181
Trail	L	9/11/2002	B		100	0.46	46
Trail	L	9/11/2002	B		100	2.13	213
Twin	L	8/28/2002	B	6	100	4.1	410
Van Horn	M	7/2/2002		14	100	2.42	242
Van Horn	U	6/30/2002		11	100	2.62	262
Vine	L	6/25/2002	B	12.7	100	1.58	158
Vine	M	6/25/2002	B	10	100	2.14	214
Wagonhammer	L	5/13/2002		10.8	100	1.4	140
Wagonhammer	M	5/9/2002		6	100	1.6	160

Appendix A. Continued.

Stream	Transect	Sample date	Channel type	Water temperature (°C)	Transect length (m)	Transect mean width (m)	Transect area (m)
Wagonhammer	M	5/9/2002		7.8	100	2.38	238
Wagonhammer	M	5/13/2002		5	100	1.34	134
Wagonhammer	M	5/13/2002		6	100	1.28	128
Wagonhammer	U	5/9/2002		1.5	100	1.68	168
West Fork Anderson	L	6/6/2002	B	8.9	100	2.32	232
West Fork Camas	U	8/22/2002	A	7.2	81.5	2.23	182
West Fork Hughes	L	7/17/2002	B	12	100	2.52	252
West Fork Morgan	L	6/26/2002		14	100	4.04	404
West Fork Morgan	L	6/26/2002		17	110	3.88	427
West Fork Morgan	L	6/27/2002		14	100	3.4	340
West Fork Morgan	M	6/27/2002		17	100	4.4	440
West Fork Nez Perce	L	6/6/2002		7.7	100	1.44	144
West Fork Wimpey	L	7/29/2002		14	80	2.08	166
West Fork Wimpey	U	7/27/2002		6	80	2.58	206
West Fork Wimpey	U	7/27/2002		11	100	2.44	244
West Fk Yellowjacket	L	7/18/2002	B	9.4	98.6	4.53	447
Wheat	L	7/16/2002	A	15	50	1.68	84
White Goat	L	8/6/2002	B	11.7	58.5	2.41	141
Wimpey	L	7/26/2002		12	80	3.2	256
Wimpey	L	7/26/2002	BC	12	55	4.94	272
Wimpey	L	7/29/2002		10	70	1.84	129
Wimpey	L	7/30/2002		15	100	3.58	358
Wimpey	L	7/30/2002		16	100	2.42	242
Wimpey	L	7/30/2002		16	100	2.82	282
Wimpey	M	7/26/2002		13	100	3.28	328
Wimpey	M	7/31/2002		12	100	1.56	156
Wimpey	M	7/31/2002		16	100	0.92	92
Wimpey	U	6/19/2002		5	100	3.66	366
Woods	L	8/7/2002	B	7	100	2.56	256
Woodtick	L	7/30/2002	A	10.6	53.3	4.3	229
Yellowjacket	L	7/23/2002	B		282	10.45	2947
Yellowjacket	M	7/18/2002	B	12.2	95	4.89	465
Yellowjacket	M	9/24/2002		11.2	110	4	440
Yellowjacket	U	7/24/2002	B	11.7	113.4	3.87	439

Appendix B. Upper Salmon River Basin (Idaho) tributary streams surveyed during the summer of 2002.

Stream	SUBBASIN	UTM		
		Zone	Easting	Northing
Adams	SALMON-NORTH FORK TO HEADWATERS	12	271726	5005316
Adams	SALMON-NORTH FORK TO HEADWATERS	12	271560	5005182
Agency	LEMHI RIVER	12	298537	4980640
Agency	LEMHI RIVER	12	298537	4980640
Alder	SALMON-NORTH FORK TO HEADWATERS	11	723461	4938597
Anderson	NORTH FORK SALMON	12	271921	5050043
Basin	SALMON-NORTH FORK TO HEADWATERS	11	674219	4903314
Basin	SALMON-NORTH FORK TO HEADWATERS	11	672720	4904680
Beagle	MIDDLE FORK SALMON	11	699770	4985053
Bear Basin	SALMON-HORSE CREEK TO NORTH FORK	11	683414	5022702
Beaver	SALMON-NORTH FORK TO HEADWATERS	11	674330	4862636
Big Deer	SALMON-HORSE CREEK TO NORTH FORK	11	711020	5005887
Big Eightmile	LEMHI RIVER	12	303454	4951647
Big Hat	SALMON-NORTH FORK TO HEADWATERS	11	727751	4966593
Big Springs	PAHSIMEROI RIVER	12	263073	4945223
Big Springs	PAHSIMEROI RIVER	12	268587	4940014
Big Springs	PAHSIMEROI RIVER	12	268936	4939203
Big Timber	LEMHI RIVER	12	311631	4947882
Big Timber	LEMHI RIVER	11	307237	4933150
Big Timber	LEMHI RIVER	12	304570	4930307
Big Timber	LEMHI RIVER	12	306326	4932283
Big Timber	LEMHI RIVER	12	305152	4931153
Big Timber	LEMHI RIVER	12	302579	4929083
Big Timber	LEMHI RIVER	12	300176	4930247
Big Timber	LEMHI RIVER	12	312286	4949757
Big Timber	LEMHI RIVER	12	312286	4949757
Big Timber Creek Fk	LEMHI RIVER	12	301919	4929348
Birdseye	MIDDLE FORK SALMON	11	706205	4977981
Blackbird	SALMON-HORSE CREEK TO NORTH FORK	11	715456	4995242
Blackeagle	MIDDLE FORK SALMON	11	691904	4984881
Bohannon	LEMHI RIVER	12	284103	4998943
Bohannon	LEMHI RIVER	12	284997	4999332
Bohannon	LEMHI RIVER	12	286296	4999299
Bohannon	LEMHI RIVER	12	286365	5001132
Bohannon	LEMHI RIVER	12	287733	5002965
Bohannon	LEMHI RIVER	12	287795	5004798
Bohannon	LEMHI RIVER	12	287811	5004820
Bohannon	LEMHI RIVER	12	289177	5006620
Bohannon	LEMHI RIVER	12	285006	4999342
Bohannon	LEMHI RIVER	12	287671	5001110
Bohannon	LEMHI RIVER	12	287795	5004798
Bohannon	LEMHI RIVER	12	289161	5006610
Bohannon	LEMHI RIVER	12	286674	5002097

Appendix B. Continued

Stream	SUBBASIN	UTM		
		Zone	Easting	Northing
Bohannon	LEMHI RIVER	12	286975	5002552
Boulder	SALMON-HORSE CREEK TO NORTH FORK	11	706404	5033874
Buckhorn	MIDDLE FORK SALMON	11	690778	4977750
Cabin	LEMHI RIVER	12	303329	4929082
Cabin	SALMON-NORTH FORK TO HEADWATERS	12	263102	4973422
Camas	MIDDLE FORK SALMON	11	701559	4950788
Camp	MIDDLE FORK SALMON	11	689693	4979423
Carmen	SALMON-NORTH FORK TO HEADWATERS	12	278261	5016520
Challis	SALMON-NORTH FORK TO HEADWATERS	11	721716	4938125
Challis	SALMON-NORTH FORK TO HEADWATERS	11	718530	4937872
Challis	SALMON-NORTH FORK TO HEADWATERS	11	716202	4937618
Challis	SALMON-NORTH FORK TO HEADWATERS	11	713258	4938788
Challis	SALMON-NORTH FORK TO HEADWATERS	11	710548	4938907
Challis	SALMON-NORTH FORK TO HEADWATERS	11	701715	4930739
Clear	SALMON-HORSE CREEK TO NORTH FORK	11	707400	5018471
Climb	LEMHI RIVER	12	300049	4930176
Colson	SALMON-HORSE CREEK TO NORTH FORK	11	693196	5020605
Colson	SALMON-HORSE CREEK TO NORTH FORK	11	693237	5021661
Colson	SALMON-HORSE CREEK TO NORTH FORK	11	693318	5022332
Colson	SALMON-HORSE CREEK TO NORTH FORK	11	698095	5024648
Corn	SALMON-HORSE CREEK TO NORTH FORK	11	681411	5026152
Corral	SALMON-NORTH FORK TO HEADWATERS	11	718777	4962830
Corral	SALMON-NORTH FORK TO HEADWATERS	11	719066	4963113
Dahlonge	NORTH FORK SALMON	12	273466	5048606
Darling	SALMON-NORTH FORK TO HEADWATERS	11	714755	4943818
Deep	NORTH FORK SALMON	12	268796	5052985
Dump	SALMON-HORSE CREEK TO NORTH FORK	11	729996	5029322
Dump	SALMON-HORSE CREEK TO NORTH FORK	11	729996	5029322
Dump	SALMON-HORSE CREEK TO NORTH FORK	11	730118	5029098
Dump	SALMON-HORSE CREEK TO NORTH FORK	11	730118	5029098
East Basin	SALMON-NORTH FORK TO HEADWATERS	11	671642	4904657
East Fork Bohannon	LEMHI RIVER	12	287740	5002943
East Fork Bohannon	LEMHI RIVER	12	289046	5002921
East Fork Bohannon	LEMHI RIVER	12	290359	5002889
East Fork Pierce	NORTH FORK SALMON	12	270661	5057445
East Fork Spring	SALMON-HORSE CREEK TO NORTH FORK	11	713537	5032980
East Fork Spring	SALMON-HORSE CREEK TO NORTH FORK	11	713679	5034951
Eighteenmile	LEMHI RIVER	12	320390	4957246
Elk	SALMON-NORTH FORK TO HEADWATERS	11	654318	4905479
Falls	LEMHI RIVER	12	300359	4929068
Flume	MIDDLE FORK SALMON	11	695343	4965169
Fly	MIDDLE FORK SALMON	11	698258	4952975
Fourth of July	SALMON-NORTH FORK TO HEADWATERS	12	276432	5032797
Fourth of July	SALMON-NORTH FORK TO HEADWATERS	12	279135	5033813

Appendix B. Continued.

Stream	SUBBASIN	UTM		
		Zone	Easting	Northing
Fourth of July	SALMON-NORTH FORK TO HEADWATERS	11	679715	4878680
Freeman	SALMON-NORTH FORK TO HEADWATERS	12	279927	5017496
Garden	SALMON-HORSE CREEK TO NORTH FORK	11	703316	5020401
Hammerean	NORTH FORK SALMON	12	269442	5050516
Hammerean	NORTH FORK SALMON	12	267857	5050150
Hammerean	NORTH FORK SALMON	12	267085	5051186
Hannah Slough	SALMON-NORTH FORK TO HEADWATERS	11	723322	4931968
Hat	SALMON-NORTH FORK TO HEADWATERS	11	733088	4963502
Hat	SALMON-NORTH FORK TO HEADWATERS	11	732112	4964883
Hat	SALMON-NORTH FORK TO HEADWATERS	11	730665	4966315
Hawley	LEMHI RIVER	12	326123	4947927
Haynes	LEMHI RIVER	12	287674	4987219
Haynes	LEMHI RIVER	12	288421	4988410
Haynes	LEMHI RIVER	12	286230	4986570
Haynes	LEMHI RIVER	12	284976	4986132
Hoodoo	MIDDLE FORK SALMON	11	690846	4980418
Hoodoo	MIDDLE FORK SALMON	11	690846	4980418
Hoodoo	MIDDLE FORK SALMON	11	691795	4984667
Hoodoo	MIDDLE FORK SALMON	11	691451	4990825
Horse	SALMON-MOUTH TO HORSE CREEK	11	692688	5039705
Horse	SALMON-MOUTH TO HORSE CREEK	11	698764	5041697
Horse	SALMON-MOUTH TO HORSE CREEK	11	700999	5041168
Hot Spring	SALMON-NORTH FORK TO HEADWATERS	11	724965	4933168
Hot Spring	SALMON-NORTH FORK TO HEADWATERS	11	724499	4933959
Hot Spring	SALMON-NORTH FORK TO HEADWATERS	11	724676	4933694
Hughes	NORTH FORK SALMON	11	732179	5039858
Indian	SALMON-HORSE CREEK TO NORTH FORK	11	721766	5031130
Iron	SALMON-NORTH FORK TO HEADWATERS	11	736499	4976450
J Fell	MIDDLE FORK SALMON	11	701466	4950668
Johnson Gulch	SALMON-NORTH FORK TO HEADWATERS	12	268081	5049703
Jordan	YANKEE FORK SALMON	11	680655	4918704
Kenney	LEMHI RIVER	12	294095	4991096
Kinnikinic	SALMON-NORTH FORK TO HEADWATERS	11	707152	4908000
Lake	LEMHI RIVER	12	305617	4929977
Lake	MIDDLE FORK SALMON	11	690009	4980298
Lemhi River	LEMHI RIVER	12	290570	4987436
Lemhi River	LEMHI RIVER	12	290681	4936849
Lemhi River	LEMHI RIVER	12	290666	4986988
Liberty	MIDDLE FORK SALMON	11	688477	4961044
Little Sheep	NORTH FORK SALMON	12	274461	5042632
Little Spring	LEMHI RIVER	12	301025	4959503
Little Spring	LEMHI RIVER	12	299951	4960628
Little White Goat	MIDDLE FORK SALMON	11	698588	4957018
Little Woodtick	MIDDLE FORK SALMON	11	686491	4970892
Lost Springs	MIDDLE FORK SALMON	11	700662	4968464
Martindale	MIDDLE FORK SALMON	11	694046	4965191
Martindale	MIDDLE FORK SALMON	11	692059	4965984

Stream	SUBBASIN	UTM		
		Zone	Easting	Northing
McDevitt	LEMHI RIVER	12	285740	4977579
Meadow	MIDDLE FORK SALMON	11	698784	4983907
Melville	MIDDLE FORK SALMON	11	690595	4962594
Mill	SALMON-NORTH FORK TO HEADWATERS	11	715545	4936508
Mill	SALMON-NORTH FORK TO HEADWATERS	11	714220	4934687
Moose	NORTH FORK SALMON	12	268711	5059721
Moose	NORTH FORK SALMON	12	270377	5061306
Moose	SALMON-HORSE CREEK TO NORTH FORK	11	728167	5028286
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	724793	4943552
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	724325	4943725
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	722239	4946163
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	721259	4947162
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	720088	4948844
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	719782	4949295
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	719067	4950329
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	719067	4950329
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	716938	4952440
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	716271	4953803
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	716129	4955490
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	716500	4956989
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	717057	4958500
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	717354	4960194
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	717336	4960720
Morgan	SALMON-NORTH FORK TO HEADWATERS	11	717215	4960792
Nez Perce	NORTH FORK SALMON	12	277956	5049865
North Fork Salmon River	NORTH FORK SALMON	12	268142	5060432
Owl	SALMON-HORSE CREEK TO NORTH FORK	11	700044	5021316
Owl	SALMON-HORSE CREEK TO NORTH FORK	11	700054	5021389
Pierce	NORTH FORK SALMON	12	269320	5056368
Pierce	NORTH FORK SALMON	12	270580	5057648
Pine	SALMON-HORSE CREEK TO NORTH FORK	11	711749	5026335
Pine	SALMON-HORSE CREEK TO NORTH FORK	11	716666	5022820
Pine	SALMON-HORSE CREEK TO NORTH FORK	11	719836	5020950
Pine	SALMON-HORSE CREEK TO NORTH FORK	11	711522	5026658
Pole	MIDDLE FORK SALMON	11	687601	4961513
Prospect	LEMHI RIVER	12	300374	4929662
Rams	MIDDLE FORK SALMON	11	701031	4972997
Rams Creek Trib	MIDDLE FORK SALMON	11	701142	4972924
Rocky	LEMHI RIVER	12	305008	4933249
Sage	SALMON-HORSE CREEK TO NORTH FORK	11	727720	5032614
Salzer	NORTH FORK SALMON	11	729996	5046431
Sandy	LEMHI RIVER	12	295164	4994764
Sheep	NORTH FORK SALMON	12	272775	5042184
Sheep	NORTH FORK SALMON	12	271188	5042375
Sheep	MIDDLE FORK SALMON	11	699112	4960404

Appendix B. Continued.

Stream	SUBBASIN	UTM		
		Zone	Easting	Northing
Sheldon	MIDDLE FORK SALMON	11	694921	4954972
Short	LEMHI RIVER	12	304758	4930648
Shovel	MIDDLE FORK SALMON	11	699983	4986757
Slate	SALMON-NORTH FORK TO HEADWATERS	11	693084	4900416
Slate	SALMON-NORTH FORK TO HEADWATERS	11	694246	4902151
Slate	SALMON-NORTH FORK TO HEADWATERS	11	692276	4899504
Slate	SALMON-NORTH FORK TO HEADWATERS	11	694559	4902877
Smiley	SALMON-NORTH FORK TO HEADWATERS	11	676568	4860807
Smithy	NORTH FORK SALMON	12	274111	5048778
Smithy	NORTH FORK SALMON	12	274085	5052913
South Fork Camas	MIDDLE FORK SALMON	11	694895	4955005
South Fork Williams	SALMON-NORTH FORK TO HEADWATERS	11	734529	4994324
Spider	MIDDLE FORK SALMON	11	699332	4952044
Spring	SALMON-HORSE CREEK TO NORTH FORK	11	714776	5030602
Spring	SALMON-HORSE CREEK TO NORTH FORK	11	712135	5033040
Spring	SALMON-HORSE CREEK TO NORTH FORK	11	713655	5032481
Squaw	SALMON-HORSE CREEK TO NORTH FORK	11	721561	5030978
Squaw	SALMON-HORSE CREEK TO NORTH FORK	11	720527	5031415
Squaw	SALMON-HORSE CREEK TO NORTH FORK	11	719003	5032472
Squaw	SALMON-HORSE CREEK TO NORTH FORK	11	716768	5037938
Squaw	SALMON-NORTH FORK TO HEADWATERS	11	700756	4913571
Squaw	SALMON-NORTH FORK TO HEADWATERS	11	699498	4916581
Squirrel	LEMHI RIVER	12	302460	4928874
Stein Gulch	SALMON-NORTH FORK TO HEADWATERS	12	271291	5042205
Stein Gulch	SALMON-NORTH FORK TO HEADWATERS	12	272066	5038507
Threemile	NORTH FORK SALMON	12	276157	5049124
Threemile	NORTH FORK SALMON	12	276493	5050577
Threemile	NORTH FORK SALMON	12	276229	5053320
Tower	SALMON-NORTH FORK TO HEADWATERS	12	274804	5023813
Trail	LEMHI RIVER	12	305556	4929920
Trail	LEMHI RIVER	12	305511	4930271
Trail	MIDDLE FORK SALMON	11	694949	4982874
Twin	NORTH FORK SALMON	12	268365	5054478
Van Horn	SALMON-NORTH FORK TO HEADWATERS	11	715575	4960237
Van Horn	SALMON-NORTH FORK TO HEADWATERS	11	715083	4961647
Vine	NORTH FORK SALMON	12	268568	5055006
Vine	NORTH FORK SALMON	12	267735	5056144
Wagonhammer	SALMON-NORTH FORK TO HEADWATERS	12	270052	5031232
Wagonhammer	SALMON-NORTH FORK TO HEADWATERS	12	270214	5031456
Wagonhammer	SALMON-NORTH FORK TO HEADWATERS	12	270479	5031882
Wagonhammer	SALMON-NORTH FORK TO HEADWATERS	12	270661	5032146
Wagonhammer	SALMON-NORTH FORK TO HEADWATERS	12	271230	5032797
Wagonhammer	SALMON-NORTH FORK TO HEADWATERS	12	272389	5034971
West Fork Anderson	NORTH FORK SALMON	12	272241	5050958
West Fork Camas	MIDDLE FORK SALMON	11	689147	4963551

Stream	SUBBASIN	UTM		
		Zone	Easting	Northing
West Fork Hughes	NORTH FORK SALMON	11	731114	5039827
West Fork Morgan	SALMON-NORTH FORK TO HEADWATERS	11	718352	4950990
West Fork Morgan	SALMON-NORTH FORK TO HEADWATERS	11	717408	4950966
West Fork Morgan	SALMON-NORTH FORK TO HEADWATERS	11	716160	4950982
West Fork Morgan	SALMON-NORTH FORK TO HEADWATERS	11	714844	4951812
West Fork Nez Perce	NORTH FORK SALMON	12	277814	5049926
West Fork Wimpey	LEMHI RIVER	12	289280	5000770
West Fork Wimpey	LEMHI RIVER	12	290774	5003745
West Fork Wimpey	LEMHI RIVER	12	292541	5006058
West Fk Yellowjacket	MIDDLE FORK SALMON	11	697698	4988515
Wheat	SALMON-HORSE CREEK TO NORTH FORK	11	680915	5026466
White Goat	MIDDLE FORK SALMON	11	699113	4956824
Wimpey	LEMHI RIVER	11	343186	4505867
Wimpey	LEMHI RIVER	12	286511	4997424
Wimpey	LEMHI RIVER	12	286876	4997777
Wimpey	LEMHI RIVER	12	287334	4997934
Wimpey	LEMHI RIVER	12	288003	4998247
Wimpey	LEMHI RIVER	12	288705	4999773
Wimpey	LEMHI RIVER	12	289459	5000777
Wimpey	LEMHI RIVER	12	289053	4999242
Wimpey	LEMHI RIVER	12	287350	4998035
Wimpey	LEMHI RIVER	12	288973	5000166
Woods	SALMON-HORSE CREEK TO NORTH FORK	11	699089	5042347
Woodtick	MIDDLE FORK SALMON	11	686930	4971490
Yellowjacket	MIDDLE FORK SALMON	11	691022	4980310
Yellowjacket	MIDDLE FORK SALMON	11	698071	4988827
Yellowjacket	MIDDLE FORK SALMON	11	689570	4978665
Yellowjacket	MIDDLE FORK SALMON	11	696378	4993080

2002 ANNUAL PERFORMANCE REPORT

State of: Idaho

Program: Fishery Management F-71-R-26

Project II: Technical Guidance

Subproject II-H: Salmon Region

Job: 7-d

Title: Technical Assistance

Contract Period: July 1, 2002 to June 30, 2003

ABSTRACT

During 2002, project staff provided technical assistance, as time allowed, to private landowners, Irrigation Districts, and all requesting state, federal and tribal agencies. We submitted comments to agencies and private entities concerning outfitter/guide special use permits, inquiries regarding stream habitat conditions on private lands, subdivision impacts, grazing allotments, applications for installation of instream structures, bank stabilization, stabilization and treatment of mine tailings, fish screening, prescribed burns, walk and wade fishing permits, applications for irrigation diversions, permits for discharging materials into streams, consultations concerning Endangered Species Act (ESA) issues, bridge construction, applications for stream restoration projects and water right applications. Department staff also spent considerable time assisting with the development of the Lemhi Habitat Conservation Plan, the Upper Salmon Basin Conservation Plan, and the development of a tributary prioritization plan.

Regional personnel were an integral part of the collaboration effort with the Upper Salmon Basin Model Watershed Project to implement on the ground habitat improvement measures, stream reconnects and fish migration flows. We also conducted on-site inspections of proposed, on-going and completed projects.

Department personnel participated in angler informational meetings, school presentations, multi-agency and private landowner collaborative groups, and the ASK-FISH program. Of the estimated 45,000 anglers that fish in the Salmon Region, approximately 90% live outside the area. Because these anglers are not familiar with the Regions waters, we respond to over 500 requests for basic information on fishing opportunities, techniques, regulations and area specifics. Staff gave supporting testimony on a case involving stocking a private pond without a valid pond permit.

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OBJECTIVES

1. Assist the Idaho Department of Water Resources (DWR), the Idaho Department of Lands (IDL), the US Army Corps of Engineers (USACE), and other state, federal, local and private entities in evaluating the effects of habitat manipulation on fish and habitat.
2. Recommend procedures that minimize adverse effects on aquatic habitat and fish caused by stream course alterations, and when possible work with all entities to restore functional river systems.
3. Provide information on all aspects of fisheries and aquatic habitat as requested.

METHODS

We responded to most requests for data, expertise, and recommendations from individuals, government agencies, and corporations. Project staff attended meetings, conducted field inspections, and generated responses as appropriate.

RESULTS

During 2002, we responded via letters, e-mail, field inspections, meetings, and reports to requests for technical assistance or comments on water and fishery-related matters (Table 1.).

Table 1. Responses to request for technical assistance or comments on water and fishery related matters.

<i>Entity</i>	<i>Number of Requests</i>
US Army Corps of Engineers	34
Idaho Department of Water Resources	43
Idaho Department of Lands	3
USDA Forest Service	37
Idaho Division of Environmental Quality	21
US Fish and Wildlife Service	35
Office of Species Conservation	20
NOAA Fisheries	34
Shoshone-Bannock Indian Tribes	7
National Marine Fisheries Service	47
US Bureau of Reclamation	5
Private consultants	30
Idaho Outfitters and Guides Licensing Board	3
Mining Companies	4
Department of Transportation	15
Bull Trout Stream Prioritization Plan	13

Table 1. Continued

<i>Entity</i>	<i>Number of Requests</i>
Pond permitting	11
Attorney General's Office	16
Custer County	1
Bureau of Land Management	12
General Public	67
Upper Salmon Basin Model Watershed Project	20
Lemhi Agreement 13	
Private Landowners	21
Adjudication	19
Environmental Protection Agency	11
Law Offices	2
Total	544

Project personnel usually contacted agencies and private landowners by telephone. Commonly, we responded to stream alteration proposals by meeting with the applicant on-site, determining the nature of the situation, and sending written or verbal comments to the appropriate agency. Due to the remoteness of the Salmon Region, we were often the only agency representatives available to conduct on-site inspections.

We responded to numerous inquiries from the public (via telephone, letter, and in person) about when, where, and how to participate in regional fisheries activities, ranging from steelhead angling to alpine lake fishing.

We reported weekly steelhead fishing results on the local radio station, in area newspapers and ASK-FISH throughout the season.

Combined efforts of fisheries staff with affiliated personnel of the Upper Salmon Basin Model Watershed Project pursued possible stream reconnection projects on Hawley, Falls, Little Morgan and Kinnikinic creeks. Department staff also collaborated with this group to acquire water savings through diversion consolidations. One in particular, the Department is working collaboratively with the Upper Salmon Basin Model Watershed Project to pursue the L6-S12 water transfer, which, upon completion, will provide additional flows to the Lemhi River to maintain a proper fish migration corridor.

Because the Salmon Region has no full-time Information and Education personnel, we respond to numerous requests by local schools and the general public for fish and wildlife related programs. During 2002, Salmon Region fisheries personnel held 28 education programs with approximately 1,705 participants. Salmon Region Fish and Game personnel also held 17 wildlife education programs with approximately 1,065 participants.

RECOMMENDATIONS

1. Technical guidance on issues involving fishery resources in the Salmon Region should be continued to assist in maintaining fishery resources in the Region.
2. Because of the number of requests a for technical guidance and the potential funding for improving fishery resources in the Salmon Region, consideration should be given to adding fisheries staff to administer aquatic habitat issues and to assist in the various planning and habitat improvement measures being addressed in the Region.

Submitted by:

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