

**EVALUATION OF IDAHO STEELHEAD HARVEST FOR LOWER SNAKE RIVER
COMPENSATION PLAN HATCHERY PROGRAMS**

September 1, 1999 to April 30, 2000

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ABSTRACT

Steelhead *Oncorhynchus mykiss* in Idaho are monitored to assess hatchery contribution, distribution, and return rates. Coded wire tags (CWT) are retrieved from fish harvested by anglers, and harvest rates are calculated by month and river section.

Creel clerks interviewed 16,781 anglers and examined 3,078 steelhead, or 11.4% of the statewide steelhead harvest estimate (27,063) for river sections creel for the Lower Snake River Compensation Plan (LSRCP) during the fall of 1999 and spring of 2000. We also retrieved 465 Coded Wire Tags (CWT) from 93 of the 143 unique mark groups released in Idaho through creel efforts. We recovered 65 of the 90 steelhead mark groups produced by the LSRCP, or 72.2% of the total LSRCP groups released. Idaho anglers also harvested fish from six CWT groups released in Washington and Oregon.

We estimate 9,313 (34.4%) of the 27,063 steelhead harvested during 1999-2000 were produced by the Lower Snake River Compensation Plan (LSRCP). An additional 5,553 LSRCP-reared fish returned to hatchery racks or to off-site release locations. Therefore, we accounted for 14,866 steelhead from the LSRCP program, 62.6% of which were harvested.

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INTRODUCTION

Steelhead *Oncorhynchus mykiss* and Chinook salmon *O. tshawytscha* are raised in Idaho hatcheries to mitigate for losses caused by the construction of hydroelectric dams. Adults returning to the Salmon River and Clearwater River basins commingle with each other and with wild stocks. In the Snake River, fish destined for Idaho also commingle with adults returning to Oregon and Washington streams.

The main purpose of this report is to show the composition of steelhead in the Idaho fishery and to estimate the adult harvest contribution from juveniles produced in Lower Snake River Compensation Plan (LSRCP) hatcheries. The LSRCP mitigates for four federal dams on the lower Snake River. Contribution to the Idaho fishery is one of the measures of performance of LSRCP fish.

Steelhead are also cultured by Idaho Power Company (IPC) and the US Fish and Wildlife Service (USFWS). The IPC fish are released into the Salmon River and Snake River drainages and USFWS fish are released into the Salmon River and Clearwater River drainages. A summary and discussion of the harvest contribution of these fish is not included in this report. However, harvest data for IPC and USFWS is incorporated into Appendix "A" tables by Coded-Wire-Tag (CWT) release group. The IPC and USFWS release groups are also identified by their rearing hatchery, Niagara Springs Fish Hatchery and Dworshak National Fish Hatchery, respectively, in Appendices B and C. The CWT fish from IPC and USFWS programs provided the basis for in-river return estimates in some instances.

Currently, wild stocks are below escapement goals and protection is necessary to perpetuate those fish. Harvest management of steelhead in Idaho is directed toward harvest of hatchery fish and protection of wild (unmarked) fish. Beginning in 1984, all hatchery-produced steelhead smolts released into Idaho rivers and streams had their adipose fins excised before release so that returning adults could be selectively harvested. Regulations stated that "only steelhead with a missing adipose fin (as evidenced by a healed scar) may be kept." Consequently, the harvest of any wild (unmarked) steelhead was illegal. Table 1 lists the fall and spring steelhead fishing season dates, bag limits and special restrictions in effect for Idaho during 1999 – 2000.

Representative groups of steelhead were marked with CWT prior to release as juveniles. Anglers were interviewed and fish snouts were retrieved in all major harvest areas to recover CWT from the fishery. Information was collected and used to estimate timing, straying, exploitation, harvest distribution, and relative abundance of hatchery stocks. Total harvested numbers were estimated by statewide harvest survey, and the harvest contribution for each hatchery program was derived from tag recoveries. Off-site smolt releases were used as a tool for distributing angler effort and harvest. This report documents some of the behavior and distribution of the returning fish.

Table 1. Steelhead season dates, bag limits, and special restrictions for the Clearwater River drainage, Salmon River drainage, and Snake River, 1999-2000.

River (and Sections)	Fall Season Dates^a	Bag Limits^b
Snake River (01)	Sep 1-Dec 31	2, 4, 10
Clearwater River (03 ^c , 04)	Oct 15-Dec 31	2, 4, 10
North Fork Clearwater River (05)	Oct 15-Dec 31	2, 4, 10
South Fork Clearwater River (07)	Oct 15-Dec 31	2, 4, 10
Salmon River (10-19)	Sep 1-Dec 31	2, 4, 10
Little Salmon River (20)	Sep 1-Dec 31	2, 4, 10

River (and Sections)	Spring Season Dates	Bag Limits
Snake River (01)	Jan 1-Apr 30	2, 4, 10
Clearwater River (03, 04)	Jan 1-Apr 30	2, 4, 10
North Fork Clearwater River (05)	Jan 1-Apr 30	2, 4, 10
South Fork Clearwater River (07)	Jan 1-Apr 30	2, 4, 10
Salmon River (10-14)	Jan 1-Mar 31	2, 4, 10
Salmon River (15-19)	Jan 1-Apr 30	2, 4, 10
Little Salmon River (20)	Jan 1-Apr 30	2, 4, 10

^aFall season dates are for catch-and-keep fishing. Fishing for steelhead on a catch-and-release basis was open from August 1 through December 31, 1999 in any water open to fishing for other species except in the Middle Fork Salmon River and South Fork Salmon River and their tributaries. See footnote c for river section exception regarding season dates.

^bBag limits denote daily, possession, and season totals.

^cCatch-and-keep fishing was open from September 1 – December 31, 1999 on the portion of Section 03 from the mouth to Memorial Bridge of Highway 12 at Lewiston.

OBJECTIVES

Identify the number and proportion of steelhead harvested in the Idaho sport fishery that are produced by LSRCP hatcheries.

Determine adult returns of LSRCP steelhead to Idaho hatcheries and off-site release areas.

DESCRIPTION OF STUDY AREA

Juvenile steelhead are released into the Salmon River drainage and Clearwater River drainage by the LSRCP program. Consequently, Idaho's harvest of LSRCP-produced steelhead primarily occurs in the Snake River, the Clearwater River and the Salmon River. While additional harvest of LSRCP-produced steelhead occasionally occurs in other locations, such as the Boise River and Oxbow Reservoir, the majority of Idaho's steelhead harvest occurs within the central portion of the state (Figure 1; Table 2).

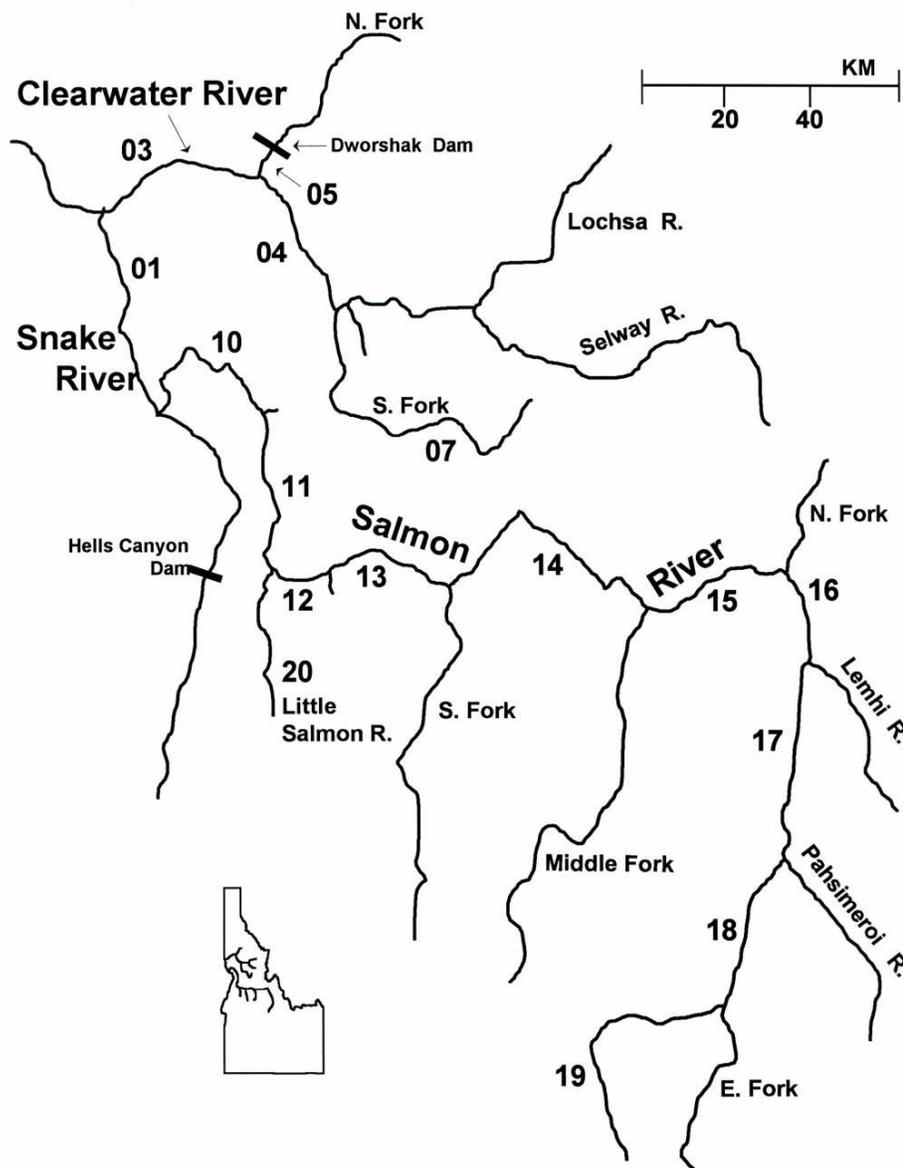


Figure 1. Map of steelhead harvest areas surveyed for the LSRCP program by Idaho Department of Fish and Game.

Table 2. River location codes for steelhead fisheries surveyed for the LSRCP program in Idaho.

River Section	Location Code
Snake River, below Salmon River	01
Clearwater River, below Orofino Bridge	03
Clearwater River, above Orofino Bridge	04
North Fork Clearwater River	05
South Fork Clearwater River	07
Salmon River, below Whitebird Creek	10
Salmon River, Whitebird Creek to Little Salmon	11
Salmon River, Little Salmon to Vinegar Creek	12
Salmon River, Vinegar Creek to South Fork	13
Salmon River, South Fork to Middle Fork	14
Salmon River, Middle Fork to North Fork	15
Salmon River, North Fork to Lemhi River	16
Salmon River, Lemhi River to Pahsimeroi River	17
Salmon River, Pahsimeroi River to East Fork	18
Salmon River, above East Fork	19
Little Salmon River	20

METHODS

Creel Survey

Angler interviews were conducted at check stations, from jet boats and from roving vehicles. Angler interview schedules and intensity were designed to observe maximum numbers of harvested fish. A jet boat was typically used to census anglers on the Clearwater River during the fall and winter months. However, boat density in the spring boat renders census methods impractical so creel checks were conducted at boat ramps. We used check stations and roving techniques to census anglers fishing in the lower and upper Salmon River portions of the project. We used jet boat and boat ramp surveys to census anglers on the Snake River.

Data collected during creel surveys included the number of anglers and hours fished, the number of fish kept or released, wild or hatchery origin of fish kept and released, fork length and sex of fish kept, and the date and river sections where fish were caught. Fish were inspected for tags and fin clips. The snout was removed for CWT retrieval from all fish with an abnormality of its left ventral fin or when use of a portable CWT hand wand detector signaled the presence of a CWT. Snouts were not excised from CWT fish when anglers desired to keep their fish intact.

Water conditions during the fall season are usually conducive to harvest and the interview schedule can be followed. However, during the spring season, high, turbid flows can reduce harvest to near zero. Anglers were not interviewed during periods of very low harvest.

Interview Schedule

Lower Snake River (01) - by jet boat with Washington Department of Fish and Wildlife (WDFW) personnel and at boat ramps on alternating weekends for ten weekends during the fall season.

Lower Clearwater River and North Fork Clearwater River (03 and 05) - by roving vehicle one day each week and by jet boat three days each week for 15 weeks in the fall and 12 weeks in the spring season. Interviews were conducted from boat ramps for the last six weeks of the spring season.

Upper Clearwater River (including the Middle Fork upstream to Clear Creek) and South Fork Clearwater River (04 and 07) - by roving vehicle on both rivers for eight weekends in the spring.

Salmon River and Little Salmon River

Section 10 - by roving vehicle for eight weekends in the fall and four weekends during the spring season (upper roaded portion only).

Section 11 - by roving vehicle for eight weekends in the fall and six weekends in the spring.

Sections 12 and 13 - by a check station at the old lumber mill site near Riggins for eight weekends in the fall and six weekends in the spring.

Sections 14 and 15 - by a check station near North Fork for eight weekends in the fall and four weekends in the spring.

Section 16 - by roving vehicle for eight weekends in the fall and seven weekends in the spring.

Section 17 - by roving vehicle for six weekends during the fall in the downriver one-quarter of the section and three weekends in the spring.

Sections 17 and 18 - by a check station near Challis for three weekends in the spring.

Section 18 - by roving vehicle for five weekends in the spring.

Section 19 - by roving vehicle for five weekends in the spring.

Section 20 - by roving vehicle for 11 weekends in the spring.

Data Analysis

Monthly harvest estimates by river section were obtained from a statewide telephone survey (Appendix D). We calculated a sample rate by summing the number of fish checked for marks from each river section by month and dividing it by the corresponding monthly statewide harvest estimate. Fish that were not seen by creel clerks during angler interviews were not included in sample rate calculations. The harvest of hatchery fish by CWT code was calculated as the number of tags recovered divided by the monthly sampling rate (Appendix A). We estimated harvest of unmarked release groups by using harvest rates from marked companion release groups. Total returns were the sum of harvest and hatchery returns by release group. We defined the exploitation rate as the harvest estimate divided by the total return of fish. No attempt was made to estimate the number of fish that spawned naturally or died prior to spawning.

Stock Separation

We categorized steelhead as either A-strain (<77.5 cm FL) or B-strain (\geq 77.5 cm FL) for dam count purposes (Ball and White 2001). The data was adjusted for size overlap between the two groups after it was separated by category. For a more detailed discussion regarding dam counts and overlap adjustments see Ball and White (2001).

Oregon Department of Fish and Wildlife (ODFW) personnel trap steelhead at the Bonneville Dam fish ladder. They measure fork length, record the presence or absence of an adipose fin, and take scales from the fish samples. The ODFW then supplies Idaho Department of Fish and Game (Department) with copies of the data, including scale readings (Appendix E).

National Marine Fisheries Service (NMFS) personnel sample steelhead at Lower Granite Dam each week through the steelhead run. The NMFS supplies the Department with the numbers of fish in each of four categories: wild steelhead <77.5 cm FL, hatchery steelhead <77.5 cm FL, wild steelhead \geq 77.5 cm FL, and hatchery steelhead \geq 77.5 cm FL (Appendix F).

We categorized fish into four length groups based on fishery type, strain, age, and sex for harvest purposes. We developed the following categories where mixed stock fisheries of A and B fish occur, such as in the Salmon River and Snake River: A-strain 1-ocean males are <68 cm FL;

A-strain 2-ocean males are ≥ 68 cm FL, A-strain 1-ocean females are ≤ 65 cm FL; and A-strain 2-ocean females are > 65 cm FL. Likewise, B-strain 2-ocean and 3-ocean males are > 79 cm FL, and B-strain 2-ocean and 3-ocean females are > 75 cm FL. Currently, we are unable to separate B-strain 1-ocean fish from A-strain 2-ocean fish based on length frequencies where mixed stock fisheries occur.

Where fishery stocks are separate, such as in the Clearwater River drainage, we developed the following categories: B-strain 1-ocean males are ≤ 73 cm FL, and B-strain 2-ocean and 3-ocean males are > 73 cm FL. Likewise, B-strain 1-ocean females are ≤ 68 cm FL, and B-strain 2-ocean and 3-ocean females are > 68 cm FL.

RESULTS

Creel Survey

We interviewed 16,781 anglers that had harvested 3,308 hatchery fish and released 1,821 and 964 hatchery and wild fish, respectively, during the fall 1999 and spring 2000 seasons (Tables 3-17). We physically examined 3,078 hatchery fish for marks, which represented 11.4% of the total steelhead harvest of 27,063 fish for river sections creeled for LSRCP (Table 18).

We removed 512 snouts for CWT retrieval from fish with clipped left ventral fins or from fish that triggered positive detection signals using a portable CWT wand detector. We recovered 474 CWT from 99 different mark groups from sampled snouts. The overall proportion of tags recovered from the number of fish checked for marks was 15.4%. The number of tags recovered, the estimated harvest of tag code groups by month and river section, and the total estimated harvest of tag code groups for the fall and spring seasons are also listed in Appendix A. Of the 99 mark groups that yielded CWT in the fishery, 93 were from releases in Idaho (Appendices A, B, and C).

Table 3. Steelhead fishery interview data (unexpanded) from lower Snake River Section 01, October 1999 - January 2000.^a

Months	No. Anglers	Total Hours Fished	<u>Steelhead</u> Hatchery	<u>Kept</u> Wild	<u>Steelhead</u> Hatchery	<u>Released</u> Wild	Total	Hours/ Fish	Percent Hatchery
October	661	2,448	41	0	6	14	61	40	77
November	501	1,740	37	0	2	20	59	29	66
December	88	398	16	0	0	14	30	13	53
Fall Total	1,250	4,586	94	0	8	48	150		
Average								31	68
January	5	43	5	0	3	7	15	3	53
Spring Total	5	43	5	0	3	7	15		
Average								3	53
Total	1,255	4,629	99	0	11	55	165		
Average								28	67

^aIncludes Idaho angler data collected by Washington Department of Fish and Wildlife.

Table 4. Steelhead fishery interview data (unexpanded) from lower Clearwater River Section 03 and North Fork Clearwater River Section 05, October 1999 - March 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead</u> Hatchery	<u>Kept</u> Wild	<u>Steelhead</u> Hatchery	<u>Released</u> Wild	Total	Hours/ Fish	Percent Hatchery
October	693	2,688	119	0	29	36	184	15	80
November	481	1,545	60	0	11	18	89	17	80
December	415	1,564	79	0	30	20	129	12	84
Fall Total	1,589	5,797	258	0	70	74	402		
Average								14	82
January	419	1,399	81	0	23	14	118	12	88
February	537	1,943	92	0	16	7	115	17	94
March	214	854	26	0	0	1	27	32	96
Spring Total	1,170	4,196	199	0	39	22	260		
Average								16	92
Total	2,759	9,993	457	0	109	96	662		
Average								15	85

Table 5. Steelhead fishery interview data (unexpanded) from upper Clearwater River and Middle Fork Clearwater River Section 04, February - April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead</u>				Total	Hours/ Fish	Percent Hatchery
			Hatchery	Kept Wild	Hatchery	Released Wild			
February	249	907	30	0	9	6	45	20	87
March	177	646	18	0	6	1	25	26	96
April	5	15	0	0	0	0	0	--	--
Total	431	1,568	48	0	15	7	70		
Average								22	90

Table 6. Steelhead fishery interview data (unexpanded) from South Fork Clearwater River Section 07, February - April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead</u>				Total	Hours/ Fish	Percent Hatchery
			Hatchery	Kept Wild	Hatchery	Released Wild			
February	121	375	18	0	5	5	28	13	82
March	544	1,963	58	0	28	8	94	21	91
April	182	636	32	0	21	2	55	12	96
Total	847	2,974	108	0	54	15	177		
Average								17	92

Table 7. Steelhead fishery interview data (unexpanded) from Salmon River Section 10, October 1999 - February 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead</u>				Total	Hours/ Fish	Percent Hatchery
			Hatchery	Kept Wild	Hatchery	Released Wild			
October	71	273	2	0	0	2	4	68	50
November	63	177	2	0	0	0	2	89	100
Fall Total	134	450	4	0	0	2	6		
Average								75	67
February	23	43	1	0	0	0	1	43	100
Spring	23	43	1	0	0	0	1		
Total									
Average								43	100
Total	157	493	5	0	0	2	7		
Average								70	71

Table 8. Steelhead fishery interview data (unexpanded) from Salmon River Section 11, October 1999 - March 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	148	623	9	0	6	10	25	25	60
November	301	961	22	0	5	13	40	24	68
Fall Total	449	1,584	31	0	11	23	65		
Average								24	65
February	98	243	2	0	1	2	5	49	60
March	120	383	6	0	2	3	11	35	73
Spring Total	218	626	8	0	3	5	16		
Average								39	69
Total	667	2,210	39	0	14	28	81		
Average								27	65

Table 9. Steelhead fishery interview data (unexpanded) from Salmon River Section 12, October 1999 - March 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	530	3,029	78	0	5	32	115	26	72
November	875	3,440	108	0	29	33	170	20	81
Fall Total	1,405	6,469	186	0	34	65	285		
Average								23	77
February	279	947	15	0	6	5	26	36	81
March	428	1,338	35	0	41	19	95	14	80
Spring	707	2,285	50	0	47	24	121		
Total									
Average								19	80
Total	2,112	8,754	236	0	81	89	406		
Average								22	78

Table 10. Steelhead fishery interview data (unexpanded) from Salmon River Section 13, October 1999 - March 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	78	385	12	0	0	3	15	26	80
November	81	376	29	0	3	15	47	8	68
Fall Total	159	761	41	0	3	18	62		
Average								12	71
February	6	36	4	0	0	2	6	6	67
March	20	94	1	0	0	7	8	12	13
Spring Total	26	130	5	0	0	9	14		
Average								9	36
Total	185	891	46	0	3	27	76		
Average								12	64

Table 11. Steelhead fishery interview data (unexpanded) from Salmon River Section 14, October 1999 - March 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	294	4,005	105	0	69	109	283	14	61
November	241	3,840	113	0	100	89	302	13	71
Fall Total	535	7,845	218	0	169	198	585		
Average								13	66
February	26	309	9	0	9	8	26	12	69
March	102	1,453	30	0	8	36	74	20	51
Spring Total	128	1,762	39	0	17	44	100		
Average								18	56
Total	663	9,607	257	0	186	242	685		
Average								14	65

Table 12. Steelhead fishery interview data (unexpanded) from Salmon River Section 15, October 1999 - April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	1,181	11,573	346	1	150	88	585	20	85
November	1,154	13,600	549	0	307	101	957	14	89
Fall Total	2,335	25,173	895	1	457	189	1,542		
Average								16	88
February	215	1,625	77	0	70	12	159	10	92
March	923	10,108	311	0	323	88	722	14	88
April	9	67	1	0	1	4	6	11	33
Spring Total	1,147	11,800	389	0	394	104	887		
Average								13	88
Total	3,482	36,973	1,284	1	851	293	2,429		
Average								15	88

Table 13. Steelhead fishery interview data (unexpanded) from Salmon River Section 16, October 1999 - April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	207	977	42	0	9	10	61	16	84
November	427	1,885	90	0	41	12	143	13	92
Fall Total	634	2,862	132	0	50	22	204		
Average								14	89
February	174	609	32	0	16	2	50	12	96
March	628	2,834	119	0	98	10	227	12	96
April	54	186	12	0	3	4	19	10	79
Spring Total	856	3,629	163	0	117	16	296		
Average								12	95
Total	1,490	6,491	295	0	167	38	500		
Average								13	92

Table 14. Steelhead fishery interview data (unexpanded) from Salmon River Section 17, October 1999 – April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
October	6	30	1	0	1	0	2	15	100
November	42	172	9	0	0	0	9	19	100
Fall Total	48	202	10	0	1	0	11		
Average								18	100
February	58	143	3	0	0	1	4	36	75
March	801	5,076	131	0	75	14	220	23	94
April	257	2,102	51	0	41	7	99	21	93
Spring Total	1,116	7,321	185	0	116	22	323		
Average								23	93
Total	1,164	7,523	195	0	117	22	334		
Average								23	93

Table 15. Steelhead fishery interview data (unexpanded) from Salmon River Section 18, March – April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
March	376	2,396	68	0	50	10	128	19	92
April	292	2,344	58	0	59	7	124	19	94
Total	668	4,740	126	0	109	17	252		
Average								19	93

Table 16. Steelhead fishery interview data (unexpanded) from Salmon River Section 19, March – April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
March	91	430	11	0	35	8	54	8	85
April	256	1,291	58	0	56	10	124	10	92
Total	347	1,721	69	0	91	18	178		
Average								10	90

Table 17. Steelhead fishery interview data (unexpanded) from Little Salmon River Section 20, November 1999 – April 2000.

Months	No. Anglers	Total Hours Fished	<u>Steelhead Kept</u>		<u>Steelhead Released</u>		Total	Hours/ Fish	Percent Hatchery
			Hatchery	Wild	Hatchery	Wild			
November	24	58	1	0	1	0	2	29	100
Fall Total	24	58	1	0	1	0	2		
Average								29	100
February	76	263	1	0	2	1	4	66	75
March	276	905	35	0	8	7	50	18	86
April	178	672	7	0	2	7	16	42	56
Spring Total	530	1,840	43	0	12	15	70		
Average								26	79
Total	554	1,898	44	0	13	15	72		
Average								26	79

Table 18. Proportion of estimated steelhead harvest by river section that was examined for marks, 1999-2000.

River Section	No. Fish Checked	Estimated Harvest ^a	Sample Rate (%)
01	98	2,977	3.3
03 & 05	419	6,074	6.9
04	46	636	7.2
07	106	466	22.7
10	5	1,768	0.3
11	37	1,367	2.7
12	218	906	24.1
13	42	442	9.5
14	233	1,553	15.0
15	1,202	5,441	22.1
16	272	2,008	13.5
17	183	1,135	16.1
18	116	837	13.9
19	65	674	9.6
20	36	779	4.6
Total	3,078	27,063	
Average			11.4

^aStatewide steelhead harvest survey data from Thomas J. McArthur, IDFG, (unpublished).

The other six mark groups were recovered from two Oregon and four Washington releases (Appendices A and G). One Oregon tag group was from a release in the Imnaha River and the other Oregon tag group was from a release in the Wallowa River. The four Washington tag groups were from two releases in the Grande Rhonde River, one release in the Touchet River, and one release in the Tucannon River.

We recovered several A-strain 5-year-old fish from CWT groups 10/35/12 and 10/35/13 in the Idaho fishery (Table 19). We do not know if the 5-year-old fish held over in freshwater or the ocean

Adult Returns to Idaho

We estimated that at least 12,638 A-strain steelhead and 2,207 B-strain steelhead reared by LSRCP hatcheries returned to Idaho during 1999-2000 (Table 19). Adult returns from the LSRCP program, verified by CWT recoveries, were from releases into the Salmon River and Clearwater River drainages. However, CWT from LSRCP releases were also recovered from the fishery in the Snake River bordering Idaho and Oregon – Washington. The estimated return of adult steelhead to Idaho during 1999–2000 from the LSRCP program was 14,845 fish (Table 19). The return estimate was comprised of harvest by Idaho anglers, hatchery returns, and off-site escapement estimates, which are included with return data to hatcheries. The LSRCP contribution to Idaho's hatchery steelhead harvest was 9,312 fish during 1999-2000. This number does not include an estimated 222 LSRCP-reared fish from Oregon and Washington harvested by Idaho anglers (Appendices A and G). Harvest of LSRCP-reared fish from Idaho that occurred downstream of Snake River section 01 is reported by Washington and is not included in this report.

Table 19. Summary of 1999-2000 harvest estimates and hatchery returns of steelhead produced by LSRCP hatcheries.

Release Year	Strain and Ocean Age	No. of Fish Released	Release Site	Hatchery Rearing	Marks	Estimated Number of Fish		
						Harvest	Hatchery Return ^a	Total
1998	A-1	20,789	Sawtooth Hatchery	HNFH ^b	CWT 10/45/03	119	25	144
1998	A-1	19,534	Sawtooth Hatchery	HNFH	CWT 10/45/04	114	31	145
1998	A-1	19,442	Sawtooth Hatchery	HNFH	CWT 10/47/20 ^c	55	35	90
1998	A-1	18,337	Sawtooth Hatchery	HNFH	CWT 10/45/47 ^c	144	31	175
1998	A-1	17,839	Sawtooth Hatchery	HNFH	CWT 10/45/48 ^c	52	32	84
1998	A-1	20,409	Sawtooth Hatchery	HNFH	CWT 10/45/49 ^c	199	22	221
1998	A-1	19,891	Sawtooth Hatchery	HNFH	CWT 10/45/50 ^c	54	16	70
1998	A-1	19,208	Sawtooth Hatchery	HNFH	CWT 10/46/08 ^c	110	25	135
1998	A-1	20,927	Sawtooth Hatchery	HNFH	CWT 10/46/09 ^c	58	18	76
1998	A-1	19,103	Sawtooth Hatchery	HNFH	CWT 10/47/17	105	37	142
1998	A-1	20,053	Sawtooth Hatchery	HNFH	CWT 10/47/18	73	39	112
1998	A-1	20,168	Sawtooth Hatchery	HNFH	CWT 10/47/19 ^c	77	35	112
1998	A-1	447,515	Sawtooth Hatchery	HNFH	None	2,202	1,545	3,747
1998	A-1	21,016	Salmon River at McNabbs Point	MV FH ^d	CWT 10/21/40 ^c	125	27	152
1998	A-1	20,192	Salmon River at McNabbs Point	MV FH	CWT 10/21/41 ^c	75	26	101
1998	A-1	19,786	Salmon River at McNabbs Point	MV FH	CWT 10/21/42 ^c	109	26	135
1998	A-1	97,666	Salmon River at McNabbs Point	MV FH	None	495	14	509
1998	A-1	142,650	Salmon River at Cottonwood Campground	MV FH	None	723	185	908
1998	A-1	21,696	Salmon River at Shoup Bridge	MV FH	CWT 10/21/37 ^c	90	28	118
1998	A-1	21,478	Salmon River at Shoup Bridge	MV FH	CWT 10/21/38 ^c	70	28	98
1998	A-1	17,514	Salmon River at Shoup Bridge	MV FH	CWT 10/21/39 ^c	7	23	30
1998	A-1	48,227	Salmon River at Shoup Bridge	MV FH	None	134	63	197
1998	A-1	154,565	Salmon River at Lemhi River	MV FH	None	430	201	631
1998	A-1	21,407	Salmon River at Red Rock	MV FH	CWT 10/21/34 ^c	22	28	50
1998	A-1	21,639	Salmon River at Red Rock	MV FH	CWT 10/21/35 ^c	105	28	133
1998	A-1	16,299	Salmon River at Red Rock	MV FH	CWT 10/21/36 ^c	60	21	81
1998	A-1	77,715	Salmon River at Red Rock	MV FH	None	245	101	346
1998	A-1	10,544	Little Salmon River	HNFH	CWT 10/46/14 ^c	6	6	12
1998	A-1	19,295	Little Salmon River	HNFH	CWT 10/47/08 ^c	66	66	132
1998	A-1	317,631	Little Salmon River	HNFH	None	766	766	1,532
Subtotal		1,732,535				6,890	3,528	10,418
1997	A-2	84,715	Sawtooth Hatchery	MV FH	None	55	21	76
1997	A-2	31,770	Sawtooth Hatchery	HNFH	CWT 10/51/47 ^c	51	11	62
1997	A-2	27,798	Sawtooth Hatchery	HNFH	CWT 10/51/48	13	5	18
1997	A-2	20,498	Sawtooth Hatchery	HNFH	CWT 10/51/51 ^c	8	4	12
1997	A-2	20,267	Sawtooth Hatchery	HNFH	CWT 10/51/52 ^c	10	1	11
1997	A-2	20,038	Sawtooth Hatchery	HNFH	CWT 10/51/53 ^c	6	3	9
1997	A-2	19,301	Sawtooth Hatchery	HNFH	CWT 10/51/54 ^c	11	6	17
1997	A-2	19,480	Sawtooth Hatchery	HNFH	CWT 10/51/55	18	2	20
1997	A-2	20,464	Sawtooth Hatchery	HNFH	CWT 10/51/56	3	2	5
1997	A-2	20,507	Sawtooth Hatchery	HNFH	CWT 10/51/57 ^c	27	5	32
1997	A-2	19,792	Sawtooth Hatchery	HNFH	CWT 10/51/58 ^c	7	3	10
1997	A-2	19,619	Sawtooth Hatchery	HNFH	CWT 10/51/59	3	4	7
1997	A-2	418,211	Sawtooth Hatchery	HNFH	None	274	88	362
1997	A-2	57,115	Salmon River at Torreys Hole	HNFH	CWT 10/51/46 ^c	96	11	107
1997	A-2	6,801	Salmon River at Torreys Hole	HNFH	None	11	1	12
1997	A-2	17,402	Salmon River at McNabbs Point	MV FH	CWT 10/52/10 ^c	7	5	12

Table 19. Continued.

Release Year	Strain and Ocean Age	No. of Fish Released	Release Site	Hatchery Rearing	Marks	Estimated Number of Fish		
						Harvest	Hatchery Return ^a	Total
1997	A-2	17,574	Salmon River at McNabbs Point	MVFH	CWT 10/52/11 ^c	17	5	22
1997	A-2	14,694	Salmon River at McNabbs Point	MVFH	CWT 10/52/12 ^c	3	4	7
1997	A-2	104,801	Salmon River at McNabbs Point	MVFH	None	57	32	89
1997	A-2	75,946	Salmon River at McNabbs Point	HNFH	None	41	23	64
1997	A-2	150,280	Salmon River at Brunos Bridge	MVFH	None ^c	82	45	127
1997	A-2	20,560	Salmon River at Lemhi River	MVFH	CWT 10/52/13 ^c	0	6	6
1997	A-2	20,628	Salmon River at Lemhi River	MVFH	CWT 10/52/14 ^c	15	6	21
1997	A-2	15,226	Salmon River at Lemhi River	MVFH	CWT 10/52/15 ^c	3	5	8
1997	A-2	185,096	Salmon River at Lemhi River	MVFH	None	59	56	115
1997	A-2	20,026	Salmon River at North Fork	MVFH	CWT 10/52/16 ^c	16	6	22
1997	A-2	19,979	Salmon River at North Fork	MVFH	CWT 10/52/17 ^c	3	6	9
1997	A-2	17,633	Salmon River at North Fork	MVFH	CWT 10/52/18 ^c	76	5	81
1997	A-2	76,672	Salmon River at North Fork	MVFH	None	126	23	149
1997	A-2	10,977	Little Salmon River	HNFH	CWT 10/51/05	0	19	19
1997	A-2	20,939	Little Salmon River	HNFH	CWT 10/52/05	0	36	36
1997	A-2	310,365	Little Salmon River	HNFH	None	0	530	530
Subtotal		1,905,174				1,098	979	2,077
1996	A-3	62,686	Salmon River at Brunos Bridge	MVFH	CWT 10/35/13 ^c	3	19	22
1996	A-3	144,559	Salmon River at Brunos Bridge	MVFH	None	7	43	50
1996	A-3	61,673	Salmon River at Lemhi River	MVFH	CWT 10/35/12 ^c	3	19	22
1996	A-3	139,539	Salmon River at Lemhi River	MVFH	None	7	42	49
Subtotal		408,457				20	123	143
1998	B-1	21,173	Slate Creek	MVFH	CWT 10/21/46 ^c	7	1	8
1998	B-1	21,178	Slate Creek	MVFH	CWT 10/21/47 ^c	3	1	4
1998	B-1	17,324	Slate Creek	MVFH	CWT 10/21/48	5	1	6
1998	B-1	114,905	Slate Creek	MVFH	None	29	4	33
1998	B-1	52,800	Squaw Creek Pond	MVFH	None ^c	0	0	0
1998	B-1	21,372	East Fork Trap	MVFH	CWT 10/47/05 ^c	10	2	12
1998	B-1	21,088	East Fork Trap	MVFH	CWT 10/47/06 ^c	0	0	0
1998	B-1	20,781	East Fork Trap	MVFH	CWT 10/47/07 ^c	3	0	3
1998	B-1	63,679	East Fork Trap	MVFH	None	13	26	39
1998	B-1	20,367	East Fork Salmon River	MVFH	CWT 10/21/43 ^c	0	0	0
1998	B-1	20,932	East Fork Salmon River	MVFH	CWT 10/21/44 ^c	0	0	0
1998	B-1	19,811	East Fork Salmon River	MVFH	CWT 10/21/45 ^c	0	0	0
1998	B-1	260,615	East Fork Salmon River	MVFH	None ^c	0	0	0
1998	B-1	21,428	Little Salmon River	MVFH	CWT 10/21/31 ^c	0	0	0
1998	B-1	20,983	Little Salmon River	MVFH	CWT 10/21/32 ^c	0	0	0
1998	B-1	20,212	Little Salmon River	MVFH	CWT 10/21/33 ^c	0	0	0
1998	B-1	218,327	Little Salmon River	MVFH	None ^c	0	0	0
1998	B-1	4,497	Red River	CFH ^e	None ^c	0	0	0
1998	B-1	21,859	South Fork Clearwater River	CFH	CWT 10/47/38 ^c	0	2	2
1998	B-1	21,079	South Fork Clearwater River	CFH	CWT 10/47/39 ^c	0	2	2
1998	B-1	21,093	South Fork Clearwater River	CFH	CWT 10/47/40 ^c	0	2	2
1998	B-1	468,274	South Fork Clearwater River	CFH	None ^c	0	45	45
1998	B-1	20,851	Clear Creek	CFH	CWT 10/52/25 ^c	0	2	2
1998	B-1	144,633	Clear Creek	CFH	None	0	14	14
Subtotal		1,659,261				70	102	172
1997	B-2	20,273	Slate Creek	MVFH	CWT 10/51/60 ^c	4	2	6
1997	B-2	21,448	Slate Creek	MVFH	CWT 10/51/61 ^c	0	2	2
1997	B-2	15,480	Slate Creek	MVFH	CWT 10/51/62 ^c	0	1	1

Table 19. Continued.

Release Year	Strain and Ocean Age	No. of Fish Released	Release Site	Hatchery Rearing	Marks	Estimated Number of Fish		
						Harvest	Hatchery Return ^a	Total
1997	B-2	156,010	Slate Creek	MVFH	None	11	11	22
1997	B-2	19,376	East Fork Trap	MVFH	CWT 10/52/19 ^c	10	2	12
1997	B-2	20,667	East Fork Trap	MVFH	CWT 10/52/20 ^c	13	0	13
1997	B-2	15,007	East Fork Trap	MVFH	CWT 10/52/21 ^c	13	2	15
1997	B-2	76,170	East Fork Trap	MVFH	None	50	10	60
1997	B-2	19,347	East Fork Salmon River	MVFH	CWT 10/52/22 ^c	7	1	8
1997	B-2	19,797	East Fork Salmon River	MVFH	CWT 10/52/23 ^c	69	1	70
1997	B-2	13,032	East Fork Salmon River	MVFH	CWT 10/52/24 ^c	7	1	8
1997	B-2	240,778	East Fork Salmon River	MVFH	None	383	14	397
1997	B-2	9,505	Little Salmon River	MVFH	CWT 10/51/06 ^c	0	9	9
1997	B-2	19,407	Little Salmon River	MVFH	CWT 10/52/06 ^c	18	19	37
1997	B-2	211,618	Little Salmon River	MVFH	None	207	207	414
1997	B-2	4,991	Red River	CFH	None ^c	0	0	0
1997	B-2	42,426	South Fork Red River	CFH	CWT 10/51/20 ^f	0	0	0
1997	B-2	6,304	South Fork Red River	CFH	None ^f	0	0	0
1997	B-2	75,894	Crooked River	CFH	RV Clip ^{c,g}	11	12	23
1997	B-2	21,292	South Fork Clearwater River	CFH	CWT 10/21/29 ^c	6	21	27
1997	B-2	21,163	South Fork Clearwater River	CFH	CWT 10/21/30 ^c	42	21	63
1997	B-2	21,451	South Fork Clearwater River	CFH	CWT 10/46/10 ^c	7	22	29
1997	B-2	357,267	South Fork Clearwater River	CFH	None	307	358	665
1997	B-2	32,575	Clear Creek	CFH	CWT 10/46/63 ^c	7	11	18
1997	B-2	31,672	Clear Creek	CFH	CWT 10/51/45 ^c	12	12	24
1997	B-2	114,966	Clear Creek	CFH	None	34	41	75
Subtotal		1,607,916				1,218	780	1,998
1996	B-3	61,695	Slate Creek	MVFH	CWT 10/35/07 ^c	0	0	0
1996	B-3	174,602	Slate Creek	MVFH	None	0	0	0
1996	B-3	63,013	East Fork Salmon River	MVFH	CWT 10/35/08 ^c	0	0	0
1996	B-3	326,121	East Fork Salmon River	MVFH	None	0	0	0
1996	B-3	10,806	East Fork Salmon River	MVFH	CWT 10/46/13 ^c	0	0	0
1996	B-3	22,050	East Fork Salmon River	MVFH	CWT 10/47/09	0	0	0
1996	B-3	30,064	East Fork Salmon River	MVFH	None	0	0	0
1996	B-3	38,320	East Fork Salmon River at Herd Creek	MVFH	None	0	0	0
1996	B-3	62,227	Little Salmon River	MVFH	CWT 10/35/09 ^c	0	0	0
1996	B-3	341,054	Little Salmon River	MVFH	None	0	0	0
1996	B-3	6,164	Red River	CFH	CWT 10/46/30	0	0	0
1996	B-3	8,198	Red River	CFH	None	0	0	0
1996	B-3	40,970	South Fork Red River	CFH	CWT 10/20/22 ^{c,f,h}	0	0	0
1996	B-3	6,256	South Fork Red River	CFH	None ^{f,h}	0	0	0
1996	B-3	46,018	Crooked River	CFH	None ^c	0	0	0
1996	B-3	63,743	South Fork Clearwater River	CFH	CWT 10/20/29 ^c	4	1	5
1996	B-3	63,551	South Fork Clearwater River	CFH	CWT 10/35/14 ^c	4	1	5
1996	B-3	64,254	South Fork Clearwater River	CFH	CWT 10/35/15 ^c	0	1	1
1996	B-3	236,965	South Fork Clearwater River	CFH	None	8	4	12
1996	B-3	63,556	Clear Creek	CFH	CWT 10/30/53 ^c	0	3	3
1996	B-3	234,886 ⁱ	Clear Creek	CFH	None	0	11	11
Subtotal		1,964,513				16	21	37
Total		9,277,856				9,312	5,533	14,845

^a Includes off-site escapement and strays to hatchery racks.

^b HNFH = Hagerman National Fish Hatchery.

^c Release group includes fish marked with passive integrated transponder (PIT) tags.

^d MVFH = Magic Valley Fish Hatchery.

^e CFH = Clearwater Fish Hatchery.

^f Fall release.

^g Selway River stock. Harvest derived by expansion of right ventral fin clip recoveries in fisheries.

^h Fingerling release.

ⁱ Includes 135,837 2-year reared fish.

Release Group Exploitation by Run Year

Sawtooth Fish Hatchery, East Fork Satellite Facility, and Squaw Creek Pond

The exploitation rate was 65% for A-strain 1- and 2-ocean steelhead returning to Sawtooth Fish Hatchery during 1999-2000 (Table 19). The exploitation rate was 73% for B-strain steelhead returning to the East Fork Trap. We did not estimate an exploitation rate for B-strain steelhead returning to Squaw Creek Pond because they were not differentially marked.

Salmon River and Associated Tributary Off-Site Areas

Exploitation rates for A-strain steelhead returning to off-site release areas at Torreys Hole, McNabbs Point, Brunos Bridge, Cottonwood Campground, Shoup Bridge, Lemhi River, Red Rock, North Fork, and the Little Salmon River were: 90%, 85%, 46%, 80%, 68%, 61%, 71%, 85%, and 37%, respectively. Exploitation rates for B-strain steelhead returning to off-site release areas at Slate Creek (upper Salmon River) and the Little Salmon River were 72% and 49%, respectively.

Clearwater Fish Hatchery

Exploitation rates for B-strain steelhead returning to off-site release areas at: Clear Creek, South Fork Clearwater River, Red River, Crooked River and South Fork Red River were: 36%, 44%, 0%, 48%, and 0%, respectively.

Completed Adult Returns by Release Year

Sawtooth Fish Hatchery and East Fork Satellite Facility

Sawtooth Fish Hatchery released 742,460 A-strain steelhead smolts during 1997. We estimate 1,863 returned as 1-ocean adults in 1998-1999 (Hansen and White 2004) and 641 returned as 2-ocean adults in 1999-2000 (Table 19). The total return of 2,504 fish represents an SAR (smolt to adult return) of 0.34%.

Hatchery personnel released 490,374 B-strain steelhead into the East Fork Salmon River during 1996. We estimate 54 returned as 1-ocean adults in 1997-1998 (Hansen and White 2003), 173 returned as 2-ocean adults in 1998-1999 (Hansen and White 2004), and no 3-ocean adults returned in 1999-2000 (Table 19). The total return of 227 fish represents an SAR of 0.05%.

Salmon River and Associated Tributary Off-Site Areas

Hatchery personnel released 63,916 A-strain steelhead into Torreys Hole during 1997. We estimate 176 returned as 1-ocean fish in 1998-1999 (Hansen and White 2004) and 119 returned as 2-ocean fish in 1999-2000 (Table 19). The total return of 295 fish represents an SAR of 0.47%.

Hatchery personnel released 230,417 A-strain steelhead near McNabbs Point during 1997. We estimate 504 returned as 1-ocean fish in 1998-1999 (Hansen and White 2004) and 194 returned as 2-ocean fish in 1999-2000 (Table 19). The total return of 698 fish represents an SAR of 0.30%.

Hatchery personnel released 150,280 A-strain steelhead near Brunos Bridge during 1997. We estimate 329 returned as 1-ocean fish in 1998-1999 (Hansen and White 2004) and 127 returned as 2-ocean fish in 1999-2000 (Table 19). The total return of 456 fish represents an SAR of 0.30%.

Hatchery personnel released 241,510 A-strain steelhead into the Lemhi River during 1997. We estimate 789 returned as 1-ocean fish in 1998-1999 (Hansen and White 2004) and 150 returned as 2-ocean fish in 1999-2000 (Table 19). The total return of 939 fish represents an SAR of 0.39%.

Hatchery personnel released 134,310 A-strain steelhead near North Fork during 1995. We estimate 479 returned as 1-ocean fish in 1998-1999 (Hansen and white 2004) and 261 returned as 2-ocean fish in 1999-2000 (Table 19). The total return of 740 fish represents an SAR of 0.55%.

Hatchery personnel released 342,281 A-strain steelhead into the Little Salmon River during 1997. We estimate 322 returned as 1-ocean fish in 1998-1999 (Hansen and White 2004) and 585 returned as 2-ocean fish in 1999-2000 (Table 19). The total return of 907 fish represents an SAR of 0.26%.

Hatchery personnel released 236,297 B-strain steelhead into Slate Creek (upper Salmon River) during 1996. We estimate 5 returned as 1-ocean adults in 1997-1998 (Hansen and White 2003), 34 returned as 2-ocean adults in 1998-1999 (Hansen and White 2004), and no 3-ocean adults returned in 1999-2000 (Table 19). The total return of 39 fish represents an SAR of 0.02%.

Hatchery personnel released 403,291 B-strain steelhead into the Little Salmon River during 1996. We estimate 52 returned as 1-ocean adults in 1997-1998 (Hansen and White 2003), 610 returned as 2-ocean adults in 1998-1999 (Hansen and White 2004), and no 3-ocean adults returned in 1999-2000 (Table 19). The total return of 662 fish represents an SAR of 0.16%.

Clearwater Fish Hatchery

Hatchery personnel released 298-442 B-strain steelhead into Clear Creek during 1996. We estimate 9 returned as 1-ocean adults in 1997-1998 (Hansen and White 2003), 329 returned as 2-ocean adults in 1998-1999 (Hansen and White 2004), and 14 returned as 3-ocean fish in 1999-2000 (Table 19). The total return of 352 fish represents an SAR of 0.12%.

Hatchery personnel released 14,362 B-strain steelhead into Red River during 1996. We estimate no 1-ocean adults returned in 1997-1998 (Hansen and White 2003), 2 returned as 2-ocean adults in 1998-1999 (Hansen and White 2004), and no 3-ocean fish returned in 1999-2000 (Table 19). The total return of 2 fish represents an SAR of 0.01%.

Hatchery personnel released 428,513 B-strain steelhead into the South Fork Clearwater River during 1996. We estimate no 1-ocean adults returned in 1997-1998 (Hansen and White 2003), 952 returned as 2-ocean adults in 1998-1999 (Hansen and White 2004), and 23 returned as 3-ocean fish in 1999-2000 (Table 19). The total return of 975 fish represents an SAR of 0.23%.

Hatchery personnel released 47,226 and 46,018 B-strain steelhead into the South Fork Red River and Crooked River, respectively, during 1996. We did not recover any CWT from these groups, nor were there any PIT-tag detections of returning adult fish from these groups at Lower Granite Dam during the 1997-98, 1998-1999, or 1999-2000 run years.

Hatchery Straying

Department and USFWS personnel recovered 858 CWT from hatchery steelhead at hatchery racks in Idaho, excluding Hells Canyon, during 2000. A total of 348 CWT were recovered at Dworshak National Fish Hatchery (DNFH) and Kooskia National Fish Hatchery (KNFH) on the Clearwater River, and 510 CWT at Pahsimeroi Fish Hatchery (PFH), East Fork trap, and the Sawtooth Fish Hatchery (SFH) on the upper Salmon River.

None of the direct hatchery released fish from the upper Salmon River strayed to a different hatchery rack in Idaho. Sixteen off-site released fish from the upper Salmon River returned to the hatchery rack at the PFH. None of the fish directly released from DNFH strayed to a different hatchery rack in Idaho. Thirty-eight fish returned to the DNFH rack from off-site releases into the South Fork of the Clearwater River. Twenty-three fish released into Clear Creek, near KNFH, returned to the DNFH rack. One fish returned to the KNFH rack and one to the DNFH rack from A-strain releases of fish into the Little Salmon River.

DISCUSSION

There are similarities among categories when we conduct between year comparisons of 1998-1999 (Hansen and White 2004) and 1999-2000 report years. For example, we estimate anglers caught 9,312 (Table 19) LSRCP-reared steelhead during 1999-2000 compared to 9,318 fish during 1998-1999 (Hansen and White 2004). Our data shows the number of fish released, number of fish examined for marks, mark rates, and sample rates were also similar for both reports.

Lower Granite Dam counts of 73,811 steelhead were slightly greater during 1999-2000 (Appendix F) compared to 70,721 fish for 1998-1999 (Hansen and White 2004). The present statewide harvest estimate of 27,063 fish (Table 18) reflects the slight increase of steelhead counted at Lower Granite Dam during 1999-2000. However, the dam count and statewide harvest estimate change is not reflected by an increase in the number of returning adult fish (9,312) contributed by LSRCP (Table 19). Creel survey notes and report data show that fishing conditions and exploitation rates generally improved during 1999-2000. Our present SAR is less for most completed return groups compared to 1998-1999 (Hansen and White 2004) and may account for the lack of change regarding the current LSRCP steelhead contribution number.

There was a 40% increase of wild A stock steelhead escapement and a 39% reduction of wild B stock escapement over Lower Granite Dam during 1999-2000 (Appendix F) compared to 1998-1999 (Hansen and White 2004). Catch-per-unit-effort data (Tables 3 – 17) show a 55% increase (964 total) regarding the number of wild fish released and a 25% increase (1,821 total) regarding the number of hatchery fish released by anglers compared to 1998-1999 (Hansen and White 2004a). We estimate that anglers fished 144 and 104 hours per wild fish caught during 1998-1999 (Hansen and White 2004) and 1999-2000, respectively.

Our data shows B-strain steelhead that originated from upper Salmon River stock returned at a greater rate compared to Dworshak stock (Table 20). This finding is consistent with every yearly comparison made thus far (Ball 1998, Ball 1999, Hansen and White 2003, Hansen and White 2004). We may make our last comparison of East Fork Salmon River stock and Dworshak stock steelhead in the 2000-2001 annual report, as the current data clearly shows East Fork Salmon River stock returns to the upper Salmon River at a greater rate compared to Dworshak stock.

Typically, we detect few or none of the fall releases, fingerling releases, or right ventral fin clipped fish from tributaries such as Red River, the South Fork Red River, and Crooked River during fisheries (Ball and White 2001, Hansen and White 2003; 2004). Sometimes, juvenile mark rates are too low to adequately determine adult return rates. However, when mark rates are adequate for these groups, our detection rate in the fishery is still low or nonexistent. Therefore, managers should review experimental releases that occur in the upper South Fork Clearwater River tributaries.

Table 20. Coded wire tag (CWT) recoveries of East Fork Salmon River steelhead releases – East Fork stock vs. Dworshak stock.

Release Year, Stock, Tag Codes, and No. of Fish Released	1-Ocean			2-Ocean			3-Ocean			No. Tags Recovered
	Harvest		Rack Returns	Harvest		Rack Returns	Harvest		Rack Returns	
	Downriver ^a	Idaho ^b		Downriver	Idaho		Downriver	Idaho		
<u>1989</u>										
East Fork Stock: CWT 10/41/44, 10/41/45, 10/41046, n = 44,064	1	0	4	18	9	3	0	0	0	35
Dworshak Stock: CWT 10/41/32, 10/41/33, 10/41/34 n = 43,569	0	0	1	0	5	1	0	1	0	8
<u>1990</u>										
East Fork Stock: CWT 10/42/36, 10/42/37, 10/42/38 n = 46,403	1	4	4	24	22	11 ^c	2	1	0	69
Dworshak Stock: CWT 10/42/33, 10/42/34, 10/42/35 n = 44,763	2	1	0	13	7	1	3	0	0	27
<u>1991</u>										
East Fork Stock: CWT 10/43/20, 10/43/21, 10/43/22 n = 66,383	5	1	7	20	12	3 ^d	3	1	0	52
Dworshak Stock: CWT 10/43/14 10/43/15, 10/43/16 n = 61,827	1	2	2	23	12	1	2	1	0	44
<u>1992</u>										
East Fork Stock: CWT 10/44/20 n = 20,821	0	2	1	6	1	2	0	0	0	12
Dworshak Stock: CWT 10/44/18, 10/44/19 n = 43,339	0	0	0	8	2	1 ^c		0	0	11
<u>1993</u>										
East Fork Stock No CWT groups	-	-	-	-	-	-	-	-	-	-
<u>Dworshak Stock:</u> CWT 10/50/05, 10/50/07, 10/50/09 n = 54,076	0	1	1	6	4	0		0	0	13

Table 20. Continued.

Release Year, Stock, Tag Codes, and No. of Fish Released	1-Ocean			2-Ocean			3-Ocean			No. Tags Recovered
	Harvest		Rack Returns	Harvest		Rack Returns	Harvest		Rack Returns	
	Downriver ^a	Idaho ^b		Downriver	Idaho		Downriver	Idaho		
<u>1994</u>										
East Fork Stock: CWT 10/47/11, 10/47/12, 10/47/13 n = 63,394	4	4	12	25	12	36 ^{c,e}	0	0	0	93
Dworshak Stock: CWT 10/47/10, 10/47/12, 10/47/22 n = 62,713	2	0	0	11	4	0	0	0	0	17
<u>1995</u>										
East Fork Stock: CWT 10/20/04 n = 61,767	1	3	11	1	18	3	0	0	0	37
Dworshak Stock: CWT 10/20/03, 10/20/04, 10/21/12 n = 61,079	2	1	0	3	6	0	0	0	0	12
<u>1996</u>										
East Fork Stock: CWT 10/52/19, 10/52/20, 10/52/21 n = 55,050	8	10	11	0	4	4	ND ^f	ND	ND	37
Dworshak Stock: CWT 10/52/22, 10/52/23, 10/52/24 n = 52,176	1	0	0	3	7	0	ND	ND	ND	11
<u>1997</u>										
East Fork Stock CWT 10/52/19, 10/52/20, 10/52/21 n = 55,050	8	10	11	0	4	4	ND ^f	ND	ND	37
Dworshak Stock: CWT 10/52/22, 10/52/23, 10/52/24 N = 52,176	1	0	0	3	7	0	ND	ND	ND	11
<u>1998</u>										
East Fork Stock: CWT 10/47/05, 10/47/06, 10/47/07 n = 63,241	0	2	2	ND	ND	ND	ND	ND	ND	4
Dworshak Stock: CWT 10/21/43, 10/21/44, 10/21/45 n = 61,110	0	0	0	ND	ND	ND	ND	ND	ND	0

^a Downriver recovers queried from Pacific States Marine Fisheries Commission CWT database on February 2, 2002.

^b Idaho in-state harvest only

^c includes one stray to Oxbow Fish Hatchery.

^d includes one stray to Pahsimeroi Fish Hatchery.

^e includes two strays to Slate Creek temporary weir.

^f ND = No data.

RECOMMENDATIONS

Continue to include coded wire tags in each major smolt release group that are representative in size, time of release, and fish health.

Review coded wire tag marking rates in terms of likelihood of recovery given creel sampling rates (especially for Clearwater River release groups and “test” groups).

Evaluate smolt-to adult survival, contribution to the sport fishery, and distribution of adults returning from off-site releases. Explore possible differential survival of off-site released fish as compared to direct hatchery released fish.

Enumerate adult returns in terms of contributions to fisheries and rack returns including fish released from the Squaw Creek Pond acclimation site (located near the upper Salmon River).

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APPENDICES

Appendix A. Coded-wire tag recoveries, by tag code, release site, and number of CWT smolts released, month and river section in which tags were recovered; and total harvest estimates by tag code for the 1999 -2000 season.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
05/39/57	B-1	Clearwater River	18,173	November	03	1	0.039	26
					Total	1		26
05/39/59	B-1	Clearwater River	20,296	November	03	1	0.039	26
					Total	1		26
05/39/62	B-1	Clearwater River	16,966	November	01	1	0.031	32
					Total	1		32
05/40/01	B-1	Clear Creek	18,840	October	03	1	0.055	18
					Total	1		18
05/41/48	B-2	Clearwater River	21,758	October	03	1	0.055	18
				November	03	1	0.039	26
				Total	2	44		
05/41/49	B-2	Clearwater River	21,075	October	03	1	0.055	18
				November	01	1	0.031	32
				December	03	1	0.055	18
				Total	3	68		
05/41/50	B-2	South Fork Clearwater River	20,481	November	03	1	0.039	26
				January	03	1	0.134	7
				Total	2	33		
05/41/51	B-2	Clearwater River	20,904	December	03	1	0.055	18
					Total	1		18
05/41/53	B-2	Clearwater River	20,503	October	01	1	0.044	23
					Total	1		23
05/41/54	B-2	Clearwater River	20,766	November	03	1	0.039	26
				January	03	1	0.134	7
				Total	2	33		
05/41/55	B-2	Clearwater River	20,741	December	03	1	0.055	18
				February	03	1	0.239	4
				Total	2	22		
05/41/56	B-2	Clearwater River	21,267	December	03	1	0.055	18
				February	03	1	0.239	4
				Total	2	22		
05/42/06	B-2	Clearwater River	21,063	December	03	1	0.055	18
					Total	1		18
05/42/07	B-2	Clearwater River	20,966	October	03	2	0.055	36
				December	03	1	0.055	18
				Total	3	54		

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
07/48/60	A-1	Imnaha River	13,565	December	01	1	0.030	33
09/23/29	A-1	Wallowa River	26,245	November	01	1	0.031	32
					Total	1		32
10/20/29	B-3	South Fork Clearwater River	63,743	March	07	1	0.275	4
					Total	1		4
10/21/29	B-2	South Fork Clearwater River	21,292	April	07	1	0.179	6
					Total	1		6
10/21/30	B-2	South Fork Clearwater River	21,163	November	01	1	0.031	32
				February	07	1	0.269	4
				April	07	1	0.179	6
					Total	3		42
10/21/34	A-1	Salmon River at Red Rock	21,407	October	12	1	0.225	4
				November	12	1	0.347	3
				November	15	2	0.296	7
				March	15	3	0.363	8
					Total	7		22
10/21/35	A-1	Salmon River at Red Rock	21,639	November	12	1	0.347	3
				November	13	1	0.202	5
				November	15	5	0.296	17
				March	14	1	0.016	63
				March	15	1	0.363	3
				March	16	2	0.145	14
					Total	11		105
10/21/36	A-1	Salmon River at Red Rock	16,299	October	12	1	0.225	4
				October	14	1	0.099	10
				November	14	2	0.254	8
				November	15	2	0.296	7
				March	15	2	0.363	6
				March	16	3	0.145	21
				April	17	1	0.258	4
					Total	12		60
10/21/37	A-1	Salmon River at Shoup Bridge	21,696	October	11	1	0.032	31
				October	15	3	0.186	16
				November	14	3	0.254	12
				November	15	3	0.296	10
				March	16	3	0.145	21
				April	16	1	0.429	2
					Total	14		92
10/21/38	A-1	Salmon River at Shoup Bridge	21,478	October	15	2	0.186	11
				October	16	1	0.164	6
				November	14	1	0.254	4
				November	15	3	0.296	10
				November	16	1	0.261	4
				March	15	5	0.363	14
				March	16	3	0.145	21
					Total	16		70

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/21/39	A-1	Salmon River at Shoup Bridge	17,514	October	14	1	0.099	10
				October	15	4	0.186	22
				November	14	1	0.254	4
				November	15	8	0.296	27
				November	16	1	0.261	4
				March	15	3	0.363	8
				Total	18			75
10/21/40	A-1	Salmon River at McNabbs Point	21,016	October	16	1	0.164	6
				November	15	2	0.296	7
				February	16	1	0.080	13
				March	14	1	0.016	63
				March	15	2	0.363	6
				March	16	1	0.145	7
				March	17	1	0.177	6
				March	18	2	0.115	17
Total	11			125				
10/21/41	A-1	Salmon River at McNabbs Point	20,192	October	15	5	0.186	27
				November	12	1	0.347	3
					14	1	0.254	4
				November	15	7	0.296	24
				March	15	1	0.363	3
				March	17	1	0.177	6
				April	18	2	0.260	8
Total	18			75				
10/21/42	A-1	Salmon River at McNabbs Point	19,786	October	14	2	0.099	20
				October	15	7	0.186	38
				November	12	2	0.347	6
				November	14	1	0.254	4
				November	15	4	0.296	14
				March	15	2	0.363	6
				March	18	2	0.115	17
				April	18	1	0.260	4
Total	21			109				
10/21/46	B-1	Slate Creek	21,173	November	14	1	0.254	4
				November	15	1	0.296	3
				Total	2			7
10/21/47	B-1	Slate Creek	21,178	March	15	1	0.363	3
Total	1			3				
10/21/48	B-1	Slate Creek	17,324	October	15	1	0.186	5
Total	1			5				
10/35/12	A-3	Salmon River at Lemhi River	61,673	March	15	1	0.363	3
Total	1			3				
10/35/13	A-3	Salmon River at Brunos Bridge	62,686	November	15	1	0.296	3
Total	1			3				

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/35/14	B-3	South Fork Clearwater River	63,551	February	03	1	0.239	4
					Total	1		4
10/45/02	B-2	Clear Creek	20,984	January	03	1	0.134	7
					Total	1		7
10/45/03	A-1	Sawtooth Hatchery	20,789	October	12	1	0.225	4
				October	14	1	0.099	10
				November	14	1	0.254	4
				November	15	3	0.296	10
				March	14	1	0.016	63
				March	15	3	0.363	8
				March	16	1	0.145	7
				March	17	1	0.177	6
				April	19	1	0.137	7
Total	13		119					
10/45/04	A-1	Sawtooth Hatchery	19,534	October	16	1	0.164	6
				November	15	4	0.296	14
				February	15	1	0.134	7
				March	14	1	0.016	63
				March	15	1	0.363	3
				March	17	1	0.177	6
				April	19	2	0.137	15
				Total	11		114	
10/45/47	A-1	Sawtooth Hatchery	18,337	October	15	5	0.186	27
				November	14	1	0.254	4
				November	15	3	0.296	10
				November	16	1	0.261	4
				February	14	1	0.016	63
				February	15	1	0.134	7
				March	15	3	0.363	8
				March	18	2	0.115	17
				April	18	1	0.260	4
Total	18		144					
10/45/48	A-1	Sawtooth Hatchery	17,839	October	14	1	0.099	10
				October	15	4	0.186	22
				November	15	4	0.296	14
				March	15	1	0.363	3
				April	19	1	0.137	7
				Total	11		56	
10/45/49	A-1	Sawtooth Hatchery	20,409	October	15	3	0.186	16
				October	16	1	0.164	6
				November	15	2	0.296	7
				February	15	3	0.134	22
				February	16	1	0.080	13
				March	14	2	0.016	125
				March	15	1	0.363	3
				April	19	1	0.137	7
				Total	14		199	

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/45/50	A-1	Sawtooth Hatchery	19,891	October	14	1	0.099	10
				October	15	4	0.186	22
				November	14	2	0.254	8
				November	15	1	0.296	3
				March	15	1	0.363	3
				April	18	2	0.260	8
				Total	11	54		
10/45/52	A-1	Salmon River at Hammer Creek	20,191	November	12	1	0.347	3
				Total	1	3		
10/45/53	A-1	Salmon River at Hammer Creek	17,768	November	12	2	0.347	6
				Total	2	6		
10/45/54	A-1	Little Salmon River	17,814	November	12	1	0.347	3
				March	12	1	0.738	1
				March	20	1	0.145	7
				Total	3	11		
10/45/55	A-1	Pahsimeroi Hatchery	19,945	October	12	1	0.225	4
				October	14	1	0.099	10
				October	15	1	0.186	5
				November	15	2	0.296	7
				March	15	3	0.363	8
				March	18	1	0.115	9
				Total	9	43		
10/45/56	A-1	Pahsimeroi Hatchery	20,070	October	15	2	0.186	11
				November	14	1	0.254	4
				November	15	2	0.296	7
				March	15	2	0.363	6
				March	16	1	0.145	7
				April	17	1	0.258	4
				Total	9	39		
10/45/57	A-1	Pahsimeroi Hatchery	20,162	October	15	2	0.186	11
				November	15	3	0.296	10
				Total	5	21		
10/45/58	A-1	Snake River at Hells Canyon Dam	21,064	November	15	1	0.296	3
				Total	1	3		
10/46/07	B-2	South Fork Clearwater River	21,794	October	03	1	0.055	18
				November	03	1	0.039	26
				December	03	1	0.055	18
				February	03	1	0.239	4
				February	04	2	0.275	7
				Total	6	73		

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest			
10/46/08	A-1	Sawtooth Hatchery	19,208	October	01	1	0.044	23			
				October	14	1	0.099	10			
				October	15	3	0.186	16			
				October	16	1	0.164	6			
				November	16	1	0.261	4			
				February	15	2	0.134	15			
				March	15	5	0.363	14			
				March	16	1	0.145	7			
				March	17	1	0.177	6			
				March	18	1	0.115	9			
				Total				17			110
10/46/09	A-1	Sawtooth Hatchery	20,927	October	15	2	0.186	11			
				November	13	1	0.202	5			
				November	14	1	0.254	4			
				November	15	3	0.296	10			
				March	15	2	0.363	6			
				April	19	3	0.137	22			
				Total				12			58
10/46/10	B-2	South Fork Clearwater River	21,451	March	07	2	0.275	7			
				Total				2		7	
10/46/14	A-1	Little Salmon River	10,544	November	12	1	0.347	3			
				March	20	2	0.145	14			
				Total				3		17	
10/46/63	B-2	Clear Creek	32,575	January	03	1	0.134	7			
				Total				1		7	
10/47/05	B-1	East Fork Trap	21,372	October	14	1	0.099	10			
				Total				1		10	
10/47/07	B-1	East Fork Trap	20,781	November	15	1	0.296	3			
				Total				1		3	
10/47/08	A-1	Little Salmon River	19,295	October	12	2	0.225	9			
				October	14	1	0.099	10			
				November	12	2	0.347	6			
				March	11	1	0.038	26			
				March	12	1	0.738	1			
				March	20	2	0.145	14			
Total				9			66				
10/47/17	A-1	Sawtooth Hatchery	19,103	October	14	1	0.099	10			
				October	15	1	0.186	5			
				November	14	2	0.254	8			
				November	15	6	0.296	20			
				November	16	1	0.261	4			
				November	17	1	0.115	9			
				February	16	1	0.080	13			
				March	15	3	0.363	8			
				March	16	1	0.145	7			
				March	17	3	0.177	17			
				April	18	1	0.260	4			
				Total				21			105

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/47/18	A-1	Sawtooth Hatchery	20,053	October	15	1	0186	5
				November	14	1	0.254	4
				November	15	4	0.296	14
				November	17	1	0.115	9
				March	15	2	0.363	6
				March	17	2	0.177	11
				March	19	1	0.041	24
				Total	12		73	
10/47/19	A-1	Sawtooth Hatchery	20,168	October	15	4	0186	22
				November	15	3	0.296	10
				November	16	2	0.261	8
				February	15	1	0.134	7
				February	16	1	0.080	13
				March	15	4	0.363	11
				March	17	1	0.177	6
				Total	16		77	
10/47/20	A-1	Sawtooth Hatchery	19,442	October	15	1	0186	5
				October	16	1	0.164	6
				November	15	3	0.296	10
				November	16	1	0.261	4
				February	15	1	0.134	7
				March	15	3	0.363	8
				March	17	1	0.177	6
				March	18	1	0.115	9
Total	12		55					
10/51/45	B-2	Clear Creek	31,672	March	04	1	0.120	8
				March	07	1	0.275	4
				Total	2		12	
10/51/46	A-2	Salmon River at Torreys Hole	57,115	November	14	1	0.254	4
				November	15	3	0.296	10
				November	16	1	0.261	4
				February	15	1	0.134	7
				March	14	1	0.016	63
				March	15	3	0.363	8
				Total	10		96	
10/51/47	A-2	Sawtooth Hatchery	31,770	October	12	1	0.225	4
				October	14	1	0.099	10
				October	15	1	0186	5
				November	15	3	0.296	10
				March	17	1	0.177	6
				March	18	1	0.115	9
				April	19	1	0.137	7
Total	9		51					
10/51/48	A-2	Sawtooth Hatchery	27,798	October	14	1	0.099	10
				November	15	1	0.296	3
				Total	2		13	

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/51/51	A-2	Sawtooth Hatchery	20,498	October	15	1	0.186	5
				November	15	1	0.296	3
				Total	2	2		8
10/51/52	A-2	Sawtooth Hatchery	20,267	October	16	1	0.164	6
				November	16	1	0.261	4
				Total	2	2		10
10/51/53	A-2	Sawtooth Hatchery	20,038	November	15	1	0.296	3
				March	15	1	0.363	3
				Total	2	2		6
10/51/54	A-2	Sawtooth Hatchery	19,301	November	16	1	0.261	4
				February	15	1	0.134	7
				Total	2	2		11
10/51/55	A-2	Sawtooth Hatchery	19,480	November	14	1	0.254	4
				March	15	3	0.363	8
				March	17	1	0.177	6
				Total	5	5		18
10/51/56	A-2	Sawtooth Hatchery	20,464	November	15	1	0.296	3
Total	1	1		3				
10/51/57	A-2	Sawtooth Hatchery	20,507	October	15	2	0.186	11
				November	15	1	0.296	3
				February	16	1	0.080	13
				Total	4	4		27
10/51/58	A-2	Sawtooth Hatchery	19,792	November	15	2	0.296	7
Total	2	2		7				
10/51/59	A-2	Sawtooth Hatchery	19,619	November	15	1	0.296	3
Total	1	1		3				
10/51/60	B-2	Slate Creek	20,273	November	14	1	0.254	4
Total	1	1		4				
10/52/03	A-2	Pahsimeroi Hatchery	19,932	April	17	1	0.258	4
Total	1	1		4				
10/52/04	A-2	Pahsimeroi Hatchery	18,898	March	15	2	0.363	6
Total	2	2		6				
10/52/06	B-2	Little Salmon River	19,407	November	12	1	0.347	3
				January	01	1	0.062	16
				Total	2	2		19
10/52/07	A-2	Salmon River at Hammer Creek	20,961	November	12	1	0.347	3
				November	13	1	0.202	5
				Total	2	2		8
10/52/08	A-2	Salmon River at Hammer Creek	20,408	October	13	1	0.055	18
				November	14	1	0.254	4
				April	16	1	0.429	2
				Total	3	3		24

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/52/09	A-2	Salmon River at Hammer Creek	17,211	October	15	1	0.186	5
				March	14	1	0.016	63
				Total	2	2	68	
10/52/10	A-2	Salmon River at McNabbs Point	17,402	March	15	1	0.363	3
				April	17	1	0.258	4
				Total	2	2	7	
10/52/11	A-2	Salmon River at McNabbs Point		October	15	2	0.186	11
				March	17	1	0.177	6
				Total	3	3	17	
10/52/12	A-2	Salmon River at McNabbs Point	14,694	November	15	1	0.296	3
Total	1	3						
10/52/14	A-2	Salmon River at Lemhi River	20,628	October	15	1	0.186	5
				November	15	1	0.296	3
				February	15	1	0.134	7
				Total	3	3	15	
10/52/15	A-2	Salmon River at Lemhi River	15,226	November	12	1	0.347	3
				Total	1	3		
10/52/16	A-2	Salmon River at North Fork	20,026	October	15	1	0.186	5
				November	14	1	0.254	4
				March	16	1	0.145	7
				Total	3	3	16	
10/52/17	A-2	Salmon River at North Fork	19,979	November	12	1	0.347	3
				Total	1	3		
10/52/18	A-2	Salmon River at North Fork	17,633	March	14	1	0.016	63
				March	15	2	0.363	6
				March	16	1	0.145	7
				Total	5	76		
10/52/19	B-2	East Fork Salmon River	19,376	October	14	1	0.099	10
				Total	1	10		
10/52/20	B-2	East Fork Salmon River	20,667	October	16	1	0.164	6
				February	15	1	0.134	7
				Total	2	13		
10/52/21	B-2	East Fork Salmon River	15,007	February	16	1	0.080	13
				Total	1	13		
10/52/22	B-2	East Fork Salmon River	19,347	February	12	1	0.347	3
				April	18	1	0.260	4
				Total	2	7		
10/52/23	B-2	East Fork Salmon River	19,797	February	14	1	0.016	63
				March	15	2	0.363	6
				Total	3	69		

Appendix A. Continued.

Tag Code	Strain and Ocean-age	Release Site	No. Fish Released	Recovery Month	River Section (Total)	No. Tags	Sample Rate	Estimated Harvest
10/52/24	B-2	East Fork Salmon River	13,032	November	15	2	0.296	7
					Total	2		7
63/04/24	A-1	Touchet River	20,265	October	01	1	0.044	23
					Total	1		23
63/61/27	A-1	Grande Ronde River	24,337	December	01	1	0.030	33
					Total	1		33
63/61/28	A-1	Grande Ronde River	24,261	October	01	1	0.044	23
					Total	1		23
63/61/29	A-1	Tucannon River	24,831	October	01	1	0.044	23
				October	03	3	0.055	55
					Total	4		78

Appendix B. Steelhead groups expected to return to the Salmon River, 1999-2000.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
A	1	20,789	Sawtooth Hatchery	HNFH ^a	10/45/03
A	1	19,534	Sawtooth Hatchery	HNFH	10/45/04
A	1	19,442	Sawtooth Hatchery	HNFH	10/47/20
A	1	18,337	Sawtooth Hatchery	HNFH	10/45/47
A	1	17,839	Sawtooth Hatchery	HNFH	10/45/48
A	1	20,409	Sawtooth Hatchery	HNFH	10/45/49
A	1	19,891	Sawtooth Hatchery	HNFH	10/45/50
A	1	19,208	Sawtooth Hatchery	HNFH	10/46/08
A	1	20,927	Sawtooth Hatchery	HNFH	10/46/09
A	1	19,103	Sawtooth Hatchery	HNFH	10/47/17
A	1	20,053	Sawtooth Hatchery	HNFH	10/47/18
A	1	20,168	Sawtooth Hatchery	HNFH	10/47/19
A	1	447,515	Sawtooth Hatchery	HNFH	None
A	1	21,016	Salmon River at McNabbs Point	MV FH ^b	10/21/40
A	1	20,192	Salmon River at McNabbs Point	MV FH	10/21/41
A	1	19,786	Salmon River at McNabbs Point	MV FH	10/21/42
A	1	97,666	Salmon River at McNabbs Point	MV FH	None
A	1	142,650	Salmon River at Cottonwood Campground	MV FH	None
A	1	19,945	Pahsimeroi Hatchery	NSFH ^c	10/45/55
A	1	20,070	Pahsimeroi Hatchery	NSFH	10/45/56
A	1	20,162	Pahsimeroi Hatchery	NSFH	10/45/57
A	1	741,364	Pahsimeroi Hatchery	NSFH	None
A	1	21,696	Salmon River at Shoup Bridge	MV FH	10/21/37
A	1	21,478	Salmon River at Shoup Bridge	MV FH	10/21/38
A	1	17,514	Salmon River at Shoup Bridge	MV FH	10/21/39
A	1	48,227	Salmon River at Shoup Bridge	MV FH	None
A	1	154,565	Salmon River at Lemhi River	MV FH	None

Appendix B. Continued.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
A	1	21,639	Salmon River at Red Rock	MVFH	10/21/35
A	1	16,299	Salmon River at Red Rock	MVFH	10/21/36
A	1	77,715	Salmon River at Red Rock	MVFH	None
A	1	17,814	Little Salmon River	NSFH	10/45/54
A	1	8,183	Little Salmon River	NSFH	10/46/15
A	1	531	Little Salmon River	NSFH	None
A	1	10,544	Little Salmon River	HNFH	10/46/14
A	1	19,295	Little Salmon River	HNFH	10/47/08
A	1	317,631	Little Salmon River	HNFH	None
A	1	21,126	Salmon River at Hammer Creek	NSFH	10/45/51
A	1	20,191	Salmon River at Hammer Creek	NSFH	10/45/52
A	1	17,768	Salmon River at Hammer Creek	NSFH	10/45/53
A	1	82,235	Salmon River at Hammer Creek	NSFH	None
A	1	31,160	Salmon River at Pine Bar Rapids	NSFH	None
	Total	2,733,084			
A	2	84,715	Sawtooth Hatchery	MVFH	None
A	2	31,770	Sawtooth Hatchery	HNFH	10/51/47
A	2	27,798	Sawtooth Hatchery	HNFH	10/51/48
A	2	20,498	Sawtooth Hatchery	HNFH	10/51/51
A	2	20,267	Sawtooth Hatchery	HNFH	10/51/52
A	2	20,038	Sawtooth Hatchery	HNFH	10/51/53
A	2	19,301	Sawtooth Hatchery	HNFH	10/51/54
A	2	19,480	Sawtooth Hatchery	HNFH	10/51/55
A	2	20,464	Sawtooth Hatchery	HNFH	10/51/56
A	2	20,507	Sawtooth Hatchery	HNFH	10/51/57
A	2	19,792	Sawtooth Hatchery	HNFH	10/51/58
A	2	19,619	Sawtooth Hatchery	HNFH	10/51/59
A	2	361,636	Sawtooth Hatchery	HNFH	None
A	2	57,115	Salmon River at Torreys Hole	HNFH	10/51/46 ^d
A	2	6,801	Salmon River at Torreys Hole	HNFH	None

Appendix B. Continued.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
A	2	17,402	Salmon River at McNabbs Point	MVFH	10/52/10
A	2	17,574	Salmon River at McNabbs Point	MVFH	10/52/11
A	2	14,694	Salmon River at McNabbs Point	MVFH	10/52/12
A	2	104,801	Salmon River at McNabbs Point	MVFH	None
A	2	75,946	Salmon River at McNabbs Point	HNFH	None
A	2	150,280	Salmon River at Brunos Bridge	MVFH	None
A	2	10,298	Pahsimeroi Hatchery	NSFH	10/51/03
A	2	10,565	Pahsimeroi Hatchery	NSFH	10/51/04
A	2	19,932	Pahsimeroi Hatchery	NSFH	10/52/03
A	2	18,898	Pahsimeroi Hatchery	NSFH	10/52/04
A	2	770,961	Pahsimeroi Hatchery	NSFH	None
A	2	20,560	Salmon River at Lemhi River	MVFH	10/52/13
A	2	20,628	Salmon River at Lemhi River	MVFH	10/52/14
A	2	15,226	Salmon River at Lemhi River	MVFH	10/52/15
A	2	185,096	Salmon River at Lemhi River	MVFH	None
A	2	20,026	Salmon River at North Fork	MVFH	10/52/16
A	2	19,979	Salmon River at North Fork	MVFH	10/52/17
A	2	17,633	Salmon River at North Fork	MVFH	10/52/18
A	2	76,672	Salmon River at North Fork	MVFH	None
A	2	19,988	Little Salmon River	NSFH	10/51/63
A	2	74,827	Little Salmon River	NSFH	None
A	2	10,977	Little Salmon River	HNFH	10/51/05
A	2	20,939	Little Salmon River	HNFH	10/52/05
A	2	310,365	Little Salmon River	HNFH	None
A	2	20,961	Salmon River at Hammer Creek	NSFH	10/52/07 ^d
A	2	20,408	Salmon River at Hammer Creek	NSFH	10/52/08 ^d
A	2	17,211	Salmon River at Hammer Creek	NSFH	10/52/09 ^d
A	2	75,235	Salmon River at Hammer Creek	NSFH	None
A	2	4,018	Salmon River at Hammer Creek	NSFH	None
A	2	29,700	Salmon River at Pine Bar Rapids	NSFH	None
	Total	2,941,601			

Appendix B. Continued.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
B	1	21,173	Slate Creek	MVFH	10/21/46 ^e
B	1	21,178	Slate Creek	MVFH	10/21/47 ^e
B	1	17,324	Slate Creek	MVFH	10/21/48 ^e
B	1	114,905	Slate Creek	MVFH	None ^{e&f}
B	1	52,800	Squaw Creek Pond	MVFH	None
B	1	20,367	East Fork Salmon River	MVFH	10/21/43 ^f
B	1	20,932	East Fork Salmon River	MVFH	10/21/44 ^f
B	1	19,811	East Fork Salmon River	MVFH	10/21/45 ^f
B	1	260,615	East Fork Salmon River	MVFH	None ^f
B	1	21,372	East Fork Trap	MVFH	10/47/05 ^e
B	1	21,088	East Fork Trap	MVFH	10/47/06 ^e
B	1	20,781	East Fork Trap	MVFH	10/47/07 ^e
B	1	63,679	East Fork Trap	MVFH	None ^{e&f}
B	1	21,428	Little Salmon River	MVFH	10/21/31 ^f
B	1	20,983	Little Salmon River	MVFH	10/21/32 ^f
B	1	20,212	Little Salmon River	MVFH	10/21/33 ^f
B	1	218,327	Little Salmon River	MVFH	None ^f
	Total	956,975			
B	2	20,273	Slate Creek	MVFH	10/51/60 ^f
B	2	21,448	Slate Creek	MVFH	10/51/61 ^f
B	2	15,480	Slate Creek	MVFH	10/51/62 ^f
B	2	156,010	Slate Creek	MVFH	None ^f
B	2	19,376	East Fork Trap	MVFH	10/52/19 ^e
B	2	20,667	East Fork Trap	MVFH	10/52/20 ^e
B	2	15,007	East Fork Trap	MVFH	10/52/21 ^e
B	2	76,170	East Fork Trap	MVFH	None ^e
B	2	19,347	East Fork Salmon River	MVFH	10/52/22 ^f
B	2	19,797	East Fork Salmon River	MVFH	10/52/23 ^f
B	2	13,032	East Fork Salmon River	MVFH	10/52/24 ^f

Appendix B. Continued.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
B	2	240,778	East Fork Salmon River	MVFH	None ^f
B	2	9,505	Little Salmon River	MVFH	10/51/06 ^f
B	2	19,407	Little Salmon River	MVFH	10/52/06 ^f
B	2	211,618	Little Salmon River	MVFH	None ^f
	Total	877,915			
B	3	61,695	Slate Creek	MVFH	10/35/07 ^{d,f}
B	3	174,602	Slate Creek	MVFH	None ^f
B	3	63,013	East Fork Salmon River	MVFH	10/35/08 ^{d,f}
B	3	326,121	East Fork Salmon River	MVFH	None ^f
B	3	10,806	East Fork Trap	MVFH	10/46/13 ^{d,e}
B	3	22,050	East Fork Trap	MVFH	10/47/09 ^e
B	3	30,064	East Fork Trap	MVFH	None ^e
B	3	38,320	East Fork Salmon River at Herd Creek	MVFH	None ^f
B	3	62,227	Little Salmon River	MVFH	10/35/09 ^{d,f}
B	3	341,054	Little Salmon River	MVFH	None ^f
	Total	1,129,952			

^a HNFH = Hagerman National Fish Hatchery.

^b MVFH = Magic Valley Steelhead Hatchery.

^c NSFH = Niagara Springs Fish Hatchery.

^d Release group includes fish marked with passive integrated transponder (PIT) tags.

^e East Fork Salmon River stock.

^f Dworshak National Fish Hatchery stock.

Appendix C. Steelhead groups expected to return to the Clearwater River, 1999 – 2000.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
B	1	18,173	Clearwater River	DNFH ^a	05/39/57
B	1	21,015	Clearwater River	DNFH	05/39/58
B	1	20,296	Clearwater River	DNFH	05/39/59
B	1	20,939	Clearwater River	DNFH	05/39/60
B	1	17,804	Clearwater River	DNFH	05/39/61
B	1	16,966	Clearwater River	DNFH	05/39/62
B	1	17,965	Clearwater River	DNFH	05/39/63
B	1	1,095,786	Clearwater River	DNFH	None
B	1	18,840	Clear Creek	DNFH	05/40/01
B	1	16,023	Clear Creek	DNFH	10/52/27
B	1	256,123	Clear Creek	DNFH	None
B	1	20,851	Clear Creek	CFH ^b	10/52/25 ^c
B	1	144,633	Clear Creek	CFH	None
B	1	30,601	Clearwater River at Kooskia Bridge	DNFH	None
B	1	21,859	South Fork Clearwater River	CFH	10/47/38 ^c
B	1	21,079	South Fork Clearwater River	CFH	10/47/39 ^c
B	1	21,093	South Fork Clearwater River	CFH	10/47/40 ^c
B	1	468,274	South Fork Clearwater River	CFH	None
B	1	18,711	South Fork Clearwater River	DNFH	10/52/26
B	1	20,316	South Fork Clearwater River	DNFH	10/52/28
B	1	567,174	South Fork Clearwater River	DNFH	None
B	1	4,497	Red River	CFH	None ^c
	Total	2,859,018			
B	2	32,575	Clear Creek	CFH	10/46/63
B	2	31,672	Clear Creek	CFH	10/51/45
B	2	114,966	Clear Creek	CFH	None
B	2	20,984	Clear Creek	DNFH	10/45/02
B	2	162,294	Clear Creek	DNFH	None
B	2	21,836	Clearwater River	DNFH	05/41/47
B	2	21,758	Clearwater River	DNFH	05/41/48

Appendix C. Continued.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
B	2	21,075	Clearwater River	DNFH	05/41/49
B	2	20,904	Clearwater River	DNFH	05/41/51
B	2	20,503	Clearwater River	DNFH	05/41/53
B	2	20,766	Clearwater River	DNFH	05/41/54
B	2	20,741	Clearwater River	DNFH	05/41/55
B	2	21,267	Clearwater River	DNFH	05/41/56
B	2	21,063	Clearwater River	DNFH	05/42/06
B	2	20,966	Clearwater River	DNFH	05/42/07
B	2	1,150,155	Clearwater River	DNFH	None
B	2	215,534	Clearwater River at Kooskia Bridge	DNFH	None
B	2	21,292	South Fork Clearwater River	CFH	10/21/29 ^c
B	2	21,163	South Fork Clearwater River	CFH	10/21/30 ^c
B	2	21,451	South Fork Clearwater River	CFH	10/46/10 ^c
B	2	357,267	South Fork Clearwater River	CFH	None
B	2	20,481	South Fork Clearwater River	DNFH	05/41/50
B	2	21,794	South Fork Clearwater River	DNFH	10/46/06
B	2	21,041	South Fork Clearwater River	DNFH	10/46/07
B	2	665,012	South Fork Clearwater River	DNFH	None
B	2	75,894	Crooked River	CFH	None
B	2	4,991	Red River	CFH	None ^c
B	2	42,426	South Fork Red River	CFH	10/51/20 ^e
B	2	6,304	South Fork Red River	CFH	None ^e
	Total	3,218,175			
B	3	63,556	Clear Creek	CFH	10/30/53 ^c
B	3	234,886	Clear Creek	CFH	None
B	3	21,913	Clear Creek	DNFH	05/31/46
B	3	344,653	Clear Creek	DNFH	None
B	3	21,751	Clearwater River	DNFH	05/31/44
B	3	21,310	Clearwater River	DNFH	05/31/45
B	3	20,360	Clearwater River	DNFH	05/31/49
B	3	20,276	Clearwater River	DNFH	05/31/50
B	3	18,612	Clearwater River	DNFH	05/31/51
B	3	20,670	Clearwater River	DNFH	05/37/22

Appendix C. Continued.

Strain	Ocean Age	No. of Fish	Release Site	Hatchery Rearing	Marks
B	3	20,804	Clearwater River	DNFH	05/37/23
B	3	19,034	Clearwater River	DNFH	05/40/05
B	3	21,197	Clearwater River	DNFH	05/40/06
B	3	18,803	Clearwater River	DNFH	05/40/07
B	3	1,174,618	Clearwater River	DNFH	None
B	3	6,164	Red River	CFH	10/46/30
B	3	8,198	Red River	CFH	None ^c
B	3	46,018	Crooked River	CFH	None ^c
B	3	40,970	South Fork Red River	CFH	10/20/22 ^{e,f}
B	3	6,256	South Fork Red River	CFH	None ^{e,f}
B	3	61,878	South Fork Clearwater River	DNFH	05/32/12
B	3	520,489	South Fork Clearwater River	DNFH	None
B	3	63,743	South Fork Clearwater River	CFH	10/20/29 ^c
B	3	117,471	South Fork Clearwater River	CFH	None
B	3	63,551	South Fork Clearwater River	CFH	10/35/14 ^c
B	3	57,739	South Fork Clearwater River	CFH	None
B	3	64,254	South Fork Clearwater River	CFH	10/35/15 ^c
B	3	61,755	South Fork Clearwater River	CFH	None
	Total	3,160,929			

^a DNFH = Dworshak National Fish Hatchery.

^b CFH = Clearwater Fish Hatchery.

^c Release group includes fish marked with passive integrated transponder (PIT) tags.

^d Fingerling release.

^e Fall release.

Appendix D. Statewide harvest estimate^a of steelhead by section and month by resident and nonresident anglers, fall 1999 and spring 2000.

<u>Fall 1999 Steelhead Harvest</u>					
River Section	September	October	November	December	Total
Snake River					
01	251	918	1,175	537	2,882
Subtotal	251	918	1,175	537	2,882
Clearwater River					
03	326	2,065	1,305	1,070	4,766
04	0	63	125	95	283
05	0	0	142	158	300
07	0	0	16	0	16
Subtotal	326	2,128	1,588	1,323	5,365
Salmon River					
10	75	848	370	187	1,479
11	0	280	542	289	1,111
12	0	316	297	198	811
13	0	219	124	46	389
14	30	946	394	46	1,415
15	32	1,710	1,725	310	3,777
16	14	225	326	105	670
17	0	29	78	32	138
18	0	0	0	0	0
19	0	0	0	0	0
20	0	32	63	111	205
Subtotal	151	4,604	3,918	1,324	9,995
Total	728	7,650	6,681	3,184	18,242

Appendix D. Continued.

River Section	<u>Spring 2000 Steelhead Harvest</u>				
	January	February	March	April	Total
Snake River					
01	81	14	0	0	95
Subtotal	81	14	0	0	95
Clearwater River					
03	476	275	94	0	845
04	97	109	133	14	353
05	54	81	28	0	163
07	0	67	204	179	450
Subtotal	628	531	460	193	1,811
Salmon River					
10	106	158	25	0	289
11	82	28	132	14	256
12	53	0	42	0	95
13	0	25	28	0	53
14	12	126	0	0	138
15	28	568	818	250	1,664
16	195	361	754	28	1,338
17	26	94	691	186	997
18	12	75	546	204	837
19	0	12	267	395	674
20	0	14	207	353	574
Subtotal	514	1,462	3,508	1,429	6,915
Total	1,223	2,077	3,968	1,622	8,821

^a Statewide harvest survey data from Thomas J. McArthur, IDFG, (unpublished). Only LSRCP creel areas are reported in this table.

Appendix E. Estimated steelhead run composition at Bonneville Dam, April 1 - November 15, 1999.

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Week	Dam Count	Sample Size	Dam Count %	No. Nat. ^a		No. Hatch. ^c		No. Nat.		No. Hatch.		Estimated Counts			
				<77.5 ^b	%	<77.5	%	>77.5	%	>77.5	%	Nat. <77.5	Hatch. <77.5	Nat. >77.5	Hatch. >77.5
4/1-6/6	2,525	75	3.0	12	16.0	45	60.0	0	0.0	18	24.0	404	1,515	0	606
6/8-13	828	31	3.7	4	12.9	20	64.5	3	9.7	4	12.9	107	534	80	107
6/14-20	1,204	56	4.7	13	23.2	35	62.5	0	0.0	8	14.3	280	753	0	172
6/21-27	1,708	76	4.4	13	17.1	58	76.3	0	0.0	5	6.6	292	1,303	0	112
6/28-7/4	2,687	94	3.5	27	28.7	63	67.0	2	2.1	2	2.1	772	1,801	57	57
7/5-11	5,655	210	3.7	78	37.1	122	58.1	4	1.9	6	2.9	2,100	3,285	108	162
7/12-18	9,930	402	4.0	195	48.5	199	49.5	3	0.7	5	1.2	4,817	4,916	74	124
7/19-25	12,732	405	3.2	200	49.4	198	48.9	6	1.5	1	0.2	6,287	6,225	189	31
7/26-8/1	20,975	436	2.1	174	39.9	259	59.4	1	0.2	2	0.5	8,371	12,460	48	96
8/2-8	23,380	513	2.2	205	40.0	305	59.5	1	0.2	2	0.4	9,343	13,900	46	91
8/9-15	23,329	256	1.1	102	39.8	152	59.4	0	0.0	2	0.8	9,295	13,852	0	182
8/16-22	22,932	395	1.7	100	25.3	289	73.2	2	0.5	4	1.0	5,806	16,778	116	232
8/23-29	21,390	391	1.8	71	18.2	304	77.8	3	0.8	13	3.3	3,884	16,631	164	711
8/30-9/5	15,756	301	1.9	60	19.9	198	65.8	10	3.3	33	11.0	3,141	10,364	523	1,727
9/6-12	11,824	210	1.8	24	11.4	114	54.3	10	4.8	62	29.5	1,351	6,419	563	3,491
9/13-19	11,498	174	1.5	11	6.3	76	43.7	13	7.5	74	42.5	727	5,022	859	4,890
9/20-26	7,636	209	2.7	22	10.5	98	46.9	13	6.2	76	36.4	804	3,581	475	2,777
9/27-10/3	4,666	190	4.1	11	5.8	95	50.0	5	2.6	79	41.6	270	2,333	123	1,940
10/4-10	2,448	100	4.1	11	11.0	66	66.0	3	3.0	20	20.0	269	1,616	73	490
10/11-17	1,317	53	4.0	9	17.0	33	62.3	3	5.7	8	15.1	224	820	75	199
1/18-11/15	1,737	30	1.7	9	33.0	16	53.3	2	6.7	3	10.0	521	926	116	174
Total	206,157	4,607	2.2	1,351		2,745		84		427		59,065	125,034	3,689	18,371
%												28.7	60.6	1.8	9.0
Adjusted Total ^e												58,727		3,924	

^a Nat. = Naturally-produced.

^b All fish measured in centimeter fork length.

^c Hatch. = Hatchery origin.

^e Estimates adjusted for overlap in lengths of A-strain and B-strain steelhead. Two percent of naturally produced A-strain steelhead are longer than 77 cm. Thirty-six percent of naturally-produced B-strain fish are shorter than 78 cm.

Appendix F. Estimated steelhead run composition at Lower Granite Dam, June 1 - December 15, 1999, and March 1 - May 31, 2000.

Week	Dam Count	Sample Size	Dam Count %	No. Nat. ^a		No. Hatch. ^c		No. Nat.		No. Hatch.		Estimated Counts			
				<77.5 ^b	%	<77.5	%	>77.5	%	>77.5	%	Nat. <77.5	Hatch. <77.5	Nat. >77.5	Hatch. >77.5
6/1-9/2	16,093	175	1.1	28	16.0	145	82.9	0	0.0	2	1.1	2,575	13,334	0	184
9/13-19	5,477	200	3.7	29	14.5	160	80.0	3	1.5	8	4.0	794	4,382	82	219
9/20-26	13,815	203	1.5	29	14.3	152	74.9	4	2.0	18	8.9	1,974	10,344	272	1,225
9/27-10/3	11,363	308	2.7	35	11.4	219	71.1	3	1.0	51	16.6	1,291	8,080	111	1,882
10/4-10	8,436	301	3.6	42	14.0	183	60.8	5	1.7	71	23.6	1,177	5,129	140	1,990
10/11-17	6,030	301	5.0	26	8.6	204	67.8	5	1.7	66	21.9	521	4,087	100	1,322
10/18-24	3,107	199	6.4	27	13.6	123	61.8	5	2.5	44	22.1	422	1,920	78	687
10/25-31	2,272	115	5.1	10	8.7	87	75.7	1	0.9	17	14.8	198	1,718	20	336
11/1-7	1,458	115	7.9	16	13.9	78	67.8	1	0.9	20	17.4	203	989	13	254
11/8-14	962	50	5.2	8	16.0	38	76.0	0	0.0	4	8.0	154	731	0	77
11/15-21	883	26	2.9	2	7.7	21	80.8	1	3.8	2	7.7	68	713	34	68
11/22-12/15	1,436	28	1.9	1	3.6	22	78.6	0	0.0	5	17.9	51	1,128	0	256
3/1-19	993	19	1.9	3	15.8	12	63.2	0	0.0	4	21.1	157	627	0	209
3/20-26	278	53	19.1	21	39.6	30	56.6	0	0.0	2	3.8	110	157	0	10
3/27-4/2	272	41	15.1	14	34.1	19	46.3	2	4.9	6	14.6	93	126	13	40
4/3-5/31	936	41	4.4	15	36.6	21	51.2	2	4.9	3	7.3	342	479	46	68
Total	73,811	2,175	2.9	306		1,514		32		323		10,130	53,944	909	8,827
%												13.7	73.1	1.2	12.0
Adjusted Total ^d												12,311		-1,273	

^a Nat. = Naturally-produced.

^b All fish measured in centimeter fork length.

^c Hatch. = Hatchery origin.

^d Estimates adjusted for overlap in lengths of A-strain and B-strain steelhead. Fourteen percent of naturally-produced A-strain steelhead are longer than 77 cm. Thirty-six percent of naturally-produced B-strain steelhead are shorter than 78 cm. The model calculates adjusted estimates as negative numbers when the estimated number of naturally-produced fish < 77.5 cm fork length is more than 6.15 times the number of naturally-produced fish > 77.5 cm fork length.

Appendix G. Miscellaneous coded wire tag steelhead groups that were recovered by Idaho anglers, 1999 - 2000.

Strain	Age	No. of Fish	Release Site	Recovered In River Section	Tagging Agency	Marks
A	1	13,565	Imnaha River	01	ODFW ^a	CWT 07/48/60
A	1	26,245	Wallowa River	01	ODFW	CWT 09/23/29
A	1	20,265	Touchet River	01	WDFW ^b	CWT 63/04/24
A	1	24,337	Grande Ronde River	01	WDFW	CWT 63/61/27
A	1	24,261	Grande Ronde River	01	WDFW	CWT 63/61/28
A	1	24,831	Tucannon River	01,03	WDFW	CWT 63/61/29

^a ODFW = Oregon Department of Fish and Wildlife.

^b WDFW = Washington Department of Fish and Wildlife

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