

IDAHO DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

FEDERAL AID TO FISH AND WILDLIFE RESTORATION

Job Performance Report

Project F-71-R-5



REGIONAL FISHERY MANAGEMENT INVESTIGATIONS

Job II-a. Region 2 Mountain Lake Investigations
Job II-b. Region 2 Lowland Lake Investigation
Job II-c. Region 2 Stream Investigations
Job II-d. Region 2 Technical Guidance
Job II-e. Salmon and Steelhead Investigations

by

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JOB PERFORMANCE REPORT

State of Idaho Name: REGIONAL FISHERY MANAGEMENT

Project No. F-71-R-5 INVESTIGATIONS

Job No. II-a. Title: Region 2 Mountain Lake
Investigations

Period Covered: 1 January 1980 to 31 December 1980

ABSTRACT

Creel census information was collected on 42 different mountain lakes within Region 2 during 1980. The 110 anglers who were either checked in the field, or returned mountain lake census forms, had fished a total of 358 hours to catch 57 rainbow trout, 365 cutthroat, 54 rainbow-cutthroat hybrids and 22 brook trout. The average overall catch rate was 1.4 fish per hour.

Four lakes in the Region were surveyed to obtain basic information on spawning potential, shoreline cover, relative fish population density and relative angler use.

In cooperation with U. S. Forest Service personnel, we again evaluated the success of the Fish Lake (Cedars) cutthroat spawning enhancement project. A Peterson mark-and-recapture population estimate was made on the cutthroat population in Fish Lake during the summer of 1980.

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RECOMMENDATIONS

Regional personnel should intensify efforts to collect creel census information from mountain lakes (by field contacts or return of mountain lake census forms) as a means of evaluating the success of fish stocking programs.

Lake morphology, spawning potential and species composition should be investigated on as many lakes as time permits.

OBJECTIVES

To evaluate the success of fish releases in the mountain lakes of Region 2.

To monitor angler success and relative amount of angler use at Region 2 mountain lakes.

To collect basic data on spawning potential, lake morphology, species composition, population densities and shoreline cover on mountain lakes in the Region.

TECHNIQUES USED

Idaho Fish and Game Department personnel interviewed anglers at several mountain lakes in Region 2, to collect information on angler success, angler residency and species composition of the catch. Mountain lake census forms were also distributed to anglers who stopped by the Regional Office or sent letters inquiring about specific lakes. U. S. Forest Service personnel from the Powell Ranger District distributed mountain lake creel census forms at various access points to obtain basic census data.

Department personnel completed "Mountain Lake Analysis" cards for Big Sand Lake, Isaac Lake, Maple Lake and Lost Lakes. Species abundance, size classes, spawning potential, availability of shoreline cover and relative angler use were noted.

U. S. Forest Service and Idaho Department of Fish and Game personnel again evaluated the success of the cutthroat enhancement project on Fish Lake. We caught, tagged and recaptured cutthroat to obtain a rough population estimate. Department personnel also conducted an intensive creel census on opening weekend and obtained length frequencies on both cutthroat and Dolly Varden from Fish Lake.

FINDINGS

Creel Census

Idaho Fish and Game Department personnel collected creel census information on 14 mountain lakes in the Region during 1980. The 31 anglers who either sent in mountain lake census forms, or were interviewed in the field, had fished 68 hours to catch 57 cutthroat (89.0%), 5 rainbow-cutthroat hybrids (7.8%), 1 brook trout (1.6%) and 1 Dolly Varden (1.6%). Catch rates on these lakes averaged 0.94 fish per hour. All anglers interviewed were Idaho residents. Appendix 1 summarizes these census data.

U. S. Forest Service personnel at Powell Ranger Station received replies on their questionnaire from 23 mountain lakes in the Powell District. Eighty anglers had fished 290 hours to catch 487 trout. Of these 73.9% were cutthroat, 11.7% rainbow, 10.1% hybrids, and 4.3% brook trout (Table 1).

Lake Surveys

Big Sand Lake

Big Sand Lake lies near the headwaters of Big Sand Creek, which is a tributary to White Sand Creek. The lake supports naturally reproducing populations of cutthroat trout and brook trout, and, therefore, is not stocked. The 2 August 1980 ocular survey revealed a high density of cutthroat trout in the 8-12 inch size group, and a low density of small (6") brook trout. Several miles of good spawning gravel is available in the outlet. Shoreline cover consists of a few submerged logs. Angler use is moderate to heavy and cutthroat outnumber brook trout by about 15:1 in the creel.

Isaac Lake

Isaac Lake lies at the headwaters of Isaac Creek, which is a tributary to the North Fork of Moose Creek. The lake has been stocked with both rainbow and cutthroat fry. The 28 August 1980 survey revealed a medium density of cutthroat and rainbow-cutthroat hybrids ranging from 6 to 10 inches. Both the inlet and outlet have sand-mud bottoms with no spawning potential. The lake is heavily utilized by moose. Shoreline cover consists of a few submerged logs. Angler use is light.

Maple Lake

Maple Lake lies at the headwaters of Maple Creek, which is a tributary to the North Fork of Moose Creek. The lake has been stocked with cutthroat fry. The 29 August 1980 survey revealed a medium density of 6-10 inch cutthroat. The lake bottom and outlet are mainly sand with no spawning habitat. Shoreline cover consists of a few submerged logs. Angler use is light.

Lost Lakes

The three Lost Lakes lie at the headwaters of Cayuse Creek, which is a tributary to Kelly Creek. They support naturally reproducing populations of cutthroat and are not stocked. The 16 September 1980 survey revealed a high density of cutthroat in the upper two lakes. The lower of the three lakes is quite shallow, and no trout were observed in it. Cutthroat caught ranged from 4 to 9 inches. Good spawning gravel is available in the streams connecting the lakes. Shoreline cover consists of reeds, grasses and a few submerged logs. Angler use is light.

Fish Lake (Cedars)

Fish Lake lies at the head of Fish Lake Creek, which is a tributary to the North Fork of the Clearwater River. The lake supports naturally reproducing populations of westslope cutthroat and Dolly Varden.

Table I . Summary of high mountain Lake fishing survey forms distributed at access points in the Powell Ranger District, 1980 (USFS).

Lake	Anglers	Hours Fished	Species Caught				F/Hr	F/A
			RB	CT	RBXCT	BK		
Beaver	3	13	17-b	0	0	0	1.3	5.7
Big Sand	9	68	10-b*	1-a	0	4-b	1.0	7.2
			12-c*	32-b		1-c		
				5-c				
Duck	1	1	0	1-a	0	0	1.0	1.0
Garnet	1	3	0	8-a	0	0	2.7	8.0
Goat	4	15	0	44-b	0	0	3.2	12.0**
				4-c				
Hidden	2	13	0	17-b	0	0	3.6	21.5**
				26-c				
Lower Hidden	1	1	0	1-b	0	0	1.0	1.0
Hoodoo	2	5	0	2-b	0	10-b	4.8	12.0**
				6-c		6-c		
Hungry	4	23	7-a	5-a	1-a	0	0.7	4.2
			1-b	3-b				
N. Indian Post Office	6	15	0	11-b	0	0	0.7	1.8
S. Indian Post Office	1	2	0	0	0	0	0.0	0.0
Moore	4	15	0	23-b	0	0	1.7	6.3
				2-c				
Moose	1	5	1-a	3-b	2-a	0	1.2	6.0
Parachute	3	13	0	13-a	0	0	1.3	5.7
				4-b				
Porphyry	4	15	5-a	2-b	1-b	0	0.5	2.0
Rudd	8	26	2-b	5-a	0	0	0.4	1.3
				3-b				
Skookum	2	2	0	0	0	0	0.0	0.0
Middle Walton	4	8	0	15-b	0	0	1.9	3.8
North Walton	5	7	0	7-b	0	0	2.6	3.6
				11-c				
West Wind	3	4	0	8-b	0	0	2.3	3.0
				1-c				
Middle Wind	4	5	0	7-b	0	0	2.4	3.0
				5-c				
West Wind	4	9	0	1-a	0	0	2.4	5.5
				20-b				
				1-c				
Wind	4	38	2-b	10-a	45-b	0	2.9	27.5**
				38-b				
				15-c				
TOTALS	80	290	13-a 32-b 12-c	44-a 240-b 76-c	3-a 46-b	14-b 7-c	1.7	6.1

* No record of RB stocked (possibly CT)

** Most fish released

a - 12" or larger

b - 6-12"

c - 6" or smaller

On opening weekend (August 1 and 2, 1980), department personnel measured a total of 88 cutthroat and 46 Dolly Varden from Fish Lake. The cutthroat ranged in length from 150-345 mm (6.0 - 13.6 in) and averaged 300 mm (11.8 in) total length. This compares to averages of 289 mm (11.4 in) in 1979, 302 mm (11.9 in) in 1978, and 234 mm (9.2 in) in 1974. Dolly Varden measured from angler creels in 1980 ranged from 225-340 mm (8.9 - 13.4 in) and averaged 285 mm (11.2 in) total length.

From 23-27 June 1980, U. S. Forest Service and Fish and Game personnel caught, measured, tagged and released 412 cutthroat and 36 Dolly Varden at Fish Lake. The fish were tagged with numbered metal jaw tags. From 28-31 July 1980, we recaptured 160 cutthroat. Of these, 4 were tagged. Using a Peterson mark-and-recapture estimate, we estimated the cutthroat population of the lake to be somewhere between 12 and 14 thousand.

Since the cutthroat had completed spawning by 23 June, we were unable to enumerate spawners using the spawning channel. It was, however, obvious that the channel had been heavily utilized.

General

Although no formal creel census information was recorded, general information was received on eight mountain lakes within Region 2 during 1980. Observations were as follows:

Quartzite Lake: Good fishing for brook trout up to 11 or 12 inches.
Oregon Butte Lake: Good fishing for cutthroat up to 18 or 20 inches.
Wildhorse Lake: Good fishing for rainbow and cutthroat up to 12 inches.
Brown's Creek Lake: Good fishing for cutthroat up to 18 inches.
Lake Creek Lakes: Good fishing for cutthroat and brook trout up to 14 inches. Lower lake is best.
Lower Stripe Lake: Cutthroat to 22 inches.
Middle Stripe Lake: All sizes of cutthroat up to 18 inches.

JOB PERFORMANCE REPORT

State of _____ Idaho Name: Regional Fishery Management
Investigations
Project No. ____ F-71-R-5 Title: Region 2 Lowland Lake Investigation
Job No. II-b.

Period Covered: 1 January 1980 to 31 December 1980

ABSTRACT

Angler success at Winchester Reservoir averaged 0.64 fish per hour during the 1 January - 15 February 1980 ice fishing season and 0.96 fish per hour during the 3 May - 31 October 1980 general season. Hatchery rainbow trout comprised 83.3% and bullhead catfish 16.0% of the catch during the general season. Idaho residents made up 91.8% during the general season.

Spring Valley Reservoir yielded 0.57 fish per hour during the ice fishing season and 1.61 fish per hour during the general season. Hatchery rainbow trout comprised 97.5% of the general season catch. Idaho residents made up 90.2% and 89.9% of the anglers interviewed in each season.

Anglers fishing Soldiers Meadow Reservoir averaged 1.15 fish per hour during the ice fishing season and 0.59 fish per hour during the general season. The catch during both seasons consisted entirely of hatchery catchable rainbow. Idaho residents made up 100.0% and 92.8% of the anglers interviewed during each season.

Angler success at Waha Lake averaged 1.61 fish per hour during the 1980 general season. Idaho residents comprised 98.6% of the anglers interviewed at Waha.

Angler success at Mann's Lake averaged 0.58 fish per hour during the 1980 general season. One hundred percent of the anglers interviewed at Mann's Lake were Idaho residents.

Moose Creek Reservoir yielded 0.84 fish per hour during the 1980 general season. Idaho residents comprised 95.7% of the anglers checked at Moose Creek Reservoir.

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RECOMMENDATIONS

The lowland lakes creel census should be continued to evaluate the contributions of hatchery trout to the fisheries.

Gill nets should be set annually to assess overwinter survival and species composition in each of the lakes.

OBJECTIVES

To evaluate the contribution of hatchery fry and catchable rainbow to the fisheries of Winchester Reservoir, Spring Valley Reservoir, Soldiers Meadow Reservoir, Waha Lake and Mann's Lake.

To monitor species composition and overall condition of the fish populations in these lakes.

TECHNIQUES USED

Winchester and Spring Valley Reservoirs were stocked with rainbow catchables during mid-October of 1979 to provide fishing during the 1980 ice fishing season and again during April, May and September for the spring, summer and fall fishery. Soldiers Meadow, Waha and Mann's Lake received periodic plants of rainbow catchables from April through September. Large rainbow fry were stocked in Winchester, Spring Valley and Mann's Lake during April. No coho were stocked in Waha Lake during 1980 (Table 1).

Department personnel collected random creel census, angler residency and species composition information on each of the lakes. We set horizontal gill nets at Winchester Reservoir on 7 April, Spring Valley Reservoir on 31 March, Waha Lake on 10 April and Mann's Lake on 13 March and 1 April. We also set three verticle gill nets in Waha Lake on 10 April.

FINDINGS

Winchester Reservoir

During the 1 January - 15 February 1980 ice fishing season, Department personnel interviewed a total of 97 anglers at Winchester Reservoir. They had fished 183 hours to catch 118 rainbow trout (0.64 fish per hour and 1.22 fish per angler). Over 79% of the rainbow caught were catchables and the remaining 20% were fingerling rainbow (Table 2).

During the general season (3 May - 31 October) we checked 222 anglers who had fished 445 hours to catch 358 trout (0.80 per hour) and 68 brown bullhead (0.15 per hour). Anglers fishing at Winchester during the 1980 general season caught an average of 1.92 fish each (Table 3).

Two horizontal gill nets set in Winchester Reservoir over a 15-hour period from 1700 on 7 April to 0800 on 8 April, caught 33 catchable rainbow (46%) 30 holdover fingerling rainbow (42%) and 8 rainbow-cutthroat hybrids (12%). The holdover rainbow fingerling ranged from 230-313 mm (9.1 - 12.3 inches) and averaged 10.9 inches. The rainbow-cutthroat hybrids averaged 324 mm (12.8 inches). No bullheads were caught in the nets.

Table 1. Summary of rainbow trout catchables and fingerlings stocked in Winchester, Spring Valley, Soldiers Meadow, Waha and Manns Lakes, October, 1979 - July, 1980.

Lake	Date Stocked	Number Stocked	Pounds Stocked	Fish Per Pound
Winchester Reservoir	10/22/79	5,520	2,400	2.3
	4/9/80	19,240	5,200	3.7
	4/16/80	40,000	400	100.0
	5/29/80	14,940	3,600	4.2
	9/17/80	<u>7,290</u>	<u>2,700</u>	<u>2.7</u>
Sub-total-catchables		46,990	13,900	3.4
Sub-total-fingerlings		40,000	400	100.00
Spring Valley Reservoir	10/23/79	6,480	2,400	2.7
	4/10/80	8,880	2,400	3.7
	4/11/80	8,640	2,400	3.6
	4/21/80	15,200	200	76.0
	4/21/80	35,200	220	160.0
	5/8/80	8,640	2,400	3.6
	9/23/80	8,100	2,700	3.0
Sub-total-catchables		40,740	12,300	3.3
Sub-total-fingerlings		50,400	420	120.0
Soldiers Meadow Reservoir	4/24/80	5,400	2,700	2.0
	4/28/80	4,320	2,700	1.6
	6/19/80	9,180	2,700	3.4
	7/10/80	8,370	2,700	3.1
	9/17/80	<u>9,450</u>	<u>2,700</u>	<u>3.5</u>
Sub-total-catchables		36,720	13,500	2.7
Waha Lake	4/14/80	7,440	2,400	3.1
	4/15/80	9,840	2,400	4.1
	4/21/80	7,740	1,800	4.3
	4/28/80	3,840	<u>2,400</u>	<u>1.6</u>
Sub-total-catchables		28,860	9,000	3.2
Manns Lake	4/7/80	6,480	2,400	2.7
	4/7/80	6,480	2,400	2.7
	4/8/80	40,000	400	100.0
	5/29/80	<u>14,040</u>	<u>2,700</u>	<u>5.2</u>
Sub-total-catchables		27,000	7,500	3.6
sub-total-fingerlings		40,000	400	100.0
Grand Total-catchables		180,310	56,200	3.2
Grand Total-fingerlings		130,400	1,220	106.9

Table 2. Anglers interviewed, hours fished and fish checked on Winchester Reservoir during the ice fishing season, 1 January - 15 February, 1980.

Date	Res	NR	Hours Fished	No. of Fishing Outfits	Fish Caught		Fish per Hour	Fish per Angler	Fish per Outfit
					CRB*	FRB*			
1/1/80	18		29	30	13	13	0.86	1.25	0.83
1/6/80	5	2	8.5	11	7	1	0.94	1.14	0.73
1/7/80	5	0	10	10	8	3	1.10	2.20	1.10
1/16/80	8	1	21	24	21	1	1.05	2.44	0.92
1/24/80	7	0	35	17	11	2	0.37	1.86	0.77
1/25/80	10	0	17.5	26	11	2	0.74	1.30	0.50
1/31	<u>7</u>	<u>2</u>	<u>15</u>	<u>19</u>	<u>9</u>	<u>2</u>	<u>0.73</u>	<u>1.22</u>	<u>0.58</u>
Subtotal	60	7	136	137	80	23	0.76	1.54	0.75
2/ 8/ 80	2	0	3	6	0	0	0.00	0.00	0.00
2/9/80	17	1	25	34	8	0	0.32	0.44	0.24
2/13/80	4	0	5	9	1	1	0.40	0.50	0.22
2/15/80	<u>6</u>	<u>0</u>	<u>14</u>	<u>10</u>	<u>5</u>	<u>0</u>	<u>0.36</u>	<u>0.83</u>	<u>0.50</u>
Subtotal	29	1	47	59	14	1	0.32	0.50	0.25
TOTAL	89	8	183	196	94	24	0.64	1.22	0.60
Percent of Total	91.8	8.2			79.70	20.30			
Fish/hour					0.51	0.13			

* CRB - catchable rainbow; FRB - fingerling rainbow

Table Anglers interviewed, hours fished and fish checked on Spring Valley Reservoir during the ice fishing season, 1 January - 15 February, 1980

Date	Res.	NR	Hours Fished	No. of Fishing Outfits	Fish Caught		Fish per Hour	Fish per Angler	Fish per Outfit
					CRB*	FRB*			
1/1/80	11	0	19	18	21	0	1.11	1.91	1.17
1/5/80	2	0	1	3	2	0	2.00	1.00	0.66
1/19/80	16	3	31	31	8	0	0.26	0.42	0.26
1/27/80	<u>13</u>	<u>4</u>	<u>22.5</u>	<u>23</u>	<u>7</u>	<u>0</u>	<u>0.31</u>	<u>0.41</u>	<u>0.30</u>
Subtotal	42	7	73.5	75	38	0	0.52	0.78	0.51
2/1/80	3	0	3.5	7	6	0	1.71	2.00	0.86
2/3/80	7	1	34.5	15	11	0	0.32	1.38	0.73
2/7/80	3	0	10	5	15	0	1.50	5.00	3.00
2/9/80	17	0	40	37	21	0	0.52	1.23	0.57
2/13/80	5	0	6	13	8	0	1.33	1.60	0.62
2/15/80	5	<u>0</u>	<u>18</u>	<u>14</u>	<u>6</u>	<u>0</u>	<u>0.33</u>	<u>1.20</u>	<u>0.43</u>
Subtotal	40	1	112	91	67	0	0.60	1.63	0.74
TOTAL	82	8	185.5	166	105	0	0.57	1.17	0.63
Percent of Total	90.2	9.8			100.00	0.00			
Fish/hour					0.57	0.00			

* CRB - catchable rainbow; FRB - fingerling rainbow

Table 4. Anglers interviewed, hours fished and fish checked on Winchester Reservoir during the general fishing season, 3 May - 31 October 1980.

Month	Res.	NR	Hours Fished	Fish Caught				Total	Fish/ Hour	Fish/ Angler
				Catchable Rainbow	RB X Hybrids	CT	BC			
May	165	20	339	277	3	0	67	347	1.02	1.88
Sept.	29	6	100	78	0	0	0	78	0.78	2.23
Oct.	2	0	6	0	0	0	<u>1</u>	<u>1</u>	<u>0.17</u>	<u>0.50</u>
Total	196	26	445	355	3	0	68	426	0.96	1.92
Percent of total	88.2	11.8		83.3	0.7	0	16.0			
Fish/hour				0.80	.007	0	0.15	0.96		

Spring Valley Reservoir

During the 1980 ice fishing season, Department personnel interviewed a total of 90 anglers at Spring Valley Reservoir. They had fished 185.5 hours to catch 105 catchable rainbow (0.57 fish per hour and 1.17 fish per angler). One hundred percent of the fish checked were catchable rainbow (Table).

During the general season, we interviewed 625 anglers who had fished 1408 hours to catch 2208 hatchery rainbow trout (1.57 per hour) and 57 largemouth bass (0.04 per hour). anglers caught an average of 3.62 fish apiece during the 1980 general season (Table).

Two horizontal gill nets set in Spring Valley Reservoir over a 17 hour period from 1600 on 31 March to 0900 on 1 April caught 55 catchable rainbow. No holdover fingerling rainbow or largemouth bass were caught in the nets.

Table 5. Anglers interviewed, hours fished and fish checked on Spring Valley Reservoir during the general fishing season 3 May - 31 October 1980.

Month	Res.	NR	Hours Fished	fish Caught		Total	Fish/ Hour	Fish/ Angler
				Hatchery Rainbow	Largemouth Bass			
May	461	32	1126	2060	28	2088	1.85	4.24
June	38	8	115	75	10	85	0.74	1.85
July	15	13	39	10	4	14	0.36	0.52
Aug.	28	2	71	16	10	26	0.37	0.87
Sept.	5	8	14	0	5	5	0.36	0.38
Oct.	15	1	43	47	0	47	1.09	2.94
Total	562	63	1408	2208	57	2265	1.61	3.62
Percent of Total	89.9	10.1		97.5	2.5			
Fish/Hour				1.57	0.04	1.61		13

Soldiers Meadow Reservoir

Anglers participating in the 1980 ice fishing season at Soldiers Meadow Reservoir averaged 1.15 trout per hour and 1.82 trout per angler. All anglers interviewed were Idaho residents.

During the general season, Department personnel interviewed 194 anglers at Soldiers Meadow. They had fished 486 hours to catch 285 catchable rainbow (0.58 fish per hour and 1.47 fish per angler). Over 92% of anglers interviewed were Idaho residents.

No gill nets were set in Soldiers Meadow Reservoir during 1980.

Waha Lake

Anglers fishing at Waha Lake during the 1980 general season averaged 1.61 fish per hour and 4.10 fish per angler. Of the 858 fish checked, 6.3% were coho. There is no ice fishing season on Waha Lake.

Two horizontal gill nets and three verticle gill nets (1", 1/5" and 2" mesh) set over a 17 hour period from 1600 on 10 April to 0900 on 11 April caught a total of only five catchable rainbow and one coho.

Mann's Lake

From 3 May until 16 July 1980, we checked a total of 105 anglers at Manns Lake. They had fished 201 hours to catch 116 hatchery rainbow (0.58 fish per hour and 1.10 fish per angler). Because of alleged vandalism and other problems, the Lewiston Orchards Irrigation District (LOID) closed Mann's Lake to public access on 16 July 1980.

Two horizontal gill nets set in Mann's Lake over a 15-hour period from 1600 on 12 March to 0700 on 13 March caught eight holdover fingerling rainbow, five catchable rainbow and three suckers. The nets were reset at the same locations at 1100 on 1 April and pulled at 0600 on 2 April. These sets caught 29 holdover fingerling rainbow, 10 catchable rainbow and 23 suckers. The holdover fingerling rainbow averaged 249 mm (9.8 inches) and the suckers averaged 383 mm (15.1 inches). No largemouth bass were taken in the nets during 1980.

Dworshak Reservoir

Data collected on Dworshak Reservoir during 1980 is presented in a separate project report.

JOB PERFORMANCE REPORT

State of Idaho Name: REGIONAL FISHERY MANAGEMENT
INVESTIGATIONS
Project No. F-71-R-5 Title: Region 2 Stream Investigations
Job No. 11-c.

Period Covered: 1 January 1980 to 31 December 1980

ABSTRACT

Department personnel interviewed a total of 1,368 anglers on 43 different streams in Region 2 during 1980. The average catch rate was 0.60 fish per hour. Wild rainbow-steelhead comprised the majority of the catch in 21 of the 43 streams. Ninety-two percent of the anglers interviewed were Idaho residents.

From 22-27 July 1980, fisheries personnel snorkeled 26 transects in the Selway River from White Cap Creek to Race Creek (unroaded). We counted 443 cutthroat trout (17.0 per transect), 23 resident rainbow trout over 200 mm (0.9), 244 Age II steelhead (9.4), 8 juvenile chinook (0.3) and 581 whitefish (22.3). Comparatively, we counted 4.4 cutthroat per transect in this stretch of the Selway in 1973, 5.5 in 1974, 5.8 in 1975, 6.9 in 1976, 15.4 in 1977, and 13.1 in 1978. Restrictive regulations (catch-and-release) have resulted in nearly a four-fold increase in numbers of cutthroat in the Selway River.

Brown trout fingerlings were again stocked in the Palouse River in June of 1980. Electrofishing at several locations in the Palouse on 26 August 1980 revealed a few fish from the 1980 release but none from 1979.

Author:

Ronald L. Lindl and
Regional Fishery Biologist

RECOMMENDATIONS

Continue the random creel census on rivers and streams in the region to monitor contribution of hatchery catchable rainbow, species composition of the catch and angler success.

Intensify efforts to collect species composition data on fish populations in numerous small tributary streams in the Clearwater and Salmon River drainages, in order to improve the data base prior to impacts by logging, grazing, etc.

Since the cutthroat population of the Selway River is apparently still expanding, the catch-and-release regulation should remain in effect to allow the population to reach carrying capacity.

Evaluation of the changes in the structure of the Selway River cutthroat population in response to the catch-and-release regulations should be continued.

Continue to monitor the success of the brown trout introduction in the Palouse River.

OBJECTIVES

To obtain information on species composition, angler success, and contribution of hatchery catchable rainbow in rivers and streams in Region 2.

To monitor cutthroat trout distribution and abundance in the Selway River and selected tributaries.

To monitor the success of the brown trout introduction in the Palouse River.

TECHNIQUES USED

Random creel checks were conducted on Region 2 streams by Conservation Officers and other Region 2 personnel. Information was collected on angler residency, hours fished, number of fish caught and species composition of the catch.

From 22-27 July 1980, fisheries personnel snorkeled a total of 26 transects in the Selway River from White Cap Creek to Race Creek. As in previous years, we enumerated cutthroat trout, juvenile steelhead, resident rainbow trout (over 200 mm), juvenile and adult chinook, Dolly Varden and whitefish in the transects. We categorized the cutthroat into two size classes (less than or greater than 305 mm). To obtain a length frequency of cutthroat trout from the Selway River for comparison with length frequencies of previous years, we caught, measured and released 347 cutthroat during 1980.

On 26 August 1980, we used electrofishing gear to sample six locations in the Palouse River between Potlatch and Camp Grizzly. The object of this sampling was to monitor the success of brown trout which were first introduced into the Palouse in 1979.

FINDINGS

Regional Stream Creel Census

Department personnel interviewed anglers on 43 different streams in Region 2 during 1980. A total of 1,368 anglers were interviewed. They had fished 3,859 hours to harvest 2,324 fish for an overall catch rate of 0.60 fish per hour. Over 91% of the anglers interviewed on rivers and streams in Region 2 were Idaho residents (Table 1).

Table 2 provides a summary of species composition of fish checked in the various streams of Region 2. Wild rainbow-steelhead comprised a majority of the catch in 21 of the 43 streams checked. Hatchery rainbow were most important in 5 of the streams, whitefish in 4, cutthroat in 3, brook trout in 2 and Dolly Varden and black crappie one each.

Selway River Investigations

Cutthroat counts increased significantly in most areas of the Selway River in 1980 as compared to 1978. Since 1977 was the lowest flow year on record for the Selway and cutthroat were more concentrated than in normal flow years, valid comparisons cannot be made between 1977 and other years. Significant increases in 1980 were noted from White Cap Creek to Bear Creek and from Halfway Creek to Race Creek. Decreases were noted from Bear Creek to Halfway Creek (Table 3). The percentage of cutthroat in the snorkel transects estimated to be over 305 mm (12 in) decreased in all sections above Moose Creek and increased below Moose Creek (Table 4). This change could be attributed either to: 1) distributional alteration of the cutthroat population with a higher than normal proportion of the larger fish remaining in the lower river, or 2) a size change due to recruitment of more small fish from the upper river spawning tributaries.

We caught and measured a total of 347 cutthroat from the Selway River between White Cap Creek and Race Creek in 1980. They ranged in total length from 110-422 mm (4.3-16.6 in) and averaged 265 mm (10.4 in). Comparatively, cutthroat measured in 1978 averaged 262 mm (10.3 in), 1977 averaged 241 mm (9.5 in), 1976 averaged 258 mm (10.2 in) and 1975 averaged 238 mm (9.4 in). The percent of cutthroat measured over 305 mm (12 in) was 29% in 1980, 26% in 1978, 19% in 1977, 22% in 1976 and 12% in 1975. The percent of cutthroat less than 203 mm (8 in) was 18% in 1980, 22% in 1978, 29% in 1977, 19% in 1976 and 30% in 1975 (Table 5).

As has been the case every year, juvenile steelhead were found to be more than twice as numerous below Moose Creek (13.5 per transect) as above Moose Creek (5.9 per transect). Juvenile steelhead counts increased significantly above Moose Creek in 1980 compared to 1978; however, counts decreased slightly below Moose Creek (Table 6).

Juvenile chinook counts were extremely low in 1980 averaging only 0.3 per transect from White Cap Creek to Race Creek. These low counts would be expected because of the record low returns of adult chinook to the Clearwater drainage in the fall of 1979.

Table i . Species composition of fish checked in anglers creels in Region 2 streams, 1980.

Water	Percent of catch by species									
	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR
South Fork Clearwater	72.9	1.6		0.9	0.8	0.8	23.0			
Red River	35.0	50.0			5.0	10.0				
Newsome Creek	88.6	5.7			2.8	2.9				
Mill Creek	85.7					14.3				
Meadow Creek	No fish checked									
Johns Creek	100.0									
Big Elk Creek	66.6				33.4					
Selway River				1.7		1.7	96.6			
Lochsa River	9.0	3.0		3.8	0.2	0.2	83.7			
Big Sand Creek	9.1			81.8	9.1					
Crooked Fork Creek	75.0			25.0						
Middle Fork Clearwater							100.0			
North Fork Clearwater	4.9			11.4		0.7	83.0			
Beaver Creek	66.6			33.4						
Skull Creek	100.0									
Little North Fork	83.3			16.7						
Orogrande Creek	71.4			28.6						
Rhodes Creek	64.7				35.3					
Sylvan Creek				100.0						
Clearwater River		100.0								
Lapwai Creek	100.0									
Boulder Creek (Potlatch)	No fish checked									
Moose Creek (Potlatch)	100.0									
Orofino Creek	No fish checked									
Lobo Creek	100.0									
Eldorado Creek	50.0			50.0						
Weaver Creek				100.0						
Lawyers Creek		100.0								
Palouse River		99.0			1.0					
Big Sand Creek					100.0					
Snake River	28.4					0.5	0.5	28.0	0.9	41.7
Salmon River			90.1			6.2		3.7		
Little Salmon		87.1				12.9				
Rapid River	43.8					56.2				
Graves Creek	100.0									
Slate Creek	100.0									
Skookumchuck Creek	93.3				6.7					

Tablet, (Cont.) Species composition of fish checked in anglers creels in Region 2 streams, 1980.

Water	Percent of catch by species									
	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR
Mallard Creek	33.3				66.7					
Bargamin Creek	66.7			33.3						
Whitbird Creek	No fish checked									
Eagle Creek	66.7						33.3			
Crooked Creek	100.0									
Rice Creek	100.0									

Table 2 . Anglers interviewed, hours fished, fish caught and catch rates for streams in Region 2, 1980.

Water	Anglers		Hour	Total	Fish
	Res	NR	Fished	Fish Caught	Per
South Fork Clearwater	75	16	206	122	0.59
Red River	14	3	37	20	0.54
Newsome Creek	22	2	54	35	0.65
Mill Creek	6	0	18	7	0.39
Meadow Creek	0	2	8	0	0.00
Johns Creek	0	2	6	1	0.17
Big Elk Creek	1	0	1	3	3.00
Selway River	28	0	47	58	1.23
Lochsa River	80	14	223	498	2.23
Big Sand Creek	5	0	12	22	1.83
Crooked Fork Creek	0	2	2	8	4.00
Middle Fork Clearwater	8	8	13	43	3.30
North Fork Clearwater	141	1	302	629	2.08
Beaver Creek	3	0	18	9	0.50
Skull Creek	15	0	14	18	1.28
Little North Fork	6	0	12	6	0.50
Orogrande Creek	7	0	10	7	0.70
Rhodes Creek	14	0	18	17	0.94
Sylvan Creek	3	0	1	2	2.00
Clearwater River	6	0	7	3	0.43
Lapwai Creek	10	0	14	8	0.57
Boulder Creek (Potlatch)		2	4	0	0.00
Moose Creek (Potlatch)	2	0	6	9	1.50
Orofino Creek	3	1	4	0	0.00
Lolo Creek	13	1	13	32	2.46
Eldorado Creek	6	0	2	10	5.00
Weaver Creek	1	0	1	5	5.00
Lawyers Creek	44	0	74	119	1.61
Palouse River	66	20	188	191	1.02
Big Sand Creek	2	0	1	3	3.00
Snake River	128	20	488	218	0.45
Salmon River	460	21	1918	81	0.04
Little Salmon River	50	3	54	62	1.15
Rapid River	4	1	13	16	1.23
Graves Creek	7	0	5	6	1.20
Slate Creek	9	0	18	23	1.28
Skookumchuck Creek	2	0	4	15	3.75

Table 2. (Cont.) Anglers interviewed, hours fished, fish caught and catch rates for streams in Region 2, 1980.

Water	Anglers		Hours Fished	Total Fish Caught	Fish Per Hour
	Res.	NR			
Mallard Creek	2	0	6	3	0.50
Bargamin Creek	0	5	15	3	0.20
Whitebird Creek	3	0	3	0	0.00
Eagle Creek	3	0	12	3	0.25
Crooked Creek	3	0	4	3	0.75
Rice Creek	<u>3</u>	<u>0</u>	<u>9</u>	<u>12</u>	<u>1.33</u>
TOTALS	1252	116	3859	2324	0.60

Table 3, Average number of cutthroat counted per snorkel transect in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-78 and 1980

Stream Section	Average number of cutthroat per transect						
	1973	1974	1975	1976	1977	1978	1980
White Cap Creek to Running Creek	4.2	3.4	6.8	7.2	10.6	7.4	13.2
Running Creek to Bear Creek	7.2	4.8	6.6	6.2	18.6	10.6	18.6
Bear Creek to Moose Creek	<u>5.3</u>	<u>7.5</u>	<u>5.0</u>	<u>6.0</u>	<u>17.4</u>	<u>19.6</u>	<u>16.2</u>
Weighted means White Cap Creek to Moose Creek	5.6	5.2	6.1	6.5	15.4	12.5	16.2
Moose Creek to Halfway Creek	6.0	9.0	5.6	8.0	24.0	19.7	14.3
Halfway Creek to Three Links Creek	3.0	7.4	7.0	9.5	20.0	22.0	29.0
Three Links Creek to Jim's Creek	5.0	4.3	8.0	6.5	11.0	16.0	22.0
Jim's Creek to Race Creek	<u>0.0</u>	<u>2.5</u>	<u>1.2</u>	<u>5.7</u>	<u>7.5</u>	<u>3.5</u>	<u>12.3</u>
Weighted means Moose Creek to Race Creek	3.6	5.9	5.3	7.4	15.3	13.8	18.0

Table 4. Percent of cutthroat over 305 mm (12 in) counted in snorkel transects in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-78 and 1980.

Stream Section	Percent over 305 mm (12 in)						
	1973	1974	1975	1976	1977	1978	1980
White Cap Creek to Running Creek	9.5	16.7	11.8	22.2	22.6	16.2	13.2
Running Creek to Bear Creek	11.1	8.3	18.2	16.2	21.5	20.8	11.8
Bear Creek to Moose Creek	<u>34.4</u>	<u>15.5</u>	<u>8.0</u>	<u>25.0</u>	<u>21.4</u>	<u>21.4</u>	<u>9.9</u>
Overall percent White Cap Creek to Moose Creek	18.9	12.7	13.0	20.6	21.8	22.3	11.5
Moose Creek to Halfway Creek	8.3	0.0	3.6	17.5	12.5	13.6	18.6
Halfway Creek to Three Links Creek	19.0	16.2	19.0	26.3	17.5	15.9	17.2
Three Links Creek to Jim's Creek	23.3	5.8	12.5	38.5	27.5	25.0	27.3
Jim's Creek to Race Creek	<u>0.0</u>	<u>10.0</u>	<u>50.0</u>	<u>11.8</u>	<u>26.5</u>	<u>35.7</u>	<u>4.1</u>
Overall percent Moose Creek to Race Creek	17.3	8.0	13.0	21.3	18.9	19.4	17.6

Table 5. Percent of cutthroat trout by 25.4 mm (1 in) size groups taken from the Selway River by angling, 1975-78 and 1980.

Length (mm)	1975	1976	1977	1978	1980
102-126	1.8	0.0	2.6	0.4	0.6
127-151	6.9	2.2	6.1	0.4	4.0
152-177	13.3	4.2	10.0	11.1	7.1
178-202	18.0	12.2	10.9	9.6	6.5
203-228	12.4	7.6	10.5	9.1	6.3
229-253	14.6	17.2	14.0	6.6	15.9
254-278	13.3	15.5	12.2	21.1	11.1
279-304	7.7	20.2	14.8	13.0	19.6
305-329	8.6	11.3	14.4	12.8	19.3
330-355	2.6	7.1	2.6	10.4	6.0
356-380	0.4	2.1	1.3	3.4	2.3
381-405	0.4	0.4	0.0	1.7	1.1
Over 406	0.0	0.0	0.6	0.4	0.2
Total number of cutthroat measures	233	238	229	470	352

Table 6. Average number of juvenile steelhead counted per snorkel transect in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-78 and 1980

Stream Section	Average number of juvenile steelhead per transect						
	1973	1974	1975	1976	1977	1978	1980
White Cap Creek to Running Creek	1.2	1.1	5.0	4.0	0.8	3.6	5.0
Running Creek to Bear Creek	2.2	3.2	7.0	2.2	2.0	0.8	3.4
Bear Creek to Moose Creek	<u>4.3</u>	<u>3.7</u>	<u>11.0</u>	<u>13.0</u>	<u>3.3</u>	<u>3.4</u>	<u>9.0</u>
Weighted means White Cap Creek to Moose Creek	2.7	2.6	7.7	5.7	1.9	2.6	5.9
Moose Creek to Halfway Creek	27.5	17.8	17.8	13.2	5.3	22.0	9.7
Halfway Creek to Three Links Creek	14.0	17.4	25.3	19.5	9.5	12.0	19.0
Three Links Creek to Jim's Creek	19.3	8.8	32.5	23.5	24.7	18.7	18.9
Jim's Creek to Race Creek	<u>1.8</u>	<u>6.2</u>	<u>6.7</u>	<u>4.3</u>	<u>10.5</u>	<u>5.8</u>	<u>9.8</u>
Weighted means Moose Creek to Race Creek	15.8	12.8	19.2	13.8	12.0	14.9	13.5

Whitefish counts were up in transects above Moose Creek but decreased below Moose Creek in 1980 as compared to 1978. As previously stated, the extremely high counts in 1977 were due to concentration of the fish by record low flows (Table 7).

Palouse River Brown Trout

On 27 June and 16 July 1979, a total of 29,600 brown trout fingerlings (20 per pound) were released into the Palouse River between Laird Park and Princeton. On 28 May 1980, a total of 51,280 brown trout fry (100 per pound) were released into this same section of the Palouse.

In an attempt to monitor the success of these releases, we sampled six different sites between Camp Grizzly and Potlatch with electrofishing gear on 26 August 1980. We collected a total of 17 brown trout and 10 rainbow trout. All trout were collected in the upper two sites within one mile of Camp Grizzley. Fish collected at the four lower sites consisted entirely of shiners, dace and suckers. The brown trout collected ranged from 79-132 mm (3.1-5.3 in) and averaged 98 mm (3.9 in). The rainbow collected ranged from 142-317 mm (5.6-12.5 in) and averaged 233 mm (9.2 in). Based on what we collected in those samples, we would have to conclude that there was very little survival from the 1979 release of brown trout into the Palouse River.

Table 7. Average number of whitefish counted per snorkel transect in the Selway River (unroaded portion) from White Cap Creek to Race Creek, 1973-78 and 1980

Stream Section	Average number of whitefish per transect						
	1973	1974	1975	1976	1977	1978	1980
White Cap Creek to Running Creek	35.2	31.1	8.4	17.8	32.8	9.4	15.8
Running Creek to Bear Creek	39.2	36.4	15.0	6.5	77.8	17.4	17.6
Bear Creek to Moose Creek	<u>31.1</u>	<u>34.2</u>	<u>11.8</u>	<u>9.0</u>	<u>51.3</u>	<u>16.6</u>	<u>19.0</u>
Weighted means White Cap Creek to Moose Creek	34.9	33.9	11.7	10.9	44.9	12.1	17.6
Moose Creek to Halfway Creek	48.8	31.5	32.4	16.6	69.5	40.3	32.0
Halfway Creek to Three Links Creek	17.7	31.4	27.0	16.0	65.0	67.0	27.0
Three Links Creek to Jim's Creek	23.8	19.0	41.0	19.5	49.7	46.0	38.3
Jim's Creek to Race Creek	5.2	<u>16.8</u>	<u>18.7</u>	<u>2.0</u>	<u>41.0</u>	<u>20.5</u>	<u>20.0</u>
Weighted means Moose Creek to Race Creek	23.0	25.1	29.3	13.3	50.4	39.6	28.8

JOB PERFORMANCE REPORT

State of Idaho Name: REGIONAL FISHERY MANAGEMENT INVESTIGATIONS
Project No. F-71-R-5 Title: Region 2 Technical Guidance
Job No. II-d.

Period Covered: 1 January 1980 to 31 December 1980

ABSTRACT

During 1980, Region 2 fishery management personnel provided private individuals, organizations and state and federal agencies with written technical guidance and advice on projects associated with, or having impacts on the fishery resource or aquatic habitat in Region 2. Written comments were submitted on a total of 156 documents. In addition, farm pond owners were assisted in selecting and obtaining fish to be stocked into their ponds.

Author:

Ronald L. Lindland
Regional Fishery Biologist

RECOMMENDATIONS

We recommend continuance of the technical guidance program to insure professional and timely input regarding projects and programs which affect fisheries within Region 2.

OBJECTIVES

To provide technical guidance to public agencies and private individuals regarding stream alterations, timber sales, road construction, private pond operations or any other matters pertaining to fisheries in Region 2.

To assist local sportsmen's groups and individuals with habitat improvement projects which will benefit fisheries.

TECHNIQUES USED

Through personal contact, project and document review and field inspections, we made comments and provided advice on projects or activities associated with or impacting the fishery resource or aquatic habitat of the region.

FINDINGS

During 1980, Region 2 fishery management personnel submitted written comments on 156 documents from 9 different state and federal agencies. Table 1 categorizes these comments by agency. These 156 documents comprised 15 percent of the 1,008 which received comment statewide.

Table 1. Summary of documents receiving written comment from Region 2 Fishery Management, 1980.

Agency	Number of Documents
U. S. Bureau of Land Management	1
U. S. Corps of Engineers	13
U. S. Forest Service	24
U. S. Environmental Protection Agency	5
Idaho Department of Lands	32
Idaho State Clearinghouse	9
Idaho Department of Transportation	1
Idaho Department of Water Resources	68
Miscellaneous	3
Total	156

The majority of the stream channel alteration applications received in 1980 concerned dredge mining. Despite the initiation of the so-called "one stop permit", there was still an eight-fold increase in the number of dredge mining applications received by the Region 2 office in 1980 as compared to 1979.

The number of private ponds under permit in Region 2 during 1980 totalled 68. This compared to 59 in 1979 and 45 in 1978. We provided assistance to several of these pond owners in selecting and obtaining fish for their ponds.

JOB PERFORMANCE REPORT

State of Idaho Name: REGION 2 FISHERY MANAGEMENT INVESTIGATIONS
Project No. F-71-R-5 Title: Salmon and Steel head
Job No. 11-e. Investigations

Period Covered: 1 January 1980 to 31 December 1980

ABSTRACT

Returns of adult spring chinook salmon to the Clearwater River drainage were significantly improved in 1980 compared to 1979; but 1980 returns were still less than one-third of the previous 10-year average. Redd counts doubled on the Lochsa and Selway and increased 44% on the South Fork of the Clearwater in 1980 compared to 1979.

Department personnel trapped and distributed 1,213,440 spring chinook fry from Indian Creek Incubation Channel in the spring of 1980. We placed 2,500,000 eyed spring chinook eggs in the channel in October of 1980. These eggs were again provided by the Cowlitz Hatchery in western Washington. Fry from these eggs will be enumerated in the spring of 1981.

Spring chinook smolts and fingerlings released into the Clearwater River drainage from Rapid River and Kooskia Hatcheries totalled 1,189,386 during 1980.

Due to low returns of adult steelhead, the Clearwater River was closed to steelhead fishing during the spring of 1980. Only 2,519 adults returned to Dworshak National Fish Hatchery in 1980. Anglers caught and released an estimated 511 steelhead during the catch-and-release portion of the 1980 fall season and harvested an estimated 1,921 steelhead during the catch-and-keep portion of the season.

Department personnel operated a steelhead check station on the Salmon River at Shorts Bar from 18 October to 6 December 1980. Anglers averaged 19.3 hours per fish over this interval.

Author:

Ronald L. Lindl and
Regional Fishery Biologist

RECOMMENDATIONS

Continue eyed egg plants and fry, fingerling and smolt releases in the Clearwater River drainage to enhance runs of spring chinook and steelhead.

Continue standardized spawning gravel counts to assess trends in adult chinook returns.

Continue to collect creel census information on the anadromous fisheries within the Region to monitor angler effort and anadromous fish harvest.

OBJECTIVES

To monitor spring chinook salmon and steelhead adult returns and spawning ground trends.

To evaluate angler success and effort on spring chinook salmon and steelhead in Region 2.

TECHNIQUES USED

During May and June, 1980, chinook fry were trapped and enumerated as they emerged from Indian Creek Incubation Channel, and distributed at several sites along the upper Selway River and in selected tributaries.

In May, June, July and September, surplus steelhead fry from Dworshak Hatchery were trucked and released into selected tributaries on the main Clearwater River, Lochsa and South Fork Clearwater. Eyed steelhead eggs from Dworshak Hatchery were placed in Red River Incubation Channel on 2 May 1980.

Chinook spawning ground trend counts were conducted by helicopter and on foot in the Lochsa, Selway and South Fork of the Clearwater from late August through mid-September, 1980.

Department and U. S. Forest Service personnel placed eyed spring chinook eggs into Indian Creek Incubation Channel on the upper Selway River during October, 1980. These eggs were obtained from the Cowlitz Hatchery in western Washington.

During the 1980 fall steelhead season, Department personnel conducted angler counts and interviews on the lower Clearwater River from Lewiston to Orofino to estimate angler effort and steelhead harvest. We also operated a check station on weekends only from 18 October to 6 December on the Salmon River at Shorts Bar. We obtained information on angler residency, hours fished, angling method and number of fish caught. Fish were checked for external marks to determine wild or hatchery origin.

FINDINGS

Spring Chinook

A total of 1,213,440 emergent spring chinook fry were trapped at Indian Creek Incubation Channel in the spring of 1980. This represents an emergence survival rate of 47.7 percent. Over 1,180,000 of these were released at six different locations in the main Selway River and in two upper Selway tributary streams. The remaining 35,000 were released directly into the river at the channel.

Releases of spring chinook fingerlings and smolts into the Clearwater River drainage totalled 1,189,386 during 1980. Kooskia Hatchery released 766,946 chinook at 22 per pound into the Middle Fork of the Clearwater on 14 and 16 April 1980. A total of 157,440 smolts at 16 per pound were trucked from Rapid River Hatchery to White Sand Creek on the upper Lochsa. Red River Pond released an estimated 265,000 chinook at 25 per pound into Red River on 18 September.

Spawning ground surveys conducted during 1980 on the Lochsa, Selway and South Fork indicated a significantly increased return of adult chinook to the Clearwater drainage compared to 1979. An estimated 825 adult chinook escaped to these upper Clearwater tributaries in 1980 compared to 520 in 1979. The high has been 5,000 in 1973. Observation conditions were excellent during all of the 1980 spawning ground surveys.

Steelhead

Due to low returns of adult steelhead to Dworshak National Fish Hatchery during the spring of 1980, the steelhead season was closed. A total of only 2,519 steelhead returned to Dworshak National Fish Hatchery in the spring of 1980. Researchers estimated that wild escapement above the North Fork Clearwater was approximately 5,500 fish.

Hatchery personnel distributed a total of 2,188,745 steelhead fry to selected Clearwater River, Lochsa and South Fork tributaries during 1980 (Table 1). No unspawned adults were trucked in 1980.

Anglers participating in the catch-and-release portion of the fall 1980 steelhead season on the Clearwater River caught and released an estimated 511 steelhead at an average catch rate of 9.0 hours per fish. During the catch-and-keep season, anglers fished an estimated 69,619 hours to harvest 1,921 steelhead at an average catch rate of 36.2 hours per fish.

Department personnel operated a check station at Shorts Bar on the Salmon River on weekends only from 18 October to 6 December. We interviewed a total of 891 steelhead anglers who had fished 5,056 hours to harvest 238 steelhead. They also released 24 steelhead which results in an overall catch rate of 19.3 hours per fish. Over 53% of the fish checked were of hatchery origin and 44.5% were 2-ocean fish (over 28" total length) (Table 2).

Table 1. Steel head fry releases from Dworshak Nation, 1 Hatchery into selected Clearwater River tributaries, 1980

Date	Release Site	Number Released	Number per pound
May 14	Eat Fork Potlatch Creek	100,000	2,000
15	Lolo Creek	125,000	2,000
June 17	Squaw Creek (Lochsa)	125,000	1,800
17	Papoose Creek (Lochsa)	125,000	1,200
17	White Sand Creek (Lochsa)	125,000	,800
17	Crooked Fork Creek (Lochsa)	125,000	1,800
18	American River (So. Fork Clearwater)	125,000	1,800
18	Crooked River (So. Fork Clearwater)	125,000	1,800
18	Newsome Creek (So. Fork Clearwater)	125,000	1,800
	Leggett Creek (So. Fork Clearwater)	125,000	1,800
July 3	Meadow Creek (So. Fork Clearwater)	279,766	1,077
7	Brushy Fork Creek (Lochsa)	314,935	1,088
Sept 23	American River (So. Fork Clearwater)	22,439	250
23	Crooked River (So. Fork Clearwater)	45,558	250
23	Newsome Creek (So. Fork Clearwater)	45,558	250
23	Red River (So. Fork Clearwater)	22,439	250
24	Pet King Creek (Lochsa)	30,000	250
24	Fish Creek (Lochsa)	20,000	250
24	Post Office Creek (Lochsa)	30,000	230
24	Squaw Creek (Lochsa)	25,000	250
24	Badger Creek (Lochsa)	23,000	250
24	Papoose Creek (Lochsa)	20,000	250
24	White Sand Creek (Lochsa)	45,000	250
25	Lolo Creek	40,000	
	Total	2,188,745	

Table 2. Summary of steel head catch data collected at Shorts Bar on the Salmon River, 18 October - 6 December, 1980.

Dates	Anglers Interviewed	Hours Fished	Steel head Caught		Hours Per Fish	Percent Hatchery Fish	Percent 2-Ocean Fish (over 28")
			Kept	Released			
18-19 Oct	96	403	32	1	12.2	56.3	59.4
25-26 Oct	94	559	45	1	12.2	40.0	48.9
1-2 Nov	234	1655	89	3	18.0	65.2	46.1
8-9 Nov	138	703	8	0	87.9	87.5	37.5
15-16 Nov	128	782	31	19	15.6	32.3	19.4
22-23 Nov	106	559	17	0	32.8	64.7	41.2
29-30 Nov	76	309	15	0	20.6	20.0	53.3
6 Dec	<u>19</u>	<u>86</u>	<u>1</u>	<u>0</u>	<u>86.0</u>	<u>0.0</u>	<u>0.0</u>
TOTALS	891	5056	238	24	19.3	53.1	44.5

CREEL CENSUS SUMMARY

CREEL CENSUS SUMMARY Fishery Management Region 2, 1980

Water	Month	Res.	Non-Res.	Fish Caught												Hrs.	F/Hr.	F/A	
				WRB	HRB	SH	CT	BK	DV	WF	BC	SB	LB	CC	BCR				
RIVERS AND STREAMS																			
South Fork Clearwater River	Jan.	2	0								9						6	1.5	4.5
	Feb.	11	0								18						36	0.5	1.6
	June	5	0	4						1							10	0.5	1.0
	July	35	10	41	1				1		1						92	0.5	1.0
	Aug.	22	6	44	1			1									62	0.7	1.6
Red River	May	0	1							2							2	1.0	2.0
	June	6	1		2				1								13	0.2	0.4
	July	3	0	1	1												8	0.3	0.7
	Aug.	5	1	6	7												14	0.9	2.2
Newsome Creek	May	1	0														2	0.0	0.0
	June	7	2	11	1				1								20	0.6	1.4
	July	4	0	3													12	0.3	0.8
	Aug.	10	0	17	1					1							20	1.0	1.9
Mill Creek	June	4	0	6													16	0.4	1.8
	July	2	0														2	0.0	0.0
Meadow Creek	Aug.	0	2														8	0.0	0.0
Johns Creek	June	0	2	1													6	0.2	0.5
Big Elk Creek	June	1	0	2					1								1	3.0	3.0
Selway River	Feb.	12	0								53						21	2.5	4.4
	March	4	0								3						6	0.5	0.8
	May	12	0				1			1							20	0.1	0.2

CREEL CENSUS SUMMARY

Fishery Management Region 2, 1980

Water	Month	Res	Non-Res.	Fish Caught												Hrs.	F/Hr.	F/A	
				WRB	HRB	SH	CT	BK	DV	WF	BC	SB	LB	CC	BCH				
RIVERS AND STREAMS (Cont.)																			
Lochsa River	Jan.	4	0								7						12	0.6	1.8
	Feb.	24	0				1			212							58	3.7	8.9
	March	16	3				1			151							61	2.5	8.0
	April	12	0							46							20	2.3	3.8
	May	8	0	1			2		1								32	0.1	0.5
	July	5	4		15		4										9	2.2	1.7
	Aug.	7	7	44			6				1						22	2.3	3.6
	Sept.	4	0				5										9	0.6	1.3
	Big Sand Creek (Lochsa)	June	5	0	2			18	2									12	1.8
Middle Fork Clearwater River	Feb.	8	0							43							13	3.3	5.4
North Fork Clearwater River	March	4	0				3			1							7	0.6	1.0
	April	45	0	5			3			502							132	3.8	11.3
	May	27	0				33			16							50	1.0	1.8
	June	23	0	13			6		3								19	1.2	1.0
	July	15	0	5			2										28	0.3	0.5
	Aug.	27	1	8			25		1	3							66	0.6	1.3
	Beaver Creek	Aug.	3	0	6			3										18	0.5
Skull Creek	June	2	0	3													1	3.0	1.5
	July	13	0	15													13	1.2	1.2
Little North Fork	Aug.	6	0	5			1										12	0.5	1.0

CREEL CENSUS SUMMARY

Fishery Management Region 2, 1980

Water	Month	Res	Non-Res.	Fish Caught												Hrs.	F/Hr.	F/A	
				WRB	HRB	SH	CT	BK	DV	WF	BC	SB	LB	CC	BCR				
RIVERS AND STREAMS (Cont.)																			
Orogrande Creek	June	2	0	1													4	0.3	0.5
	July	5	0	4				2									6	1.0	1.2
Rhodes Creek	June	14	0	11					6								18	0.9	1.2
Sylvan Creek	June	3	0				2										1	2.0	0.7
Clearwater River	Aug.	6	0		3												7	0.4	0.5
Lapwai Creek	May	10	0	8													14	0.6	0.8
Boulder Creek (Potlatch)	May	2	2														4	0.0	0.0
Moose Creek (Potlatch)	May	2	0	9													6	1.5	4.5
Orofino Creek	July	3	1														4	0.0	0.0
Lolo Creek	July	13	1	32													13	2.5	2.3
Eldorado Creek	July	6	0	5			5										2	5.0	5.0
Weaver Creek	June	1	0					5									1	5.0	5.0
Lawyers Creek	May	44	0	119													74	1.6	2.7

CREEL CENSUS SUMMARY

Fishery Management Region 2, 1980

Water	Month	Res.	Non-Res.	Fish Caught													Hrs.	F/Hr.	F/A
				WRB	HRB	SH	CT	BK	DV	WF	BC	SB	LB	CC	BCR				
RIVERS AND STREAMS (Cont.)																			
Palouse River	May	48	16		143												143	1.0	2.2
	June	12	2		41												25	1.6	2.9
	Aug.	4	2		5				1								19	0.3	1.0
	Sept.	2	0						1								1	1.0	0.5
Big Sand Creek (Palouse)	May	2	0						3								1	3.0	1.5
Snake River	Jan.	7	1		2												7	0.3	0.3
	March	35	2		31					1			1		1		153	0.2	0.9
	April	54	0		20								11				205	0.2	0.6
	May	13	0		4								2				32	0.2	0.5
	Aug.	13	17		5					1			22		1	41	82	0.9	2.3
	Sept.	6	0										25			50	9	8.3	12.5
Salmon River	Jan.	24	0														66	0.0	0.0
	Feb.	160	2			18											592	0.1	0.1
	March	127	0			26				3							700	0.1	0.2
	April	8	3							1							20	0.1	0.1
	May	2	0														2	0.0	0.0
	June	2	0														4	0.0	0.0
	Sept.	49	0														148	0.0	0.0
	Oct.	44	15			20								3			205	0.1	0.4
	Nov.	44	1			9				1							181	0.1	0.2
Little Salmon River	May	10	0			8				2							15	0.7	1.0
	June	40	3			46				6							39	1.3	1.2
Rapid River	June	4	1		7					9							13	1.2	3.2

CREEL CENSUS SUMMARY

Fishery Management Region 2, 1980																			
Water	Month	Res.	Non-Res.	Fish Caught												Hrs	F/Hr.	F/A	
				WRB	HRB	ST	CT	BK	DV	WF	BC	SB	LB	CC	BCR				
RIVERS AND STREAMS (Cont.)																			
Graves Creek	May	7	0	6													5	1.2	0.9
Slate Creek	May	9	0	23													18	1.3	2.6
Skookumchuck Creek	May	2	0	14				1									4	3.8	7.5
Mallard Creek	July	2	0	1				2									6	0.5	1.5
Bargamin Creek	July	0	5	2			1										15	0.2	0.6
Whitebird Creek	June	3	0														3	0.0	0.0
Eagle Creek	April	3	0	2						1							12	0.3	0.3
Crooked Creek	June	2	0	2													2	1.0	1.0
	Aug.	1	0	1													2	0.5	1.0
Rice Creek	May	3	0	12													9	1.3	4.0

CREEL CENSUS SUMMARY

Fishery Management Region 2, 1980

Water	Month	Fish Caught													Hrs.	F/Hr.	F/A			
		Res.	Non-Res.	WRB	HRB	KOK	CT	BK	DV	WF	BC	SB	LB	CC				BCR		
LAKES AND RESERVOIRS																				
Dworshak Reservoir	June	24	5		30	45										3	102	0.8	2.7	
	Aug.	13			4	19											49	0.5	1.8	
Subtotal		37	5		34	64									3	151	0.7	2.4		
Winchester Lake	May	165	20		277		3(RBxCT)									67	339	1.0	1.9	
	Sept.	29	6		78												100	0.8	2.2	
	Oct.	2	0													1	6	0.2	0.5	
Subtotal		196	26		355		3									68	445	1.0	1.9	
Moose Creek Reservoir	May	5	0		9												8	1.1	1.8	
	June	12	0		23												39	0.6	1.9	
	Aug.	3	0		13												7	1.9	4.3	
	Sept.	3	1		4												4	1.0	1.0	
Subtotal		23	1		49												58	0.8	2.0	
Soldiers Meadow	May	128	8		129												316	0.4	0.9	
	Oct.	52	6		156												170	0.9	2.7	
Subtotal		180	14		285												486	0.6	1.5	
Manns Lake	May	105	0		116												201	0.6	1.1	
Spring Valley Res.	May	461	32		2060												28	1126	1.9	4.2
	June	38	8		75												10	115	0.7	1.9
	July	15	12		10												4	39	0.4	0.5
	Aug.	28	2		16												10	71	0.4	0.9
	Sept.	5	8														5	14	0.4	0.4
	Oct.	15	1		47													43	1.1	2.9
Subtotal		562	63		2208											57	1408	1.6	3.6	

CREEL CENSUS SUMMARY

Fishery Management Region 2, 1980

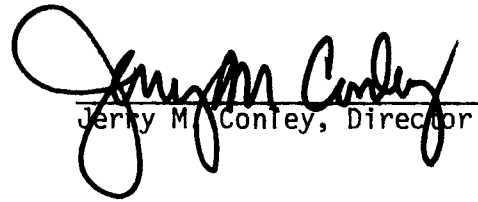
Water	Month	Fish Caught														Hrs	F/Hr.	F/A	
		Res.	Non-Res.	WRB	HRB	KOK	CT	BK	DV	WF	BC	SB	LB	CC	BCR				
LAKES AND RESERVOIRS (Cont.)																			
Waha Lake	May	190	2		772	41	(Coho)										510	1.6	4.2
	June	13	0		16	10	(Coho)										13	2.0	2.0
	Sept.	3	0		12												9	1.3	4.0
	Oct.	1	1		4	3	(Coho)										2	3.5	3.5
Subtotal		20	3		804	54	(Coho)										534	1.6	4.1
Campbell's Pond	Feb.	3	0		15			10									9	2.8	8.3
HIGH MOUNTAIN LAKES																			
Hoodoo Lake	June	2	0					2									3	3.7	5.5
Fish Lake (Cedars)	Aug.	6	0					14	1								17	0.9	2.5
Walton Lakes	July	1	0					11									4	2.8	11.0
Baldy Lake (7-Devils)	Aug.	2	0					2									1	2.0	1.0
Middle Knob Lake	July	2	0					6									8	0.8	3.0
Lower Knob Lake	July	2	0														2	0.0	0.0
Upper Tri lby Lake	Aug.	3	0					3									8	0.4	1.0
Middle Tri lby Lake	Aug.	3	0					2									4	0.5	0.7
Spreadpoint Lake	Aug.	3	0					10									9	1.1	3.3
Saddle Creek Lake	Aug.	3	0					2									9	0.2	0.7
Res.	- Resident Angler	WRB	- Wild Rainbow Trout	CT	- Cutthroat Trout	BC	- Bullhead Catfish												
Non-Res.	- Non-Resident Angler	HRB	- Hatchery Rainbow Trout	BK	- Brook Trout	SB	- Smallmouth Bass												
		SH	- Adult Steelhead	DV	- Dolly Varden	LB	- Largemouth Bass												
		KOK	- Kokanee	WF	- Whitefish	CC	- Channel Catfish												
						BCR	- Black Crappie												

Submitted by:

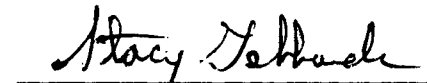
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