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OREGON STATE GAME COMMISSION

FISHERY DIVISION



1967 ANNUAL REPORT

FISHERY DIVISION

Editors:

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OREGON STATE GAME COMMISSION

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INTRODUCTION

Anglers found an abundance of salmon off the Oregon coast in 1967. The calculated sport catch of over 376,000 was the largest on record. The rate of catch was 1.12 fish per angler-day. On several occasions, over 1,000 sport-fishing boats were counted in the Yaquina Bay offshore fishery. The previous high boat count at Yaquina was 816 in 1964.

A three-year opossum shrimp transfer program was completed in 1967. A number of oligotrophic lakes in the Cascade Mountains were stocked with opossum shrimp from Alberta, Canada for the third consecutive year in hopes that natural reproduction will eventually enhance fish production.

Over 20 million game fish weighing approximately 1,224,000 pounds were released in public waters of the State in 1967. About 75 percent of the fish released were resident species.

A new State law requiring a permit from the State Land Board for the removal of gravel in streams has enabled district fishery biologists to incorporate stipulations in permits, thus reducing or eliminating damage to trout and salmon habitat.

Much work was done with State and Federal organizations in improving game fish habitat in streams supporting resident as well as anadromous species. Improvements ranged from the placement of gabion deflectors to the removal of logging debris.

Lake of the Woods in southern Oregon became a popular ice-fishing area in January when a new all-year fishing regulation went into effect. Kokanee, concentrated in a shoal area, were readily caught on both bait and lures.

Fintrol-5 was used by the Fishery Division to eradicate undesirable species of fish in a new impoundment in eastern Oregon. Suckers and minnows made no attempt to avoid lethal concentration of this toxin.

In a cooperative project with the U. S. Forest Service, the Game Commission completed a 100-acre fishing impoundment (Jubilee Lake) in northeastern Oregon. The impoundment will be used entirely for recreation with a fishery scheduled for the summer of 1968.

The brown trout study begun in 1965 was continued in the upper Deschutes watershed. Marked fingerling brown trout were planted for the third consecutive year in a 35-mile section of the river. Over 81 percent of the brown trout recovered at seven electrofishing stations were marked.

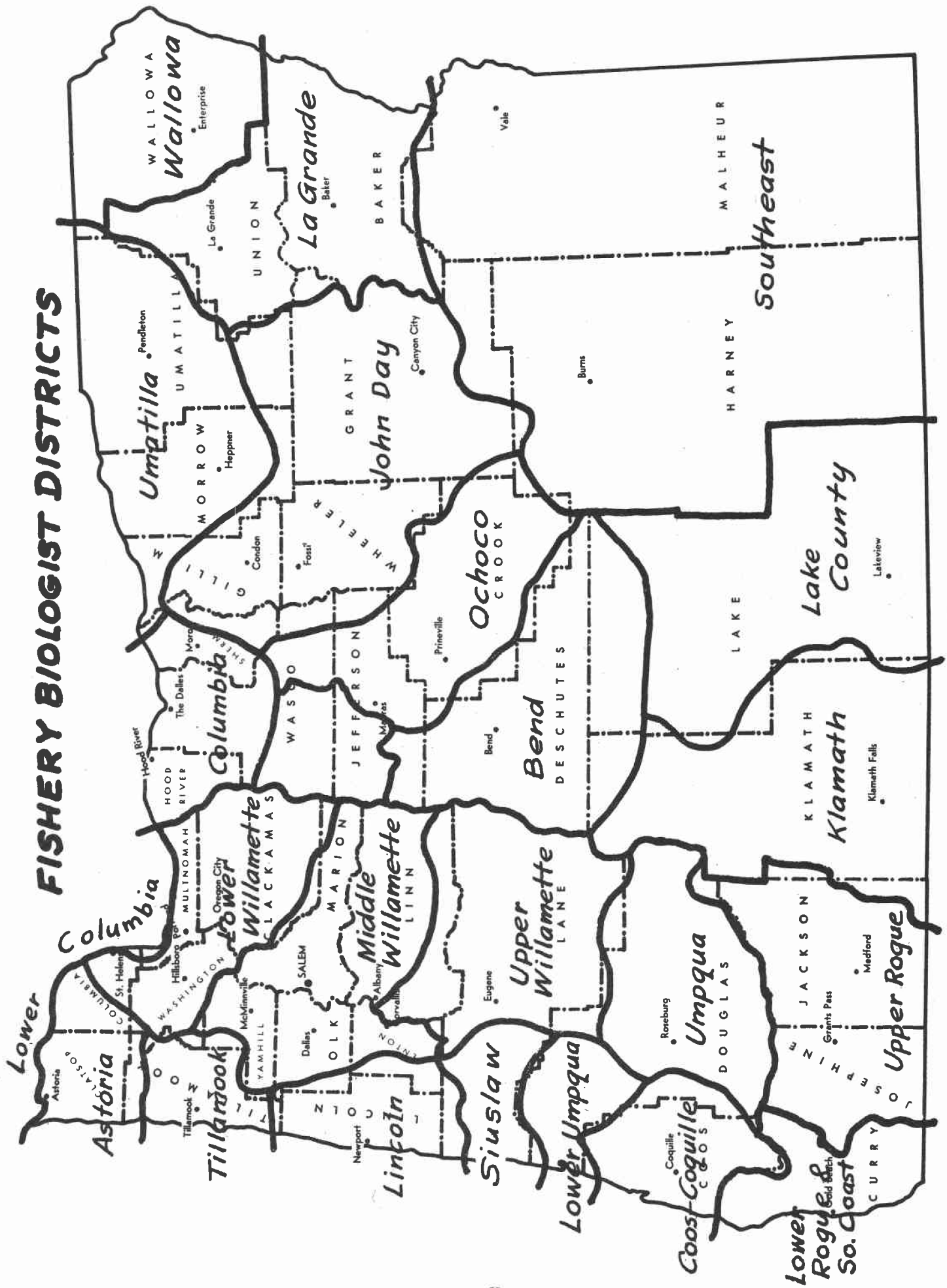
Anglers enjoyed excellent steelhead fishing in the 1966-67 season. The average rate of catch was 14.3 hours per steelhead. Over 83 percent of the winter steelhead returning to the Alsea Hatchery were marked hatchery fish.

Low stream flows during the summer months resulted in the loss of juvenile trout and salmon in a number of streams. About 3,000 trout were salvaged and an equal number or more lost when Chickahominy Reservoir receded to a sump. Small losses also occurred in a few other eastern Oregon reservoirs because of low water.

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FISHERY BIOLOGIST DISTRICTS



FISH ABBREVIATIONS

AS Atlantic salmon
 B bullhead catfish
 BB black bass, or bass
 BC black crappie
 Bg bluegill sunfish
 BlB black bullhead
 BlC blue catfish
 Br brown trout
 BrB brown bullhead
 BSu bridgelip sucker
 BT brook trout
 C crappie
 CC channel catfish
 Ch chinook salmon
 ChF chinook salmon (fall)
 ChJ chinook salmon (jack)
 ChS chinook salmon (spring)
 Clm chiselmouth
 Co coho salmon
 CoJ coho salmon (jack)
 Cot cottid
 Cp carp
 CRC Columbia River chub
 CS chum salmon
 CSu coarsescale sucker
 Ct cutthroat trout
 D dace
 DV Dolly Varden trout
 F flounder
 FC flathead catfish
 Gf goldfish
 Gr greenling
 GS green sunfish
 GSg green sturgeon
 GT golden trout

K kokanee
 Lam lamprey
 LB largemouth bass
 Lc lingcod
 LT lake trout
 Mt madtom
 Mu mullet
 P perch
 Pk pumpkinseed sunfish
 PS pink salmon
 R rockfish
 Rb rainbow trout
 RbF rainbow trout (fall)
 RbS rainbow trout (spring)
 Ro roach
 RsS reidside shiner
 SB smallmouth bass
 SCT blackspotted cutthroat
 Sg sturgeon
 Sh shad
 Skb stickleback
 Sq squawfish
 SS sockeye salmon
 St steelhead
 StB striped bass
 StS steelhead (summer)
 StW steelhead (winter)
 Su sucker
 Tc tomcod
 WC white crappie
 Wf whitefish
 Wm warmouth bass
 WSg white sturgeon
 YB yellow bullhead
 YP yellow perch

UMPQUA DISTRICT

Jerry A. Bauer and Ronald L. McDivitt

The number of fish moving over the Winchester ladder in the North Umpqua River in 1967 is shown in Table 1 along with counts made in the past nine years. Most runs were near average in size, but an unusually large number of spring chinook jacks passed over the ladder.

Resting hole counts of spring chinook in the South Umpqua for the years 1958 through 1967 are shown in Table 2.

In the Umpqua spring chinook fishery, 316 anglers interviewed had caught 18 salmon at an average rate of 56.3 hours per fish.

The offshore salmon data are included in Table 66. The catch was about 6,000 fish below the number recorded in 1966, but the reduction in catch was attributed to poor fishing weather experienced in August.

Angling pressure and success at Diamond Lake were similar to those recorded in 1966. Catch statistics for Diamond Lake for the period 1963 through 1967 are shown in Table 3. The weight of fish food organisms obtained at Diamond Lake for the period 1954 through 1967 is shown in Table 4.

Results of fish population sampling with gill nets and trap nets in the Umpqua system are shown in Table 5.

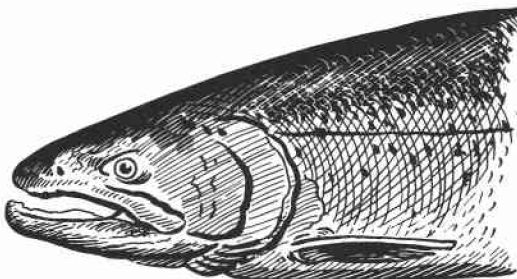


Table 1

Winchester Dam Counts, North Umpqua River, 1958 to 1967

Species	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
<u>Spring Chinook</u>										
Adults	3,856	3,460	3,594	4,711	5,626	9,222	5,792	8,631	5,967	4,146
Jacks	542	327	456	542	924	1,798	3,011	3,099	1,302	4,890
TOTALS	4,398	3,787	4,050	5,253	6,550 /1	11,020	8,803	11,730	7,269	9,036
<u>Fall Chinook</u>										
Adults	61	108	70	72	99	121	279	85	268	401
Jacks	0	3	1	18	5	64	93	97	36	318
TOTALS	61	111	71	90	104	185	372	182	304	719
<u>Coho Salmon</u>										
Adults	492	768	215	389	419	569	841	1,979	649	622
Jacks	81	50	131	142	129	658	325	283	268	673
TOTALS	573	818	346	531	548	1,227	1,166 /2	2,262 /3	917 /4	1,295
<u>Summer Steelhead</u>	2,041	2,049	2,732	3,141	3,072 /1	4,827	2,900	5,428	6,185	4,818
<u>Winter Steelhead</u>	6,350	6,372	6,138	5,192	7,734 /1	5,847	7,726	9,472	9,935	8,589
<u>Coastal Cutthroat</u>	87	108	48	106	306	308	142	420	796	2,364

/1 Affected by loss of grate.

/2 In addition, 720 adults stocked in tributaries above dam.

/3 In addition, 600 adults stocked in tributaries above dam.

/4 In addition, 500 adults stocked in tributaries above dam.

Table 2

South Umpqua Spring Chinook Inventory,
1958 through 1967

Year	Number of Fish Observed			Total Count
	Above Falls	Below Falls	Jackson Creek	
1958	43	26	25	94
1959	93	20	7	120
1960	57		<u>/1</u>	57
1961 <u>/2</u>	108	39	<u>/1</u>	147
1962	135	59	6	200
1963	175	131	62	368
1964	90	46	39	175
1965	161	57	24	242
1966	424	162	57	643
1967	121	54	35	210

/1 Time and water conditions did not allow counts to be made.

/2 Scuba was used for the first time to make counts.

Table 3

Summary of Diamond Lake Catch Statistics,
1963 through 1967

Year	Angler Trips	Total Trout Caught	Poundage	Catch per Acre (Pounds)	Average Weight of Fish (Pounds)	Fish per Hour	Fish per Angler Trip
1963	93,338	256,781	243,942	84.4	0.95	0.61	2.75
1964	115,532	416,091	342,028	118.3	0.82	0.71	3.60
1965	139,460	413,727	320,469	110.8	0.77	0.64	2.97
1966	133,676	317,599	253,652	87.7	0.80	0.53	2.38
1967	131,940	322,889	247,103	85.5	0.77	0.51	2.45

Table 4

Bottom Food Production at Diamond Lake,
1954 through 1967

Year	Month of Sample	Pounds per Acre
1954	October	2.6
1955	October	92.8
1956	October	145.2
1957	October	169.1
1958	October	109.9
1959	October	69.2
1960	October	170.7
1961	October	113.6
1962	October	137.7
1963	October	121.4
1964	October	73.7
1965	October	62.0
1966	October	93.6
1967	October	74.3

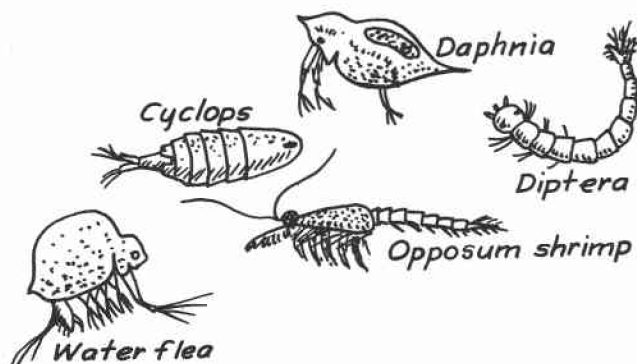


Table 5

Composition and Length Frequency of Catch by Gill and Trap Nets, Represented in One-Inch Size Groups,
Umpqua District, 1967

Water	Number Nets Set Gill Trap	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)												
					6 and Under	7	8	9	10	11	12	13	14	15	16	17	18
Big Twin Lake	2	BT	4	100.0	1	1	1	1	1								
Buckeye Lake	2	BT	38	100.0		1	4	12	7	10	2	1		1			
Calamut Lake	2	BT	17	100.0			1	3	2			2	5	4			
Canyonville Pond	1	BC	31	100.0	10	7	14										
Cliff Lake	2	BT	121	100.0	2		6	23	57	30	3						
Diamond Lake	4	Rb	109	100.0		5	25	50	7	1	9	8	3	1			
Fish Lake	2	BT Rb	20 9	69.0 31.0	2 1	2	3	6	3	2		2					
Fords Pond	1	Bg LB YP BrB	9 1 30 116 ¹ / ₁	5.8 0.6 19.2 74.4	9 1 6												
Lemolo Reservoir	3	Br K Rb Ro	57 12 27 3	57.6 12.1 27.3 3.0	7 1	4	3	2	2	14	10	12	2	1			
Little Twin Lake	2	BT	6	100.0		1	2		1	2							
Lucille Lake	2	BT	3	100.0	1			1	1								
Maidu Lake	2	BT	86	100.0	15	19	14	9	12	6	1	3	3	3	1		
Plat I Reservoir	2	Bg YP BrB	750 1 5,500 ² / ₂	12.00 0.02 87.98	750				1								
Skookum Lake	2	BT	10	100.0			3	1		4	1	1					
Toketee Reservoir	2	Br	15	100.0	5	6	1	1			1	1					
Wolf Lake	2	BT	12	100.0	7	3	2										

¹/₁ Size range, 6 to 10 inches.

²/₂ Size range, 2 to 12 inches.

ROGUE AND SOUTH COAST DISTRICTS

William I. Haight and Arvo G. Riikula

The counts of anadromous species over Gold Ray Dam for the period 1942 through 1967 are shown in Table 6. The 1967 spring chinook count was the second lowest ever recorded in the history of the station. The low run may be associated with the severe flood of 1964. The 1967 summer steelhead run showed a slight improvement over the previous year but was still much below the desired level.

Table 6

Counts of Anadromous Fish Runs,
Gold Ray Dam, Rogue River,
1942 through 1967

Year	Spring Chinook		Coho		Steelhead	
	Number	Percent Jacks	Number	Percent Jacks	Summer Run	Winter Run
1942	43,429	15.6	4,608	4.7	5,725	
1943	38,052	11.0	3,290	6.1	5,768	16,534
1944	31,940	13.1	3,230	10.4	5,282	13,855
1945	33,718	17.8	1,907	4.4	4,804	14,196
1946	30,065	16.5	3,840	5.5	3,266	11,185
1947	43,740	9.5	5,340	3.1	3,431	10,754
1948	27,742	10.8	1,764	4.8	1,995	8,707
1949	20,028	10.5	9,440	4.3	2,761	8,073
1950	16,767	18.8	2,007	11.8	3,570	9,667
1951	21,111	25.0	2,738	8.4	2,630	6,608
1952	18,488	23.0	320	2.2	3,954	11,550
1953	33,558	13.8	1,453	9.2	3,266	11,143
1954	25,785	21.6	2,138	10.8	2,352	7,599
1955	16,550	17.7	480	9.6	1,123	5,251
1956	29,952	13.7	421	5.4	2,358	9,370
1957	18,770	16.9	1,075	7.2	1,316	5,045
1958	15,716	13.1	732	11.5	1,099	3,888
1959	14,707	19.9	371	4.8	905	4,755
1960	26,217	23.8	1,851	5.1	1,323	7,535
1961	33,035	17.8	232	0.8	1,391	9,604
1962	32,651	17.0	457	0.0	2,702	11,005
1963	41,527	17.5	3,835	8.3	1,336	9,801
1964	38,437	16.2	168	0.0	555	6,629
1965	49,488	17.0	428	2.5	1,637	7,571
1966	32,588	10.7	178	0.0	900	12,980
1967	16,483	20.7	89	0.0	1,608	6,343

Spawning ground counts for fall chinook in Rogue River tributaries and other south coast streams are presented in Table 7.

Table 7
Comparative Fall Chinook Spawning,
South Coast Streams

Stream	Redds per Mile		Fish per Mile	
	1967	8-Year Average	1967	8-Year Average
Anvil Creek	64	115	108	124
Deep Creek	12	44	12	32
Dry Creek	41	175	62	157
East Winchuck River	0	35	4	16
Edson Creek	0	120	28	40
Jack Creek	18	82	28	14
Quosatana Creek	202	148	128	73
South Chetco River	12	36	14	35
Applegate River	252	<u>1</u>	249	<u>1</u>
Illinois River	29	<u>1</u>	25	<u>1</u>

1 No records prior to 1967.

The catch of spring chinook in the lower Rogue River for the period 1965 through 1967 is shown in Table 8. A sample of 150 spring chinook in the lower river fishery indicated that about 84 percent were 4-year fish.

Table 8
Spring Chinook Catch, Lower Rogue River,
1965 through 1967

Year	Angler Days	Chinook	Hours per Fish	Fish per Angler
1965	12,149	1,510		0.12
1966	12,948	1,964	40.0	0.15
1967	17,859	2,372	42.8	0.13
AVERAGES	14,319	1,949	41.4	0.14

The offshore salmon catches out of Gold Beach on the Rogue and Chetco River at Brookings are included in the general offshore salmon table (Table 66).

A record of 385 anglers fishing salmon on south coast streams, exclusive of the Rogue, shows that about 10 hours of angling effort were required to land one salmon.

A creel census of steelhead anglers fishing the lower Rogue River revealed that approximately 12,500 anglers caught 4,930 steelhead, 551 chinook, and 22 cutthroat. The catch rate was 6.0 hours per steelhead. In the previous two years the catch rate has ranged from 4.9 to 6.0 hours per steelhead. Creel data on the winter steelhead fishery are shown in Table 67.

Creel data for the upper and lower Rogue District trout fisheries are included in Table 68.

Fish population studies conducted with experimental gill nets are shown in Table 9.



Table 9

Composition and Length Frequency of Fish Populations
of Rogue District Lakes and Reservoirs, 1967

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups																
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over
Agate Reservoir	11/2	2	Rb	105	57.7		40	64	1													
			Co	5	2.7		2	3														
			LB	6	3.3		5	1														
			BrB	65	35.7		21	22	13	6	3											
			Su	1	0.6											1						
Emigrant Reservoir	10/26	3	Rb	6	3.4					1	1	2		1	1							
			LB	6	3.4						1											
			BC	94	52.8	8	27	6	15	21	12	5										
			Bg	2	1.1	2																
			BrB	8	4.5						4	3	1									
			Su	19	10.7					2												
			Ro	43	24.1	1	29	6	7							2	3	2	7	2	3	
Fish Lake	10/25	4	Rb	145	30.0		6	42	38	15	23	13	5									
			BT	379	70.0			22	191	119	6			1								
Howard Prairie Reservoir	11/9	4	Rb	167	83.1	1	4	34	20	72	22	1	2	4	7							
			BrB	34	16.9				4	8	10	10	2									
Hyatt Lake	6/15	3	LB	9	1.5				1	4	3	1										
			Bg	34	5.6		5	16	11	1	1											
			Pk	28	4.6		8	20														
			GS	2	0.3		2															
			BrB	81	13.4			1		8	48	22	2									
			Ro	453	74.6	48	317	83	5													
Little Hyatt Lake	6/15	2	Pk	9	31.0	9	6	13		1												
			BrB	20	69.0																	
Lower Squaw Lake	11/3	3	Rb	68	34.9		1	31	28	6						1						
			Ct	45	23.0			1		5	19	9	2	6	2	1						
			BC	68	34.9	1	26	21	6	6	6	1	1									
			BrB	14	7.2				4	2	5	2	1									

Table 9 (continued)

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups																
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over
Selmac Lake	4/13	3	LB	3	5.2				1			1					1					
			BC	1	1.7		1															
			Bg	29	50.0	7	11	9	1	1												
			BrB	17	29.3							3	2	1	8	2	1					
			Ro	3	5.2				1	2												
			BSu	5	8.6											1	2	2				
Upper Squaw Lake	11/3	2	Ct	22	36.7			2	1	13	5	1										
			BrB	38	63.3		10	19	1	5	3											
Willow Creek Reservoir	10/27	2	Hb	31	19.7		4	5	12	7	1	1	1									
			K	126	80.3				1	9	100	16										



UPPER WILLAMETTE DISTRICT

Ralph A. Swan

Spring chinook salmon began to spawn below Leaburg Dam in mid-September. Approximately 500 adults utilized this area. The second most heavily used spawning area was a one-mile section of Lost Creek. In a spawning ground survey on September 29, 254 adults and 12 jacks were observed in the one-mile section of stream. The count in the same section of stream in 1965 was 117 fish; and in 1964, 137 fish.

Good catches of cutthroat trout were made in Fern Ridge Reservoir during the winter months. The Long Tom River below Fern Ridge Dam also produced many cutthroat trout during December and January.

Estimates of catches in Upper Willamette District reservoirs are presented in Table 10.

Table 10

Upper Willamette Reservoir Creel Data, 1967

Reservoir	Number Anglers	Hours Fished	Species	Number of Fish	Fish per Angler	Fish per Hour
Cottage Grove	21,915	84,480	Rb	77,245	3.5	0.91
Cougar	27,776	105,844	Rb ChS-SS	31,365 <u>8,923</u> 40,558	1.5	0.38
Dorena	66,370	298,170	Rb Co LB BrB	93,125 58,203 12,638 <u>3,328</u> 167,294	2.5	0.56
Fall Creek	86,825	381,314	Rb ChS	127,474 <u>149,644</u> 277,118	3.2	0.73
Hills Creek	20,985	75,258	Rb	38,555	1.8	0.51

The records of 712 anglers in guided parties on the McKenzie River show that the average angler caught 6.8 fish per trip and that the trout were taken at a rate of just over one fish per hour.

Results of Leaburg Dam trap counts for the period 1963 through 1967 are shown in Table 11.

Table 11

Leaburg Dam Trap Catches,
1963 through 1967

Year	Rainbow		Steelhead	Cutthroat	Dolly Varden	Chinook Salmon (Spring)
	Over 14 Inches	Under 14 Inches				
1963	49	72	3	11		
1964	46	48	2	2		
1965	95	131	15	6		4
1966	27	72	18	2	1	1
1967	17	37	5	2		4

Creel data for lakes, reservoirs, and streams in the district are included in Table 68.

Results of population sampling with gill nets are shown in Table 12.

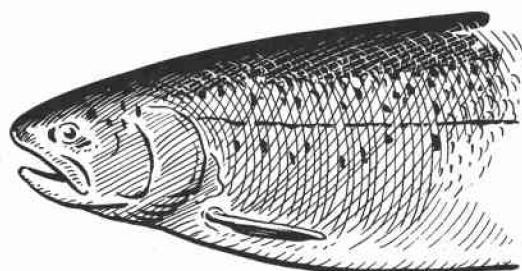


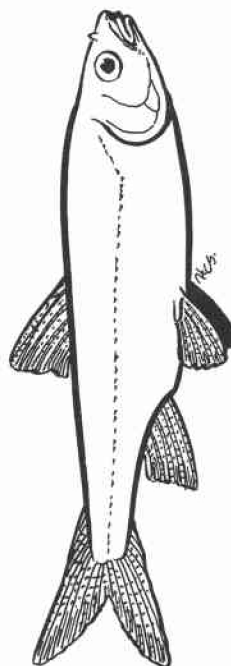
Table 12

Composition and Length Frequency of Catch by Gill Nets, Represented in One-Inch Size Groups,
Upper Willamette Waters, 1967

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																			
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over			
Chetlo Lake		1	BT Rb	3 1	75.0 25.0				3	1															
Cottage Grove Reservoir	4/7/67	2	Ct	9	31.0			1		3	4					1									
			Rb	20	69.0			16	3	1															
	8/15/67	3	Rb	40	88.9					5	27	6	2												
			BrB SB	3 2	6.7 4.4	3				1	1														
Emerald Lake		1	BT	9	100.0						3	2	4												
Fern Ridge Reservoir	6		WC	28	24.6		3	2	6	8	4	3	2												
			LB	13	11.4		1	1	7	3	1														
			BrB	8	7.0		2	4	2																
			Ct	11	9.6					2	1	3	4	1											
			Bg	2	1.8	1	1																		
			PS	1	0.9																				
			CSu	50	43.8							2	17	31											
			Sq	1	0.9					1															
Heart Lake		1	BT	26	100.0		2	4	2	3	7	5		2											
Hills Creek Reservoir	4/11/67	3	Rb	13	17.1					1	3		2	3		1	3								
			BrB	5	6.6					2	1	1													
			CSu	57	75.0		1		1	2	9	37	3	2	3										
	8/14/67	3	ReS	1	1.3	1																			
			Rb	4	5.6																				
	8/14/67	3	BrB	29	40.3																				
			CSu	39	54.1		5	3	11	6	4	8	2	13	2	4	6								
	10/11/67	4	Rb	31	26.1						2	1	4	6	3	3						1			
			BrB	24	20.2						2	2	1												
			CSu	63	52.9		3	2	14	2	2	1	6	4	2	1	2								
			ReS	1	0.8	1																			

Table 12 (continued)

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over
Irish Camp Lake		1	Ct	3	100.0			1		2												
Lookout Point Reservoir		1	Sq	68	90.7				5	6	7	2	20	18	8	2						
			CSu	6	8.0																	
			ChS	1	1.3							1			3	1	1	1				
Waldo Lake		9	K	11	78.6						1		3	4	2							
			BT	3	21.4																	
Wolf Lake		1	Ct	19	79.2					1	2	8	4	2	1							1
			BT	5	20.8						1	2	1									



MIDDLE WILLAMETTE DISTRICT

J. J. Wetherbee

Anglers benefited from an excellent run of steelhead in the Santiam River system in 1967.

Counts of steelhead and spring chinook at Foster and Green Peter Dams on the South and Middle Santiam Rivers indicated that less than one-third of these runs migrated into the Middle Santiam, whereas spawning ground counts prior to construction of the dams showed that the majority of steelhead and chinook used the Middle Fork.

The trout fishery of Detroit Reservoir for the period 1954 through 1967 is presented in Table 13. Again the bulk of the past season's catch was legal hatchery trout.

Creel data for other district lakes, reservoirs, and streams are included in Table 68.

Results of fish population studies are shown in Table 14.

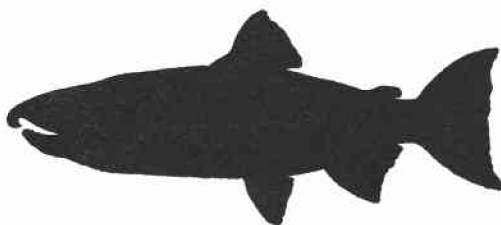


Table 13
Comparison of Catch, Detroit Reservoir,
1954 through 1967

Year	Anglers Checked	Total Fish	Fish per Angler	Fish per Hour	Estimated Anglers	Estimated Catch
1954	3,559	9,868	2.8	0.54	49,062	131,796
1955	4,022	5,689	1.4	0.39	61,738	87,050
1956	2,446	3,381	1.4	0.39	64,787	89,406
1957	2,029	4,254	2.1	0.44	91,660	147,332
1958	1,452	2,546	1.8	0.42	97,950	171,412
1959	2,514	6,157	2.4	0.69	108,753	259,847
1960	2,808	3,817	1.4	0.39	134,331	227,639
1961	1,332	2,269	1.7	0.51	137,186	246,881
1962	1,413	2,512	1.8	0.56	<u>/1</u>	<u>/1</u>
1963	2,437	4,807	2.0	0.54	141,717	310,500
1964	3,188	6,965	2.2	0.55	134,303	293,549
1965	1,461	3,870	2.6	0.72	<u>/1</u>	<u>/1</u>
1966	751	2,211	2.9	0.71	<u>/1</u>	<u>/1</u>
1967	957	1,924	2.0	0.58	<u>/1</u>	<u>/1</u>

/1 Not estimated.



Table 14

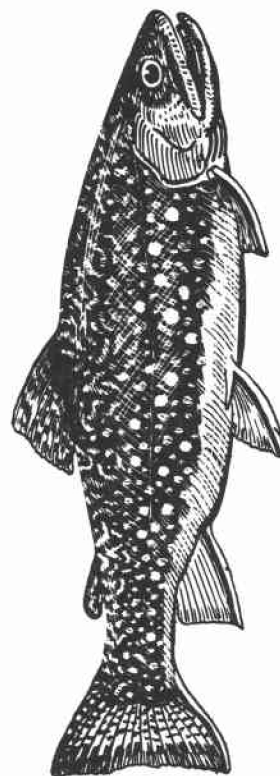
Composition and Length Frequency of Catch by Gill Net, Represented in One-Inch Size Groups,
Middle Willamette District, 1967

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																	
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Duffy Lake		2	Rb BT	17 20	45.9 54.1		2	2	1	6	9	1	1										
Elk Lake		3	BT Rb K	33/1 1 15/1	67.4 2.0 30.6	5	11	3	4	1	1	1	1										
Foster Reservoir	4/6	4	Rb St Co Ch Su	79 78 5 6 8	44.9 44.3 2.8 3.4 4.6		1	5	28	35	9	1											
	7/25	3	Rb St Su Sq	14 1 1 1	82.3 5.9 5.9 5.9	1			1	2	2	3	6	1									
Green Peter Reservoir	4/6	4	Rb St Ct	31 8 2	75.6 19.5 4.9		2	4	2	1	18	1											
	7/6	3	Rb St Ct	39 1 2	92.8 2.4 4.8		4	5	12	11	5	2										1	
Hanks Lake		1	BT Rb	2 9	18.2 81.8		1	4	3			2											
Hunts Lake		1	Ct Rb	4 5	44.4 55.6		1	2	1	4	1												
Jo Jo Lake		2	Rb	10	100.0					1	3	4	1	1									

/1 Crayfish damage; not all fish measured.

Table 14 (continued)

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																	
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Jorn Lake		2	Rb BT	7 24	22.6 77.4	2	3	1	2	1	1	1	1										
Lost Lake		1	Rb BT Ct	15 6 1	68.2 27.3 4.5	1	1	2	7	6	2		2										
Mouse Creek Impoundment		1	Rb Ct	5 1	83.3 16.7			2	1		2												
Mowich Lake		2	Rb BT	2 16	11.1 88.9	1	2	6	1	1	1		5	1									
Thistle Creek Impoundment		1	Ct	6	100.0	2	3	1															
Tule Lake		1		0																			



LOWER WILLAMETTE DISTRICT

Julius B. Massey

Approximately 4,000 steelhead were calculated to have passed over Marmot Dam on the Sandy River in the winter of 1966-67. The run exceeded the 14-year average by about 1,000 fish. Slightly over 50 percent of the fish observed in the ladder were marked. Table 15 shows the percentage and number of hatchery and wild steelhead calculated to have passed over Marmot Dam for the period 1953 through 1967.

The sport catch of spring chinook salmon in the lower Willamette was estimated to be 15,200 fish. Historical data on the Willamette spring chinook fishery are presented in Table 16.

Resting hole counts for spring chinook on the Molalla River are shown in Table 17.

Kokanee was the predominant species in the catch at Timothy Lake. Table 18 shows the catch data for Timothy Lake for the period 1957 through 1967.

Results of fish population sampling of district waters are shown in Table 19.

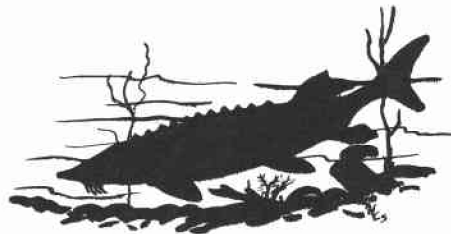


Table 15

Steelhead Migration at Marmot Dam, Sandy River,
1953 through 1967

Migratory Season	Hatchery Fish		Number Wild Fish	Total Steelhead
	Number	Percent		
1953-54	<u>1</u>		2,200	2,200
1954-55	<u>1</u>		1,581	1,581
1955-56	<u>1</u>		2,240	2,240
1956-57	79	4	1,975	2,054
1957-58	249	8	2,917	3,166
1958-59	69	3	2,290	2,359
1959-60	34	2	1,578	1,612
1960-61	375	12	2,749	3,124
1961-62	175	4	3,871	4,045
1962-63 <u>2</u>	901	27	2,425	3,326
1963-64	1,641	42	2,252	3,893
1964-65	2,074	38	3,457	5,531
1965-55	1,330	37	2,260	3,590
1966-67	2,079	51	1,997	4,076

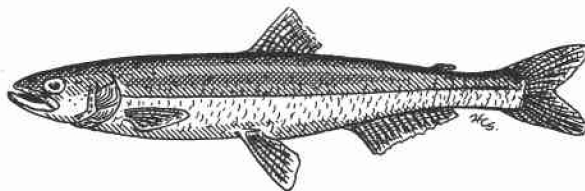
1 None expected.2 First year for return of adult steelhead originating from Gnat Creek Hatchery.

Table 16

Calculated Willamette River Spring Chinook Runs,
1946 through 1967

Year	Lower Willamette Sport Fishery Harvest	Escapement		Calculated Total Run	Sport Catch as Percent of Run
		Willamette Falls	Clackamas River		
1946	12,600	53,000	3,000	68,600	18
1947	12,000	45,000	2,000	59,000	20
1948	8,300	30,000	1,800	40,100	21
1949	9,100	27,000	1,750	37,900	24
1950	8,800	14,500	1,500	24,800	35
1951	13,300	34,300	2,000	49,600	27
1952	12,500	52,200	2,800	67,500	19
1953	16,400	76,400	4,000	96,800	17
1954	11,500	31,100	1,800	44,400	26
1955	9,000	22,000	1,500	32,500	28
1956	16,000	58,600	3,000	77,600	21
1957	11,500	39,300	2,000	52,800	22
1958	15,500	45,200	2,100	62,800	25
1959	18,500	31,900	3,000	53,400	35
1960	8,000	14,400	1,800	24,200	33
1961	6,400	18,900	2,200	27,500	23
1962	9,100	26,100	3,000	38,200	24
1963	13,600	30,500	4,000	48,100	28
1964	18,600	36,300	3,500	58,400	31
1965	9,000	29,100	3,000	41,100	22
1966	12,800	28,200	3,000	44,000	29
1967	15,200	56,200	3,000	74,400	16
AVERAGES	12,200	36,400	2,500	51,100	24

Table 17

Spring Chinook Salmon Resting Hole Counts,
Molalla River, 1961 through 1967

Year	Number Fish Counted
1961	238
1962	245
1963	274
1964	173
1965	95
1966	214
1967	310

Table 18

Angler Catch Success, Timothy Lake,
1957 through 1967

Year	Fish per Angler	Fish per Hour
1957	2.2	0.37
1958	2.1	0.43
1959	4.3	1.00
1960	0.4	0.10
1961	1.7	0.45
1962	1.9	0.48
1963	0.9	0.25
1964	2.0	0.51
1965	2.0	0.58
1966	2.0	0.67
1967	1.9	0.58

Table 19

Composition and Length Frequency of Catch by Gill and Trap Nets, Represented in One-Inch Size Groups,
Lower Willamette District, 1967

Water	Date	Number Nets Set Trap Gill	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
						3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Blue Lake	6/1	2	LB BC BrB Bg GS Sq Sg	3 6 2 18 15 7 1	5.8 11.5 3.8 34.6 28.9 13.5 1.9				1	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

1 Part of catch destroyed by crayfish.
2 Angling.

Table 19 (continued)

Water	Date	Number		Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																		
		Trap	Gill				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Middle Rock Lake	8/18	2		BT Rb	9 <u>1</u> 1	90.0 10.0		1	1	1	1	2													
Mirror Lake	8/29	2		BT Rb	13 <u>1</u> 6 <u>1</u>	68.4 31.6			3	2	1														
Russ Lake	10/20	2		BT	25 <u>1</u>	100.0		2	4		1	10	3		4										
Serene Lake	8/19	2		BT	9 <u>1</u>	100.0				2	2	1	1												
Shining Lake	9/8	2		BT	34 <u>1</u>	100.0						7	5	4	2	1	1								
Skookum Lake	8/2	2		BT	33	100.0		2	13	6	11	1													
Switch Creek Pond	8/13	<u>2</u>		Ct	7	100.0			4	3															
Timothy Lake	5/5	2		BT Rb Ct K Sct	14 8 3 1 2	50.0 28.6 10.7 3.6 7.1			2	4	3		3	1	1	1									
	5/5	1		BT Rb Ct K	24 2 3 4	72.7 6.1 9.1 12.1		1	4	7	5	2	2		1			1		1					
	5/5	<u>3</u>		Rb Ct K	1 1 1	33.3 33.3 33.3											1								
Veda Lake	7/25	1		BT	21 <u>1</u>	100.0				4	7		4												

1 Part of catch destroyed by crayfish.
2 Angling.
3 Curtain net.

LA GRANDE DISTRICT

Robert C. Sayre

The annual spawning ground data for spring chinook in the La Grande District for the period 1961 through 1967 are presented in Table 20. Steelhead spawning ground counts for the years 1966 and 1967 are shown in Table 21.

Fish population surveys of La Grande District waters are shown in Table 22.

Creel data for the district are included in the statewide general creel census table (Table 68).



Table 20

Spring Chinook Spawning Ground Counts Completed
on Streams of the La Grande District, 1967,
With Six Years of Previous Redd Counts

Stream	Date	Miles Checked	Spring Chinook Salmon, 1967				Previous Total Redds						
			Live	Dead	Jacks	Total	1961	1962	1963	1964	1965	1966	
Catherine Creek, lower	9/29	9.0	0	0	0	0	67				43	101	115
Catherine Creek, upper	9/29	7.0	0	0	0	0	212	20	66	18	3	47	15
Catherine Creek /1	8/29	9.0	48	6	4	58	27						
Catherine Creek, N. Fk.	9/29	2.6	0	0	0	0	31						
Catherine Creek, S. Fk.	9/29	2.2	0	0	0	0	17						
Grande Ronde River	9/28	18.0	0	0	0	0	216	122	179	20	172	128	143
Sheep Creek	9/28	10.0	0	0	0	0	24						
Lookingglass Creek /1	8/28	6.2	67	16	13	96	92	82	83	55	141	101	210
Minam River, upper	9/25	3.0	0	4	0	4	32				68	78	77
Minam River /1	8/28	7.5	51	18	0	69	25	37	118	63	108	75	69
TOTALS							743	261	446	156	535	530	629

/1 Fish Commission of Oregon survey. Their survey of Catherine Creek for 1967 not included in the total.

Table 21
Steelhead Redd Counts, La Grande District,
1967

Stream	Date	Miles Surveyed	Steelhead	Redds	Redds per Mile	
					1967	1966
Burnt Corral Creek	5/31	2.00	0	38	19.0	12.0
Finley Creek	5/16	0.50	0	6	12.0	7.3
Five Points Creek	6/7	15.00	0	44	2.9	7.0
Fly Creek	6/2	5.00	0	39	7.8	8.2
Limber Jim Creek	6/2	2.00	6	15	7.5	6.4
McCoy Creek	6/6	11.00	0	173	15.7	24.4
Meadow Creek (lower)	6/6	8.00	0	34	4.3	
Meadow Creek (upper)	5/29	10.00	0	82	8.2	11.9
North Fork Clarks Creek	6/5	5.00	0	19	3.8	1.7
Phillips Creek	5/15	2.25	1	14	6.2	4.6
Rock Creek	6/14	2.00	0	12	6.0	11.5
South Fork Spring Creek	5/1	1.00	0	18	18.0	1.6
Spring Creek (Summerville)	5/8	3.00	0	3	1.0	4.0
Willow Creek	6/5	1.50	0	20	13.3	14.6
TOTALS		68.25	7	517		
AVERAGES					7.6	8.8

Table 22

Composition and Length Frequency of Catch by Gill Net, Represented in One-Inch Size Groups,
for Some Waters of the La Grande District, Northeast Oregon, 1967

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19 & Over	
Balm Creek Reservoir	6/23/67	1	Rb	39	100.0		1	21	5	8	3	1										
	10/1/65	2	Rb	424	100.0			241	175	3	4		1									
Cached Lake	8/8/67	1	BT	4	100.0			1		2	1											
	8/30/60	<u>1</u>	BT	1	100.0				1													
Crater Lake	8/16/67	2	BT	49	100.0			10	13	4	4	3	8	6		1						
	10/20/65	2	BT	90	100.0			2	6	5	7	19	23	25	3							
Heart Lake	8/10/67	1		0	<u>2</u>																	
	7/26/63	1	Rb	5	100.0				1	2	2											
Hidden Lake	8/18/67	2	BT	23	100.0			8	5	7	3											
	9/3/60	<u>1</u>	BT	87	100.0		1	18	56	7		5										
Higgins Reservoir	4/19/67	1	Rb	5	7.9							1		1		1	1	1				
			Ct	3	4.8																	
			BT	1	1.6					1	1											
			Su	54	85.7												1					
	4/13/65	2	Rb	36	24.8				2	10		24										
			RbxCt	2	1.4					1									1			
			Ct	2	1.4				1													
			Su	105	72.4							105										
Killamacue Lake	7/26/67	2	BT	18	100.0		6	4	3	2	1	1	1									

1 Creel.
2 Winter loss.

Table 22 (continued)

Water	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19 & Over	
Lost Lake	7/19/67	2	BT	23	100.0		1	2		5	10	3	1							1		
	8/13/57	1	BT	13	100.0		1	1	3	1	1	1	3	1	1							
Morgan Lake	4/13/67	1	Rb BT	27 37	42.2 57.8			2	7 16	17 13	6	1	1	1								
	8/9/67	2	BT	49	100.0		2	13	18	11	5											
Pop Lake	8/20/58	<u>1</u>	BT	33	100.0		1	8	12	10	1	1										
	7/20/67	2	BT	38	100.0			16	16	3	2	1										
Red Mountain Lake	9/17/64	1	BT	7	100.0		1	4	1	1												
	7/27/67	2	BT LT	16 1	94.1 5.9			4	2	2	4	4			1							
Rock Creek Lake	10/8/65	2	BT LT	15 30	33.3 66.7			1	2	5	1	3	2	3	7	10	4	3		1		
	7/21/67	2	BT	27	100.0		1	7	18	1												
Unity Reservoir	4/19/67	1	Rb Ro Su	35 60 3	35.7 61.2 3.1		10	40	8	1	11	8	4	11					1			
	7/13/66	2	Rb Ro Su	147 205 19	39.6 55.3 5.1		6	20	52	7	23	29	4	6								
							120	80	4	1	8	6	4						1			

1 Creel.2 Winter loss.

WALLOWA DISTRICT

Kenneth L. Witty

Annual chinook spawning ground counts for Wallowa County streams for the period 1960 through 1967 are shown in Table 23.

The annual spawning ground counts for steelhead in Wallowa County streams for the period 1960 through 1967 are presented in Table 24.

Creel data for the Wallowa District are included in the general statewide creel census table (Table 68).

Results of population studies with experimental gill nets are shown in Table 25.

Catch estimates of the Wallowa Lake fishery determined through a special study are shown in Table 26.

In the 1967 season, about 14 percent of the 1,153 kokanee examined bore a left pectoral mark. Since 20 percent of the kokanee planted in 1965 had the left pectoral fin removed, much of the catch in 1967 was from hatchery releases.

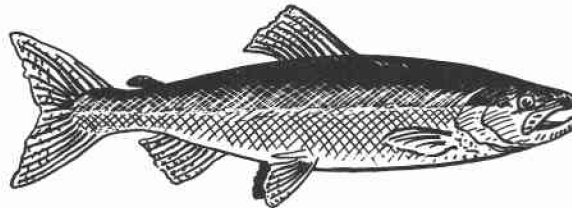


Table 23

Annual Spawning Ground Counts of Chinook Within an Index Unit
on Some Wallowa County Streams, 1960 to 1967

Stream	Counts by Year							
	1960	1961	1962	1963	1964	1965	1966	1967
Imnaha River /1	560 (323)	282 (221)	383 (248)	175 (133)	461 (260)	264 (189)	460 (223)	575 (215)
Lostine River /2	97 (95)	43 (44)	78 (53)	143 (97)	224 (335)	85 (102)	295 (187)	313 (177)
Wallowa River				10 (41)	25 (35)	20 (32)	16 (14)	7 (15)
Big Sheep Creek					43 (40)	19 (26)	83 (61)	58 (30)
Lick Creek					12 (14)	4 (25)	52 (47)	48 (30)
Bear Creek					17 (24)	12 (15)	8 (12)	21 (11)
Wenaha River				32 (186)	98 (167)	26 (79)	335 (278)	193 (185)
Hurricane Creek				8 (33)	41 (28)	8 (17)	0 (1)	5 (3)
Spring Creek					11 (20)	3 (6)	10 (6)	1 (4)

NOTE: Redd counts are shown in parenthesis.

1 Oregon Fish Commission counts.

2 Oregon Game Commission and Oregon Fish Commission counts.

Table 24

Annual Spawning Ground Counts for Steelhead,
Wallowa County, 1960 through 1967

Year	Streams in Sample	Miles Checked	Steelhead	Steelhead Redds	Redds per Mile
1960	4	21	46	29	1.38
1961	8	15	11	106	7.07
1962	10	44	108	143	3.25
1963	6	12	58	84	7.00
1964	6	46	7	197	4.28
1965	33	128	110	582	4.55
1966	26	123	226	1,214	9.87
1967	20	104	138	1,102	10.60

Table 25

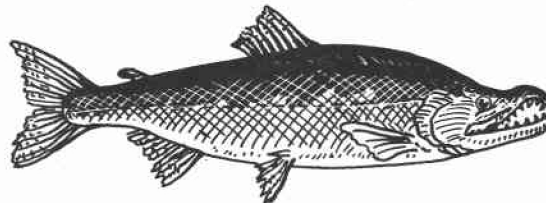
Composition and Length Frequency of Catch by Gill Nets, Represented in One-Inch Size Groups,
in Some Wallowa County Lakes, 1967

Lake	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)															
					4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Francis Lake	2	Rb BT	2 33	5.7 94.3	1		1	2	2	6	8	6	4	3	1					
Frazier Lake	3	BT	24	100.0	4	8	3	6	2					1						
Kinney Lake	1	Rb	27	100.0			25	1				1								
Little Frazier Lake	2		0																	
Maxwell Lake	2	BT	34	100.0	3	18	9	4												
Papoose Lake	1	Rb BSu	1 2	33.3 66.7	1	1					1									
Pocket Lake	2	BT	53	100.0	4	20	19	9	1											
Wallowa Lake	6	K Rb LT Wf CSu BSu	109 73 1 1 2 11	55.3 37.1 0.5 0.5 1.0 5.6	1	3	2	48	43	16	17	28	4	2	1		1		1	

Table 26

A Comparison of Total Catch Estimates, Wallowa Lake,
1956 through 1967

Year	Total Catch	Rainbow	Kokanee	Lake Trout	Dolly Varden	Whitefish
1956	46,020	32,356	13,190	0	474	
1958	42,862	32,263	9,843	756	0	
1959	30,295	25,770	3,821	504	200	
1961	16,501	15,282	934	285	0	
1963	11,800	10,795	303	654	48	
1965	24,546	19,030	5,190	241	0	85
1966	41,127	27,797	13,223	45	46	16
1967	46,277	28,277	18,000	0	0	21



SOUTHEAST DISTRICT

Larry E. Bisbee

Creel data for the Southeast District are included in Table 68. Angler success was quite similar to that of 1966, but pressure showed a marked decline. Rainbow, black crappie, and channel catfish were the important species represented in the catch.

Results of population sampling with nets are shown in Table 27.

Results of electrofishing in small streams are presented in Table 28.

The length of female fish at maturity for a number of waters is shown in Table 29. The average fork length of maturing female fish in some waters overpopulated with rough fish continued to decline.

The water level of Chickahominy Reservoir receded to near dead storage by mid-July, and an estimated 4,000 to 5,000 trout were lost later when the water became too warm. However, approximately 3,000 trout had been salvaged prior to the mid-July loss. About 6,000 trout were also lost in Murphy Reservoir when irrigation demands removed all impounded water by late September.

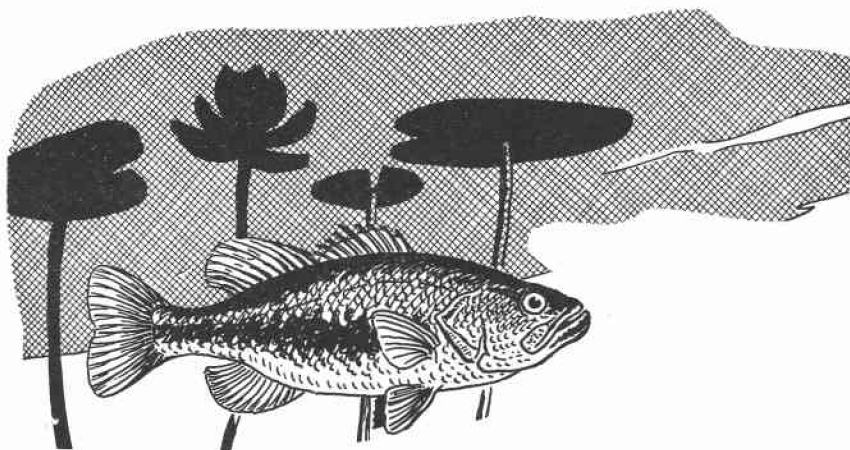


Table 27

Composition and Length Frequency of Catch by Gill and Trap Nets, Represented in One-Inch Size Groups, Southeast District, 1967

Water	Date	Nets Set Trap Gill	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																					
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over		
Antelope Reservoir	10/2	1	BSu	251	59.1							10	91	143	6													
			RIB	63	14.8	4.8	2	2	7	10	32	9	1	1														
			CSu	53	12.5								3	17	25	2	4	2										
			Clm	37	8.7							15	19	3														
			Rb	16	3.8	12.2																						
			Sq	4	0.9																							
			ReS	1	0.2				1					4														
Beulah Reservoir	9/29	1	Rb	60	90.9	11.1																						
			Clm	4	6.1																							
			CSu	2	3.0																							
			ReS	3,002	94.9		1,606	802	444	129	21																	
			CSu	78	2.5			1	3																			
			BSu	28	0.9																							
			Rb	24	0.8	10.0																						
Bully Creek Reservoir	6/7	1	Sq	19	0.6			9																				
			Cot	7	0.2			2																				
			Clm	3	0.1																							
			CSu	135	44.7																							
			Sq	92	30.5	9.6																						
			Rb	41	13.6																							
			BSu	15	4.9																							
Bully Creek Reservoir	9/6	1	ReS	12	4.0																							
			Clm	7	2.3																							
			BSu	291	62.7																							
			Cp	70	15.1																							
			Rb	51	11.0	13.2																						
			YP	48	10.4	7.6																						
			ReS	2	0.4																							

Table 27 (continued)

Water	Date	Trap	Gill Nets Set	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																				
								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Chickahominy Reservoir	6/23	1		Rb RsS	72 46	61.0 39.0	6.1		6			9	25	32	3	1	1	1										
Cottonwood Creek Reservoir	9/30	1		Rb Cot	95 1	99.0 1.0	7.3 1.0		1				1	10	79	3	1	1										
		2		Rb	139	100.0	7.3						3	34	84	16	2											
Hot Lake	4/17	1		Ct	2	100.0	19.4																		1			1
Juniper Lake	4/17	1		Rb	74	100.0	9.2									23	48	3										
Littlefield Reservoir	9/8	1		Rb	103	100.0	7.5						4	24	54	8	11	2										
Malheur Reservoir	10/18	1		Rb BSu RsS	175 119 2	59.1 40.2 0.7	10.5		1 1				4	4	6	30	55	16	1	1								
		3		Rb BSu	59 11	84.3 15.7	10.2						1		1	23	19	14	1									
Mann Lake	4/17	2		Rb Ct	29 48	37.7 62.3	9.9 10.2								3	13	9	4										
Murphy Reservoir	8/14	1		Rb	52	100.0	8.3						6	26	10		3	7										
Owyhee Reservoir	10/4	4		ELB BC BSu Cp CLm CC LB Mt YP CSu Sq	209 194 121 84 23 14 12 12 5 4 3	30.7 28.5 17.8 12.3 3.4 2.0 1.8 1.8 0.7 0.6 0.4	8.1 7.6 7.6 7.7 5.4 4.5		6 5	22 9	22 1	4 23	1 96	4 53	1 5	59 3	65 14	16 46	2 36	1 7								

Table 27 (continued)

Water	Date	Nets Set Trap Gill	Number Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																				20 & Over
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Owyhee Reservoir (continued)	10/4	15	BC Sq Cp YP BSu Clm CSu LB CC BLB	218 45 34 32 30 24 11 10 3 3	53.2 11.0 8.3 7.8 7.3 5.9 2.7 2.4 0.7 0.7	7.5 6.4 5.9 8.8 9.5	1 																				

Table 27 (continued)

Water	Date	Trap	Gill Nets Set	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																				
								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Upper Cow Lake	10/21	1		RaS	66	86.9		3	61		2																	
				BSu	3	4.0								1	1													
				D	2	2.6																						
				HLB	2	2.6	4.4																					
				Rb	1	1.3	10.9							1														
				CSu	1	1.3																						
				Sq	1	1.3																						
				CSu	13	61.9																						
				BSu	4	19.0																						
				Rb	3	14.3	12.9																					
				Sq	1	4.8																						
Warm Springs Reservoir	8/26	2		YP	4,317	97.08	2.1	1	3,942	362	3	2	3	2	2													
				Bg	78	1.76	1.1	77																				
				RaS	20	0.45		2	9	8	1																	
				SB	8	0.18	3.1		2	6																		
				LB	8	0.18	3.0	1	2	5																		
				CSu	8	0.18																						
				BrB	5	0.11	6.1		1																			
				BSu	2	0.04																						
				Sq	1	0.02		1																				
				YP	64	36.6	7.1		1																			
				Sq	58	33.2																						
CSu	41	23.4																										
BSu	4	2.3																										
Rb	3	1.7	9.5																									
CLm	2	1.1																										
CC	2	1.1	19.1																									
RaS	1	0.6																										
Yellow Jacket Lake	9/23	1		Rb	94	79.7	8.5																					
				K	24	20.3	3.4		2	22																		

Table 28

A Summary of Fish Population Samples Taken in Streams in the Southeast District
by Means Other Than Nets, 1967

Stream	Date	Method Used	Total Sample Length (Feet)	Species	Number of Fish by One-Inch Size Groups (Fork Length)													
					1	2	3	4	5	6	7	8	9	10	11	12	13	14 & Over
Crane Creek	8/31	shocker	400	Rb Ct Wf RsS	30 71	23 185	20 78	34 1	34 16	6	4	6	5	1	2			
						2												
Little Malheur River	8/29 10/26	shocker	1,375	Rb Cot Wf D /1 RsS BSu D /2	26 107 101 73 43	31 224 276 48 11 10	59 64 4 17 15 20 16	74 18 6	49 19	3 3	3 4							
												1	2					
Malheur River, Section A (Above Harper Diversion Dam)	1/18	shocker	900	Rb RsS D /1	24 1	177 1	24 1	9 3	46 35	66 27	50 10	27 2						1
Malheur River, Section A (Below Harper Diversion and above Southside Diversion)			400	Rb RsS BSu CIm D /1 CSu	2 13 2		17 7	10 4	5		1		1	1	1	1		1
North Fork Malheur River	8/30	shocker	600	Rb Wf D /1 Cot RsS	8 73	4 12 169	9 21 31	9 27	10 2	5 1	2 3		1 6	1 2				

/1 Speckled dace.

/2 Longnose dace.

/3 Common.

Table 29

Average Fork Length of Female Fish in Each Stage of Maturity
as Collected in Gill-Net Sets, Southeast District, 1967

Water	Species	Immature		Maturing		Mature	
		Number in Sample	Average Length (Inches)	Number in Sample	Average Length (Inches)	Number in Sample	Average Length (Inches)
Antelope Reservoir	Rb	25	11.2	1	14.5		
Beulah Reservoir	Rb	9	10.1	14	12.8		
Bully Creek Reservoir	Rb	46	11.5	2	13.0		
Cottonwood Creek Reservoir	Rb	59	7.4				
Hot Lake	Ct					1	17.2
Juniper Lake	Rb	30	9.3	4	9.2		
Littlefield Reservoir	Rb	43	7.5				
Malheur Reservoir	Rb	24	9.9	6	11.3	1	12.8
Mann Lake	Rb	5	10.4			1	10.1
	Ct	17	10.1				
Murphy Reservoir	Rb	22	8.6	2	11.1		
Owyhee River (lower)	Rb	1	9.2				
South Cottonwood Reservoir	Rb	15	7.5	3	7.7		
Star Mountain Reservoir	Rb	2	8.8				
Upper Cow Lake	Rb			1	13.3		
Yellow Jacket Lake	Rb	7	8.6	1	10.2		

LAKE COUNTY DISTRICT

Henry E. Mastin

The average catch per unit of effort in Lake County trout waters for 1967 was just under one fish per hour and similar to that recorded in 1966. The catch rate has fluctuated very little in the past 14 years. The average catch rates for district waters for the years 1954 through 1967 are shown in Table 30.

Table 30

Comparison of Creel Census Data for Lake County Waters,
1954 through 1967

Year	Total Fish	Total Anglers	Total Hours	Fish per Angler	Fish per Hour
1954	3,744	1,174	4,729	3.19	0.79
1955	2,741	885	2,255	3.10	1.22
1956	2,432	640	1,922	3.80	1.27
1957	2,005	542	1,837	3.70	1.09
1958	3,660	1,203	3,963	3.04	0.92
1959	4,188	1,002	3,754	4.18	1.12
1960	3,064	1,013	3,082	3.02	0.99
1961	3,529	839	3,728	4.21	0.95
1962	5,527	1,061	5,122	5.21	1.08
1963	4,977	1,130	5,188	4.40	0.96
1964	3,939	1,306	5,006	3.02	0.79
1965	3,801	991	4,052	3.84	0.94
1966	3,984	1,109	4,189	3.59	0.95
1967	4,145	1,410	4,449	2.94	0.93
AVERAGES	3,695	1,022	3,805	3.62	0.97

Creel data for district waters are shown in Table 68.

Results of population sampling with gill nets and trap nets are shown in Table 31.

Most waters within the district produced good trout growth, but several reservoirs are overpopulated with undesirable species at the expense of trout production. Some loss of trout was experienced in a few shallow lakes in the district when the dissolved oxygen reached levels below the amount necessary to sustain trout. Both summer and winter losses were observed.

Table 31

Composition and Length Frequency of Catch by Gill and Trap Nets, Represented in One-Inch Size Groups,
Lake County District, 1967

Water	Date	Number Nets Set Trap Gill	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																			20 & Over	
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Campbell Lake	spring	1	Rb	49	100.0					4	18	16	9	2												
Deadhorse Lake	spring	1	Rb	10	3.5						4	6														
			BT	9	3.2																					
			K	264	93.3																					
Lofton Reservoir	spring	1	BT	8	100.0																					

1 Size range, 6 to 7 inches.



COLUMBIA DISTRICT

Allan B. Lichens

Washougal summer steelhead smolts were released in Hood River. This is the first year that other than native stock was used in the Hood River system. The steelhead were released earlier than had been anticipated because of a pipeline failure at Gnat Creek Hatchery. However, 42 percent of the release was intermediate in smoltification. Under the revised sampling program, an estimated 11,704 anglers caught 3,094 summer steelhead. Creel data on Hood River steelhead is included in Table 67.

Historical data on the Hood River steelhead fishery are presented in Table 32.

Table 32

Steelhead Creel Census by Year, Hood River,
1958 through 1967

Year ^{/1}	Anglers Checked	Hours Fished	Fish Caught	Fish per Angler	Hours per Fish
1958	120	123	22	0.18	5.6
1959	367	666	45	0.12	14.8
1960	187	379	10	0.05	37.9
1961	169	334	27	0.16	12.4
1962	705	1,352	73	0.10	18.5
1963	783	1,095	45	0.06	24.3
1964	777	1,167	76	0.10	15.4
1965 ^{/2}	238	524	40	0.17	13.1
1966 ^{/2}	299	633	52	0.17	12.2
1967 ^{/2}	333	661	58	0.17	11.4

^{/1} Year covers period from October 16 of previous year to October 15 of the year listed.

^{/2} Only completed anglers were interviewed during the period of the one-fish bag limit.

The steelhead sampling program on the lower Deschutes River was expanded in 1967 to include the lower east side of the river.

Steelhead spawning ground counts in the Deschutes River below Pelton Dam for the years 1963 through 1967 are shown in Table 33.

Steelhead spawning ground data for Buckhollow and Bakeoven Creeks for the years 1961 through 1967 are shown in Table 34.

Creel sampling data on trout for Hood River and the lower Deschutes areas are included in Table 68.

Table 33

Steelhead Redd Counts on Three Miles of River
Below Pelton Reregulation Dam, Deschutes River,
1963 through 1967

Year	Redds Observed
1963	469
1964	84
1965	244
1966	308
1967	203

Table 34

Steelhead Redd Counts on Established Sample Areas
of Buckhollow and Bakeoven Creeks,
1961 through 1967

Year	Buckhollow Creek		Bakeoven-Deep Creeks	
	Redds	Fish	Redds	Fish
1961	32	2	43	18
1962	9			
1963	10		30	5
1964	0 (57) <u>/1</u>	0 (43) <u>/1</u>	5	
1965	44			
1966	24	2	0 (69) <u>/2</u>	0 (29) <u>/2</u>
1967	0 (35) <u>/1</u>	0 (12) <u>/1</u>	16	8

/1 Regular count area 11.0 to 14.0 mile point. Alternate redd counts (shown in parentheses) were made from 0.0 to 7.25 mile point because of barriers.

/2 Regular count area above 8.0 mile point. Alternate redd counts (shown in parentheses) were made from 0.0 to 8.0 mile point because of barriers.

Information on population studies for lakes and reservoirs in the district are presented in Table 35.

Average length at maturity for district waters is presented in Table 36.

Table 35

Composition and Length Frequency of Catch by Gill Nets,
Represented in One-Inch Size Groups,
in Some Columbia District Lakes, 1967

Lake	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)												
					4	5	6	7	8	9	10	11	12	13	14	15	16
Cigar	1	BT	11	100.0		2	5	2	2								
Clear	4	Rb	72	94.7	14	47	10		1								
		BT	4	5.3		1		2	1								
Lost	4	Rb	18	78.3					2	6	4		1	1	1	3	2
		Br	5	21.7					2	1							
Monon	4	Rb	6	14.6						5	1						
		BT	35	85.4		2			1	4	11	13	3	1			
Olallie	4	Rb	7	20.0						1	3	2		1			
		BT	21	60.0							1	1	1	1			
		K <u>1</u>	7	20.0	1	3	3	1	11	5	1	1	1				
Timber	2	BT	17	100.0		1	7	5	1				2				1
Top	2		0														
Upper	1		0														

1 Kokanee caught by angling.

Table 36

Average Fork Length of Female Fish in Each Stage of Maturity
as Collected in Gill-Net Sets in Some Columbia District Lakes, 1967

Lake	Species	Stage of Maturity	Number of Females	Average Fork Length		Percent of Total
				Centimeters	Inches	
Cigar	BT	Immature	4	17.0	6.6	80.0
		Maturing	0			
		Mature	1	22.0	8.6	20.0
Clear	Rb	Immature	24	14.9	5.9	100.0
		Maturing	0			
		Mature	0			
	BT	Immature	0			
		Maturing	3	20.5	8.1	100.0
		Mature	0			
Lost	Rb	Immature	5	23.6	9.3	55.6
		Maturing	3	33.8	13.3	33.3
		Mature	1	37.6	14.8	11.1
	Br	Immature	0			
		Maturing	1	22.6	8.9	33.3
		Mature	2	62.0	24.4	66.7
Monon	BT	Immature	1	15.6	6.2	7.1
		Maturing	6	26.1	10.3	42.9
		Mature	7	27.6	10.9	50.0
Olallie	Rb	Immature	1	25.1	9.9	33.3
		Maturing	2	30.2	11.9	66.7
		Mature	0			
	BT	Immature	0			
		Maturing	9	18.5	7.3	81.8
		Mature	2	27.7	10.9	18.2
	K	Immature	0			
		Maturing	2	16.5	6.5	100.0
		Mature				
Timber	BT	Immature	2	17.0	6.6	15.4
		Maturing	7	17.9	7.0	53.8
		Mature	4	30.8	12.0	30.8

LOWER COLUMBIA DISTRICT

William E. Hosford

In the 1957 season an estimated 23,292 anglers fished the lower Columbia River between Bonneville Dam and Tongue Point. The calculated catch was 4,792 fish. Catch data for the lower river are shown in Table 37.

The sturgeon tagging program was continued, but fewer fish were tagged in 1967. A total of 728 sturgeon have been tagged in the 3-year study period. Information on the sturgeon fishery is shown in Table 38. Creel records show that less than one out of five sturgeon caught is within the legal-size range.



Table 37

Lower Columbia Creel Census by Season, 1967

Season	Method	Number Fish Caught by Species										Total Anglers	Total Hours Fished	Fish per Angler	Hours per Fish	Fish per Hour	
		Ch	Co	St	Ct	SS	Sh	Warm-Water	Nongame	Total Fish							
<u>Winter</u>																	
12/1/66-2/28/67	Bank	1		39	4				7	51	474	1,500	0.1	29.4	0.03		
	Boat			29	1				3	33	232	736	0.1	22.3	0.04		
	Combined	1		68	5				10	84	706	2,236	0.1	26.6	0.04		
<u>Spring</u>																	
3/1/67-5/31/67	Bank	778	6	95	22			14	54	969	6,988	36,403	0.1	37.6	0.03		
	Boat	626		18	2				13	659	5,227	23,009	0.1	34.9	0.03		
	Combined	1,422	6	113	24			14	67	1,646	12,298	59,862	0.1	36.4	0.03		
<u>Summer</u>																	
6/1/67 - 8/15/67	Bank	71	1	313	20	4	12	55	63	539	3,235	15,630	0.2	29.0	0.03		
	Boat	28		122	6			23	8	187	1,007	4,298	0.2	23.0	0.04		
	Combined	101	1	438	26	4	12	78	71	731	4,250	19,987	0.2	27.3	0.04		
<u>Fall</u>																	
8/16/67-11/30/67	Bank	63	75	109	342			146	283	1,018	2,376	8,662	0.4	8.5	0.12		
	Boat	244	342	132	102	1	13	87	30	938	2,591	12,238	0.4	13.0	0.08		
	Combined	309	417	241	446	1		233	313	1,960	4,974	20,921	0.4	10.7	0.09		
<u>YEAR TOTALS</u>																	
	Bank	913	82	556	388	4	12	215	407	2,577	13,073	62,195	0.2	24.1	0.04		
	Boat	898	342	301	111	1	13	110	54	1,817	9,057	40,281	0.2	22.2	0.05		
	Combined	1,833	424	860	501	5	12	325	461	4,421	22,228	103,006	0.2	23.3	0.04		

/1 Fish are outmigrant coho.

/2 Combined figures include data where no method was indicated.

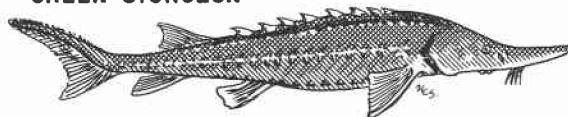
/3 Adult pink salmon.

Table 38

Sturgeon Creel Data, Lower Columbia River,
1967

River Section	Number Sturgeon	Total Anglers	Total Hours Fished	Hours per Fish
1	73	437	1,582	21.7
2	1	12	47	47.0
3	1	18	45	45.0
4	6	31	74	12.3
5	1	32	91	91.0
6	10	68	240	24.0
7	2	22	72	36.0
8	1	30	72	72.0
9	6	17	36	6.0
10	7	67	166	23.7
TOTALS AVERAGE	108	734	2,425	22.5

GREEN STURGEON



WHITE STURGEON



BEND DISTRICT

James D. Griggs

Results of fish population sampling of Bend District lakes with gill nets are presented in Table 39.

The average length of maturing trout in some Central Oregon lakes for the years 1960 through 1967 is shown in Table 40.

A summary of East and Paulina catch statistics for 1966 and 1967 is shown in Table 41.

Creel data for district lakes, reservoirs, and streams are presented in the general statewide creel census table (Table 68).

The brown trout study in the upper Deschutes system was continued. Table 42 shows results of electrofishing in the brown trout study section of the Deschutes River. Marked brown trout released as fingerling in 1966 were recovered at most of the stations. The rate of unmarked to marked brown trout was about 1 to 4.5.



Table 39

Composition and Length Frequency of Catch by Gill and Trap Nets, Represented in One-Inch Size Groups, in Some Central Oregon Lakes, 1967

Water	Date	Number Nets Set Gill Trap	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Big Cultus Lake	8/10	(Mono)	LT	1	100.0											1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

¹ Size range, 2 to 4 inches.

² Size range, 2 to 6 inches.

³ Not measured.

Table 39 (continued)

Water	Date	Number Nets Set Gill Trap	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Dark Lake	9/6	2	Rb	3	100.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

/4 Size range, 3 to 9 inches.

Table 39 (continued)

Water	Date	Number Nets Set		Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																										
		Gill	Trap				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over								
Four Oclock Lake	8/10	1		BT	4	100.0					2	2																					
Irish Lake	6/30	2		BT	33	100.0					4	6	2	1	4	10	5	1															
Johnny Lake	6/16	2		BT	21	100.0			1	2	11	2			1	2			1														
Little Cultus Lake	6/14	4		BT Rb	101	81.5			1	4	10	31	25	22	5	1	1	1															
					23	18.5					1	5	5	6	5	1																	
Little Lava Lake	8/11	3		BT Rb Wf Ro	33	20.9			2	18	2	3	4	3				1															
					5	3.2					1	2																					
					5	3.2						2																					
					115	72.7			3	75	32	5																					
Little Three Creeks Lake	7/25	1		BT Rb	9 3	75.0 25.0							1	2	3	3																	
Lucky Lake	9/22	2		BT	28	100.0									1	8	11	3	4														
Meadow Lake	8/2	2		BT	12	100.0								1	2	6	1			1													
Middle Hanks Lake	7/20	2		BT	1	100.0																											
Middle Snowshoe Lake	8/16	2		BT Rb	10	90.9							1	3	2				1	2	1												
					1	9.1																											
North Twin Lake	5/9	1		Rb Co	7	20.6																											
					27	79.4							7	20																			
9/25				K Rb	167	98.2																											
					3	1.8																											

Table 39 (continued)

Water	Date	Number Nets Set Gill Trap	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																		
						2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over
Paulina Lake	7/7	2	Rb Ro	47 562 ⁴ / ₅	7.7 92.3					3	4	5	8	7	5	4	2							
	9/6	4	Rb Ro	78 134	36.8 63.2	2	39	23	1	2	2	5	2	2										
Round Lake	9/6	2	BT	3	100.0					3														
South Twin Lake	5/8	2	Rb	185	100.0						17	84	43	28	10	3								
	9/13	2	Rb Ro	25 2	92.6 7.4					1	14	6	1	3										
Sparks Lake	7/28	3	BT AS	88 42	67.7 32.3			4	5	13	23	17	13	6	5	3	2	4	18	8	4	1		
Suttle Lake	1/11	(Mono)	K Wf	41 5	89.1 10.9			4	18	7	2		4	6										
	3/2	(Mono)	K Wf	2 3	40.0 60.0					1		1	2											
	3/22	(Mono)	K Br Wf	6 3 9	33.4 16.6 50.0				2	3	1					1		1						
	4/13	(Mono)	K Br Wf	14 2 20	38.8 5.6 55.6			1	7	4			1	1			1							
	5/23	(Mono)	AS K Wf	1 10 6	5.9 58.8 35.3			1	3	5		4	1	2										1
	10/16	4	Br K Wf AS	13 11 34 1	22.0 18.7 57.6 1.7						1	10	13	3	4	3	1	1	1	3	2	1		3

⁴/₅ Size range, 4 to 10 inches.

Table 39 (continued)

Water	Date	Number Nets Set Gill Trap	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																				20 & Over		
						2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19					
Taylor Lake	6/30	2	BT	46	100.0				10	7	5	5	9	9	1													
Three Creeks Lake	7/25	2	BT	8	42.1							1	6	1														
			Rb	11	57.9				1	2	5	3																
Todd Lake	7/28	2	BT	9	100.0				1	1	1	2	3	1														
Upper Snowshoe Lake	8/16	1	BT	15	93.7				1	4	6	1	1						1								1	
			Rb	1	6.3																							
West Hanks Lake	7/20	2	BT	30	100.0				8	16	3	1	1	1														
Wickiup Reservoir	7/11	4	Rb	18	3.3		1	7	5				3	1					1									
			Br	4	0.7																							
			Wf	10	1.8					1	1		2	3	2	1			2									
			Co	2	0.4			2																				
			Ro	511	93.8																							
Winopee Lake	9/16	2	Rb	4	2.3				1	3																		
			K	79	44.6				18	7	2	7	21	14	9	1												
			Br	16	9.0				2	2									2	2	3	2	2	1	2			
			Co	29	16.4				1	2	18	6	1	1														
			Wf	12	6.8							1	2		1	3	2	2										
			Ro	37	20.9				27	3	4	2		1														
Winopee Lake	7/12	4	Rb	2	3.2				1	1																		
			BT	14	22.2				2	2	2	1	2	1	1													
			Wf	47	74.6				1	15	23	6	2															

- ¹ Size range, 2 to 4 inches.
² Size range, 2 to 6 inches.
³ Not measured.
⁴ Size range, 3 to 9 inches.
⁵ Size range, 4 to 10 inches.

Table 40

Average Length of Maturing Female Fish
in Some Central Oregon Lakes,
1960 to 1967

Water	Species	Average Fork Lengths in Inches by Year							
		1960	1961	1962	1963	1964	1965	1966	1967
Big Cultus Lake	Rb	10.1		9.3	16.8*	14.0	9.8	8.8	
	BT			8.5		8.5	7.4	8.1	11.8*
	K					12.0	12.3	12.8	
	LT								25.4*
Big Lava Lake	BT	11.3	10.3	10.3	10.8	7.4	9.6	10.2	10.6
Blow Lake	BT						8.8*		9.1
Charlton Lake	BT							10.9	9.9
Crane Prairie Reservoir	Rb	11.8	15.1	13.6	13.8	12.7	13.4	12.7	12.7
	BT	9.6	11.1	9.8	11.6	10.8	10.7	9.5	10.3
	K	10.6	12.5	10.9	9.1	8.7	9.7	10.2	6.5*
Davis Lake	Rb	12.4	15.2		16.2	15.1	17.1	15.9	15.0
	K	12.2							14.3*
	Co							15.9	13.0
Deer Lake	BT	9.3	9.2		8.6	8.7	9.9	8.3	8.1
Doris Lake	BT					12.4	9.5	9.0	10.5
East Lake	Rb		14.5		13.5		12.5	12.9	
	BT	12.2	11.3	11.6	12.5	12.1	11.9	11.9	12.0
	Br			14.5	13.6*		19.8*		
Elk Lake	Rb		12.4	14.0	8.3	12.4			
	BT	9.4	10.2	8.6	8.2	9.4	7.1	9.7	11.2
	K		9.4*	8.5		7.4	7.5		

*Indication

Table 40 (continued)

Water	Species	Average Fork Lengths in Inches by Year								
		1960	1961	1962	1963	1964	1965	1966	1967	
Irish Lake	BT	8.4		8.9	7.1	9.8	11.3	11.6	11.7	
Little Cultus Lake	Rb	11.0*	9.8	10.5	12.5*	9.7			9.3	
	BT	10.0	10.2	10.3	11.2	8.7	8.6	8.7	9.3	
Little Lava Lake	Rb	10.4	10.4	9.0		11.4				
	BT	9.6	8.1		7.4	8.6	12.4	8.0	7.3	
Lucky Lake	BT					7.8	11.0*	7.7	10.5	
North Twin Lake	Rb	11.0	13.3	11.8	12.5	11.7	14.8*	10.6	11.5*	
Paulina Lake	Rb	12.6	14.3		13.5	12.7		11.2	10.8	
Round Lake	BT							9.1		
South Twin Lake	Rb								10.5	
Sparks Lake	BT	9.6	8.4		8.8	7.9	9.6		9.1	
Suttle Lake	Rb					9.6				
	Br K	15.2		14.5	21.1	9.1	16.5 11.7	15.7* 12.6		
Taylor Lake	BT	8.2	11.0	10.9	9.7	8.8	10.0	11.6	10.6	
Three Creeks Lake	Rb		10.3	9.6	10.5	9.7		9.2*	10.7	
	BT			9.1	9.2	9.2	9.6	10.1	10.5	
Todd Lake	BT	8.9	8.9	8.3	8.8	8.6	8.1	8.2	10.5	
Wickiup Reservoir	Rb						16.6	13.3*		
	Br	15.9			16.7	16.1		17.5	17.4	
	K	12.9			12.9	10.2	12.3	10.5	12.3	

*Indication.

Table 41

Summary of East and Paulina Lake Catch Statistics,
1966 and 1967

Lake	Year	Number Angler Trips	Total Trout Caught	Fish per Hour	Fish per Angler
East	1966	38,600	86,000	0.7	2.6
	1967	36,300	78,600	0.5	1.9
Paulina	1966	24,400	49,000	0.6	2.3
	1967	24,900	65,900	0.6	2.0

Table 42

Deschutes River Electrofishing
Wickiup Dam to Meadow Camp,
November 11 and 12, 1967

Station Location	Stream Mile	Brown Trout		Other Species			
		Marked	Unmarked	Rb	BT	K	BrB
Wickiup gauge	226.4	20	3				
Dilman Springs	224.0	10	2	3			
Bull Bend Campground	219.5	14	1			1	
Big Creek Park	207.0	10	1		2		
Big River Campground	201.0	3	3				4
Spring River mouth	190.5	1	0		35		1
Meadow Camp	173.5	0	3				
TOTALS		58	13	3	37	1	5

KLAMATH DISTRICT

Wendell H. Stout

Results of fish population surveys of district waters are shown in Table 43.

Length of female fish at maturity is presented in Table 44.

Creel data for district waters are included in Table 68.

Data from Fourmile Lake show that the kokanee are maturing at just over 5 inches in length and are of little value to the angler. The present stock of fish appears to be too large for the available food supply.

Lake of the Woods was opened to year-round fishing January 1, 1967, and anglers soon discovered that mature kokanee were concentrated under the ice in certain areas of the lake. The lake became very popular for ice fishing. In addition to spawning kokanee, anglers caught rainbow and brook trout. The lake appears to be becoming overpopulated with bullhead catfish. Bottom samples of fish food organisms taken in 1967 were extremely poor.

Some kokanee in Miller Lake matured and migrated into tributaries to spawn. Rainbow were from 5.7 to 11.4 inches in length. Kokanee varied from 8.1 to 12.4 inches in length when mature.

KLAMATH
MULLET

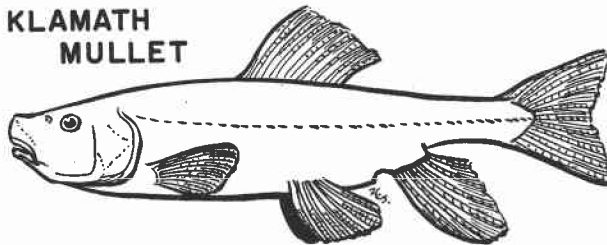


Table 43

Composition and Length Frequency of Catch by Gill Nets, Represented in One-Inch Size Groups,
Klamath District, 1967

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																		
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over		
Bert		1	BT	8	100.0		1	3		2	1	1												
Big Heavenly Twin		1	BT	31	100.0	1	6	10	9	1	1	3												
Como		2	BT	51	100.0		1	12	15	21	2													
Crescent		8	K	241	34.7							10	83	129	18	1								
	Rb		1	0.1							1													
	Wf		11	1.6		1	2	1	5					2										
	LT		1	0.1																	1			
	Ro		441	63.5																				
Dec		1	BT	9	100.0			2	2	3		1	1											
Deep		1	BT	15	100.0			2	7	5		1												
Deer		1	BT	26	100.0		2	15	3		4	2												
Devils		2	Rb	31	100.0							1	19	11										
Donna		1	BT	11	100.0			2	3			2	3	1										
Ed		1	BT	3	100.0	1	2																	
Edho		1	BT	39	100.0	1	2	15	4	10	3	4												

/1 Size range, 4 to 9 inches.

Table 43 (continued)

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Table 43 (continued)

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																	
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Miller		4	Rb K	45 132	25.4 74.6	7	20	7	1	5	3	2											
North Puck		1	BT	49	100.0	2	16	25	4	1												1	
Notasha		1	BT	13	100.0	8	5																
Odell		7	K Rb Wf Ro	37 10 81 648	4.8 1.3 10.4 83.5	2	1	2	4		3	34											
Red		1		0																			
Snow		1	BT	6	100.0	3			2	1													
Sonya		1	BT	7	100.0			1	2	4													
South Pass		1	BT	23	100.0	1	15	2				4	1										
South Puck		1	BT	14	100.0	1	6		5	1	1												
Summit		4	BT	15	100.0	2	5	1	1	1			1						1	2	1		
Tanager		1	BT	6	100.0		2	2	1													1	

2 Size range, 5 to 15 inches.

3 Size range, 4 to 10 inches.

Table 43 (continued)

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)															20 & Over		
						4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		19	
Trapper		1	BT	12	100.0				3	8						1							
Wind		1	BT	2	100.0			1			1												
Wizard		1	BT	10	100.0			2	5	1	1	1											
Zeb		1	BT	13	100.0			1	6	3	2	1											

/1 Size range, 4 to 9 inches.

/2 Size range, 5 to 15 inches.

/3 Size range, 4 to 10 inches.

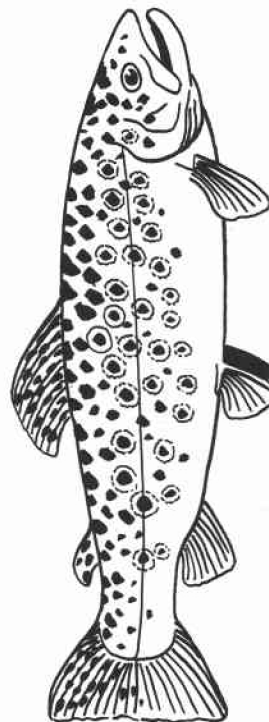


Table 44

Average Length of Maturing Female Fish, Klamath District,
1958 through 1967

Lake	Species	Average Fork Lengths in Inches by Year									
		1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Bert	BT			16.2							6.9 /1
Big Heavenly Twin	BT			9.6							7.6
Como	BT			7.0							7.2
Crescent	K							12.6	13.1	13.6	12.7
Dee	BT			9.5 /1							6.9 /1
Deep	BT			6.6							7.3
Deer	BT			8.2							6.3
Devils	Rb				9.5	10.6					11.8
Ebb	BT			6.4							
Echo	BT										7.8
Elizabeth	BT										7.4
Fourmile	BT	9.1	8.1		8.6	8.2	7.5	8.5	7.3	7.6	7.7
	K	10.2	9.9		8.5	8.7	9.5	8.6	6.6 /1	7.3 /1	
Harriet	BT			8.6							7.0
Isherwood	BT			7.4							7.4

/1 Indication only; insufficient sample obtained.

Table 44 (continued)

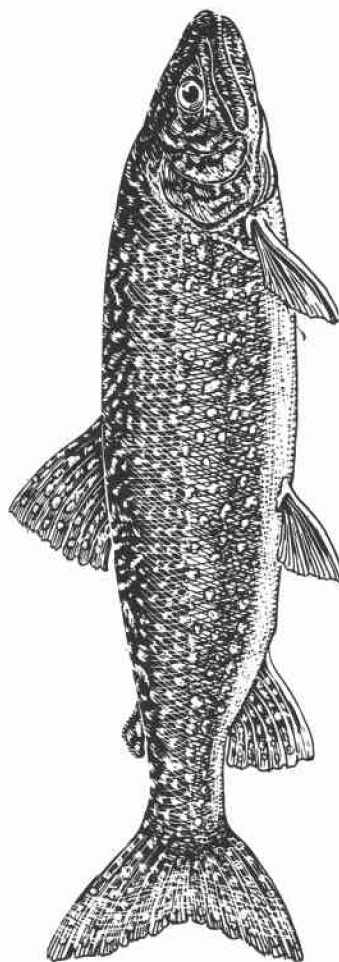
Lake	Species	Average Fork Lengths in Inches by Year									
		1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Island	BT			8.4							11.4
Lake of the Woods	BT		9.0	12.3	9.5	11.5	9.4	10.1	10.8	11.6	12.1
	K			11.6	10.6	9.3	9.1	9.4	9.0	9.7	8.4
	BrB					8.9	10.3				6.0
Little Heavenly Twin	BT			6.6							8.5
Margurite	BT			8.0							
Miller	Rb										13.2
	K										9.5
North Puck	BT			6.7							7.5
Notasha	BT			7.8							6.4
Odell	Wf	8.5	8.8	9.4	8.9	9.6	10.6	9.4		9.2	9.7
	K		17.1			12.7	12.7	12.5	12.1	9.3	11.1
	LT								18.6		
Red	BT			7.7							
Snow	BT									6.0	<u>1</u>
Sonya	BT									8.0	<u>1</u>
South Pass	BT			7.4						7.2	
South Puck	BT			7.7						7.7	<u>1</u>

1 Indication only; insufficient sample obtained.

Table 44 (continued)

Lake	Species	Average Fork Lengths in Inches by Year									
		1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Summit	BT	11.1		8.5		10.8	7.8	8.3	7.5	8.2	7.9
	LT				24.4	24.6			22.4	18.5	
Tanager	BT			7.6							6.6 <u>1</u>
Trapper	BT			10.4 <u>1</u>							7.7 <u>1</u>
Wizard	BT										7.5 <u>1</u>
Zeb	BT			5.8 <u>1</u>							7.0

1 Indication only; insufficient sample obtained.



OCHOCO DISTRICT

Richard G. Herrig

A total of 879 chinook was counted through a weir in Warm Springs River by personnel of the Warm Springs Reservation during the period April 11 to December 3. The count in 1966 was 1,053 salmon.

The enumeration of anadromous species at Pelton Dam is recorded in a publication by Portland General Electric Company.

Creel data for trout in the Ochoco District are included in Table 68.

Results of population studies of reservoirs are shown in Table 45.

Average lengths of maturing female trout for district waters are presented in Table 46.

Detailed reports of Ochoco, Prineville, Pelton, Round Butte, and Haystack Reservoirs are published in special reports.

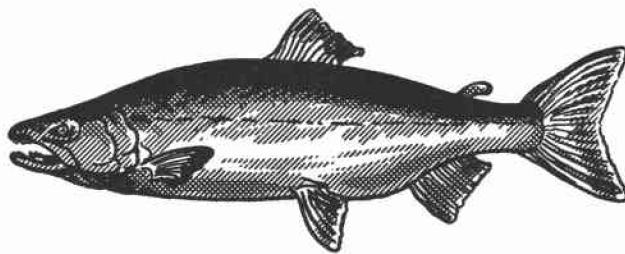


Table 45

Composition and Length Frequency of Catch by Gill Nets, Represented in One-Inch Size Groups,
Ochoco District, 1967

Water	Date	Number Nets Set	Species	Number Fish Taken	Fish per Net	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																				
							5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over					
Antelope Flat Reservoir	8/30/67	1	Rb	30	30.00	100.0						8	12	8	2												
Haystack Reservoir	3/14/67	4	Rb	49	12.25	14.5																					
			K	2	0.50	0.6																					
			Su	148	37.00	43.9	7	20	29	71	21																
			Ro	138	34.50	41.0																					
	8/29/67	1	K	4	4.00	2.4																					
			Su	74	74.00	45.1																					
			Ro	86	86.00	52.5	29	7	28	13	13	12	12	12	5												
Ochoco Reservoir	3/7/67	4	Rb	50	12.50	76.9																					
			Su	15	3.75	23.1																					
							21	4	4	4	4	4	7	2		3	1										
							14		1																		
	4/24/67	4	Rb	29	7.25	70.7																					
			Su	12	3.00	29.3																					
							9	5	2	8	1	3	1														
							10	2																			
	7/12/67	4	Rb	14	3.50	5.6																					
			Co	1	0.25	0.4																					
			Su	236	59.00	94.0																					
							4	2	1	4	2																
	11/8/67	4	Rb	82	20.50	50.0																					
			Su	82	20.50	50.0																					
							26	27	8	10	1	2	1	3		1											
							23	20	14	10	2	4	4	2	3												
Pelton Reservoir	3/22/67	5	Rb	19	3.80	9.7																					
			Br	1	0.20	0.5																					
			DV	1	0.20	0.5																					
			Wf	6	1.20	3.1																					
	9/12/67 (4 hours)	5	Su	114	22.80	58.2																					
			Sq	13	2.60	6.6																					
			Clm	42	8.40	21.4																					
							2	8	19	13																	
	8/1/67	5	Rb	17	3.40	5.3																					
			Wf	4	0.80	1.2																					
			Su	247	49.40	76.4																					
			Sq	38	7.60	11.8																					
	8/1/67	5	Clm	17	3.40	5.3																					
							2	3	6	23	2	10	4	3		5											
							1																				
	8/1/67	5	Rb	13	2.60	16.0																					
			SB	9	1.80	11.1																					
			LB	7	1.40	8.7																					
							1	1	2	3																	
	8/1/67	5	BrB	3	0.60	3.7																					
			Su	38	7.60	46.9																					
			Sq	11	2.20	13.6																					
							1																				
	8/1/67	5																									
	8/1/67	5																									
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	8/1/67	5																									
	8/1/67	5																									
	8/1/67	5																									

Table 45 (continued)

Water	Date	Number Nets Set	Species	Number Fish Taken	Fish per Net	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																		
							5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over			
Prineville Reservoir	11/21/67	5	Rb	120	24.00	64.2			1	8	34	60	13	4											
			BrB	18	3.60	9.6			3	7	4	1	2	1											
			Su	36	7.20	19.3		1	3	6	7		6	2			10	1							
			Sq	9	1.80	4.8					3		2	1	1	2									
			Clm	4	0.80	2.1		4																	
Round Butte Reservoir	3/29/67	5	Rb	62	12.40	25.8		5	6	3	1	2	14	17	11	2			1					5	
			DV	9	1.80	3.8			1	1															
			Wf	9	1.80	3.8		1				4	2	1											
			Co	2	0.40	0.8							2												
			Ch	1	0.20	0.4				1															
			Su	119	23.80	49.6		2	1	10	27	42	16	16	4		1								
			Sq	6	1.20	2.5				1		1		2	1	1									
			Clm	32	6.40	13.3		3	21	3	5														
			Rb	16	3.20	2.0							1	3	4	4	3	1							1
			Br	2	0.40	0.3								1											
			Wf	1	0.20	0.1																			
			Sq	42	8.40	5.4																			
	11/30/67	5	Clm	167	33.40	21.3																		2	
			Su	493	98.60	63.0																			
			/1	62	12.40	7.9																			
			Rb	6	1.20	3.0							1	2	1	2									
			K	1	0.20	0.5							1			2									
			DV	5	1.00	2.5			1																
			Ch	3	0.60	1.5																			
			Wf	7	1.40	3.5							2	5											
			Su	116	23.20	58.0			11	10	5	4	11	57	11	3	4								
			Sq	10	2.00	5.0					9				1										
			Clm	52	10.40	26.0		1	20	14	17														
Walton Lake	5/31/67	1	Rb	21	21.00	100.0					4	5	3	3		2	2	1					1		
	11/22/67	2	Rb	15	7.50	100.0		1		2	7	4			1										

/1 Unidentified rough fish.

Table 46

Average Length of Maturing Female Fish,
Ochoco District, 1967

Water	Species	Fork Lengths in Inches, by Year					
		1960	1961	1962	1963	1964	1965
Antelope Flat Reservoir	Rb						
							13.7
Haystack Reservoir	Rb	14.7		12.1		11.0	14.7
	K						12.7
							12.2
							13.4
Ochoco Reservoir	Rb	12.4		12.7	12.3	10.1	10.1
							10.7
Pelton Reservoir	Rb		9.7			14.8	10.2
	Br	10.6	11.5	12.9		13.1	11.7
	DV	12.8	13.8				12.9
	Wf	10.0	10.2	9.9	8.4	11.3	10.8
	K			12.8		13.4	10.6
							10.4
Prineville Reservoir	Rb				13.0	13.0	12.7
							11.7
Round Butte Reservoir	Rb					10.6	11.1
	Br					10.7	13.0
	DV					11.9	12.0
	Wf					11.2	16.5
							11.0
							12.0

JOHN DAY DISTRICT

James A. Hewkin

Creel data gathered on the John Day River in the 1966-67 season indicate above average success. The 437 anglers who were interviewed had caught 104 steelhead at the rate of 14.6 hours per fish. Comparative steelhead catch statistics are shown in Table 47.

Table 47

An Eleven-Year Comparison of Steelhead Catch Statistics,
John Day River, 1956 through 1967

Year	Total Anglers	Hours Fished	Total Fish	Hours per Fish	Fish per Angler
1956	309	831	95	8.75	0.31
1958	197	457	72	6.35	0.37
1959	373	1,499	78	19.22	0.21
1960	270	993	99	10.03	0.37
1961	200	654	29	22.55	0.15
1962	193	639	35	18.26	0.18
1963	263	991	42	23.60	0.16
1964	430	1,386	53	26.15	0.12
1965	278	946	79	11.97	0.28
1966	495	1,505	153	9.84	0.31
1967	437	1,523	104	14.64	0.24

Comparative steelhead spawning ground data for district waters for a 9-year period are shown in Table 48.

The spawning ground count for spring chinook was 10.2 redds per mile as compared with 12.2 redds per mile in 1966. A 9-year summary of chinook spawning ground data is presented in Table 49.

Composition and length frequency of the fish populations in some district lakes are shown in Table 50.

Creel data for the trout fishery are included in Table 68.

Table 48

Comparative Steelhead Spawning Ground Inventory
Over a Nine-Year Period, John Day District,
1959 through 1967

Year	Number Streams Surveyed	Miles Surveyed	Steelhead	Redds	Redds per Mile
1959	6	14.5	30	108	7.4
1960	10	22.0	60	194	8.8
1961	8	24.5	56	166	6.8
1962	10	26.5	56	184	6.9
1963	11	30.5	47	216	7.1
1964	13	43.5	51	266	6.1
1965	19	45.0	68	244	7.6
1966	23	69.0	141	1,103	16.0
1967	25	78.0	61	905	11.6



Table 49

A Nine-Year Summary of Chinook Salmon Spawning Density, John Day District

Stream	Average Number of Redds per Mile Surveyed (by Year)									
	1959	1960	1961	1962	1963	1964	1965	1966	1967	
Bull Run Creek				2.0	7.0	10.0	7.5	0.3	6.0	
Clear Creek	4.3	16.3	3.3	49.7	29.2	49.7	16.7	43.5	38.5	
Granite Creek	6.0	10.0	5.3	44.2	26.4	34.8	24.4	31.0	19.4	
John Day River	0.3	0.7	3.0	12.2	0.8	1.3	5.8	9.3	7.1	
Middle Fork John Day River	0.0	3.2	1.1	2.8	0.4	3.6	3.7	6.5	1.7	
North Fork John Day River						7.8	8.1	10.3	5.5	
AVERAGES	2.7	7.6	3.2	22.2	12.8	17.9	11.0	16.8	13.0	



Table 50

Composition and Length Frequency of Catch by Gill Net, Represented in One-Inch Size Groups,
for Some John Day District Lakes, 1967

Water	Number Nets Set	Species	Number Fish Taken	Percent of Total	Number of Fish by One-Inch Size Groups (Fork Length)																		
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19 & Over
Bull Prairie Lake	2	BT Rb	43 1	97.8 2.2						1		1	9	20	4			6	2			1	
Magone Lake	3 (spring)	BT	28	57.2						1	6	1		7	10	1	2						
		Rb	20	40.8									10	9	1								
		K	1	2.0									1										
	2 (fall)	BT	14	100.0						6			4	3	1								
Olive Lake	3	BT	118	61.1						30	62	9	7	7	5	3	2						
		Rb	5	2.6									1	1			1						
		K	70	36.3						1	20	48	1						1			1	



ASTORIA DISTRICT

Warren M. Knispel

Creel data for the winter steelhead fishery for North Coast streams are included in Table 67.

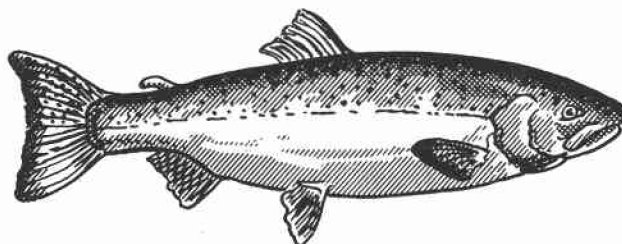
Large numbers of steelhead smolt released by the Fish Commission of Oregon in Big Creek and Klaskanine River in previous years resulted in an excellent fishery. Fifty to seventy thousand smolts were released into these streams.

Yearling steelhead released by the Oregon State Game Commission gave much better returns in the Necanicum River than those in the Nehalem River.

The offshore salmon fishery enumeration in the lower Columbia was confined to Oregon ports of the lower river. The joint Oregon-Washington program in determining the lower Columbia fishery was discontinued in 1967 at the request of Washington.

Spawning ground counts for coho and fall chinook are included in Tables 69 and 70, respectively.

Creel data for trout anglers in the district are included in Table 68.



TILLAMOOK DISTRICT

W. H. Christianson

Results of the offshore salmon fishery for Cape Kiwanda and Garibaldi are included in Table 66. It was apparent that the trend of sport salmon fishing dories at Cape Kiwanda converting to commercial salmon gear was continued in 1967. Twenty-nine percent of the dories fishing out of Cape Kiwanda were commercial in 1966 compared with 13 percent in 1965.

Records from 2,034 anglers fishing Tillamook Bay in the fall reveal that they had caught 233 coho and 101 fall chinook. Spring chinook resting hole counts for the Wilson, Trask, and Nestucca Rivers for a period of years are shown in Table 51. It would appear that the trend of spring chinook populations is generally downward.

Coho salmon spawning ground counts are shown in Table 69.

Creel data on the winter steelhead fishery for district streams are included in Table 67.

A previous release of about 16,000 summer-run steelhead in the Nestucca River resulted in a fair fishery in 1967. The catch rate was 8.7 hours per steelhead.

Trout anglers in the district had an average success rate of just over one-half fish per hour.

Results of test-netting in district lakes are shown in Table 52.

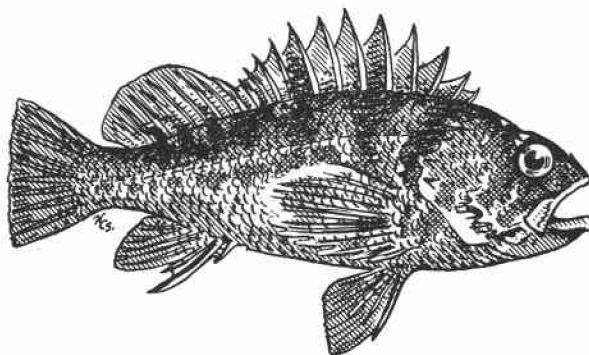


Table 51

Spring Chinook Resting Pool Trend Count Comparisons
for Three Tillamook District Rivers, 1967

Year	Trask River				Wilson River				Nestucca River			
	Pools		Pools		Pools		Pools		Pools		Pools	
	Censused	ChS	StS	Ct	Censused	ChS	StS	Ct	Censused	ChS	StS	Ct
1962 <u>1</u>	20	428	0	0	17	152	0	0	<u>13</u>			
1964 <u>2</u>	9	164	0	55	4	110	1	19	9	59	4	9
1965 <u>2</u>	15	132	0	37	10	11	1	120	12	62	7	73
1966 <u>2</u>	12	40	17	44	8	21	6	126	8	39	16	3
1967 <u>2</u>	19	86	0	52	10	8	2	73	20	15	82	106

1 Includes spring chinook in Oregon Fish Commission Trask hatchery pool. Oregon Fish Commission counts.

2 Does not include spring chinook or sea-run cutthroat in Oregon Fish Commission Trask hatchery pool.

3 No counts conducted.

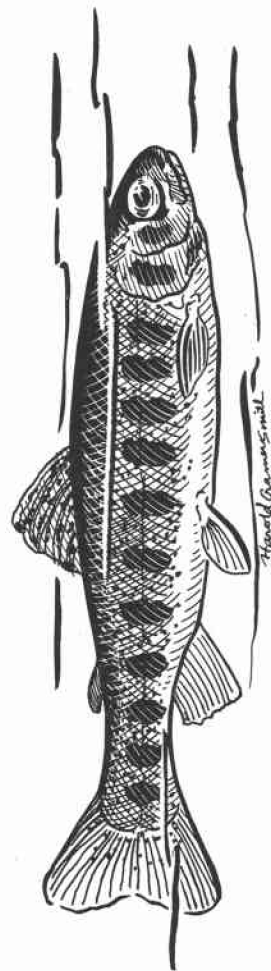
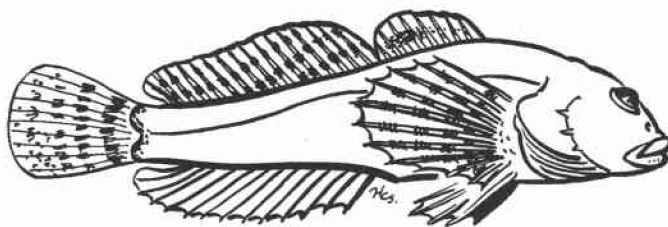


Table 52

Lake Gill-Net Set Data, Tillamook District,
1967

Lake	Number Nets Set	Species	Number Fish by Two-Inch Size Groups (Fork Length)				Rainbow Brood	Total Fish
			6-8	8-10	10-12	12-14		
Hebo	1	Rb	1					1
		Ct			4	2		6
Lytle	2	Rb					9	9
		Ct				1	1	2
		Cot	2					2
		Crayfish						3
Smith	2	Rb				1		1
		LB	1	1				2
		BrB		1				1
		Cot	2					2
South	1	Co	130	5				135
Spring	2	Rb			1	3		4
		Ct		1				1
		Pk	1	1				2



LINCOLN DISTRICT

Rollie F. Rousseau

In a sample of 178 steelhead observed in the winter fishery on the Siletz River, 38 percent were hatchery winter fish, 16 percent hatchery summer-run fish, and 46 percent wild fish. Jack steelhead were common in the 1966-67 season. Additional creel data on the Siletz River steelhead fishery are included in the general steelhead creel table (Table 67).

The Alsea River winter steelhead fishery for the years 1960 through 1967 is shown in Table 53. Eighty-three percent of the 4,377 steelhead returning to the Alsea Hatchery trap in the winter of 1966-67 were of hatchery origin. Creel data for the Alsea and other Lincoln District streams are included in the general steelhead table (Table 67).

Table 53

Alsea River Estimated Steelhead Catch,
1960-61 through 1966-67

Period	Number Anglers	Total Steelhead	Percent Marked	Hours per Steelhead
1960-61	4,171	617	48	26
1961-62	8,156	2,037	62	18
1962-63	10,394	2,860	71	16
1963-64	18,413	6,563	75	13
1964-65	22,074	4,596	78	20
1965-66	26,717	7,609	86	19
1966-67	26,086	5,039	71	23

The summer steelhead catch and size of the run on the Siletz were below average. Low stream flows and fewer fish in the run apparently were responsible for the reduction in angling intensity and catch. Of 57 summer steelhead examined, 52 were marked hatchery returns. A total of 77 percent of the 354 steelhead trapped in the Siletz River ladder was marked hatchery fish. Roaring River Hatchery received 135 of the adult steelhead trapped in the Siletz ladder.

Standard underwater summer steelhead surveys for the Siletz River for the years 1960 through 1967 are shown in Table 54. As in 1966, 93 percent of the adult steelhead examined in the resting holes were marked.

Catch data of the Newport and Depoe Bay offshore fisheries are presented in Table 66, the offshore salmon table.

On several days of the 1967 season there were over 1,000 sport craft in the salmon fishery. The estimated total anglers and total catch in both Yaquina and Depoe Bays exceeded those recorded for any previous season. Records of the Yaquina fishery were begun in 1962, and in Depoe Bay in 1963.

Table 54

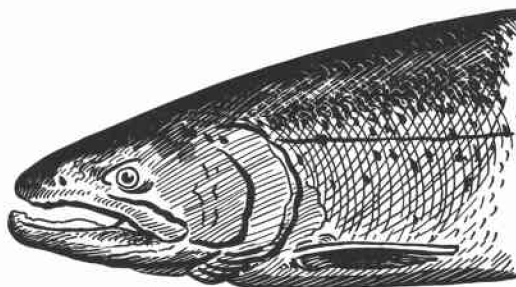
Standard Underwater Survey Siletz River Summer Steelhead,
1960 through 1967

Year	Number Summer Steelhead Observed			Percent Hatchery Steelhead	Number Chinook
	Wild	Hatchery	Total		
1960	297	146	443	33	24
1961	103	412	515	80	<u>1</u>
1962	148	136	284	48	52
1963	199	274	473	58	76
1964	71	193	264	73	23
1965	99	420	519	81	14
1966	61	806	867	93	4
1967	44	590	634	93	12

1 Not recorded.

Coho salmon spawning ground counts for the district are presented in Table 69. Based on trap counts, it was estimated that about 50,000 downstream migrant coho passed out of Valsetz Lake in the spring of 1967.

Creel data for trout and warm-water game fish for the district are included in the general creel table (Table 68).



COOS-COQUILLE DISTRICT

Edward H. Schwartz

Spawning ground counts for chinook salmon in the Coos and Coquille systems are presented in Table 70. Counts of adult coho in these streams are shown in Table 69.

A comparison of the chinook spawning ground counts for the Coquille and Coos River systems for the years 1958 through 1967 are shown in Table 55. Coho counts for the same years are presented in Table 56.

Results of the offshore salmon fishery at Coos Bay are included in Table 66. There was a substantial increase in pressure over that recorded in 1966. The catch rate also increased from 0.73 to 0.91 fish per angler.

A total of 494 anglers was interviewed on the lower Coquille River salmon fishery. Their catch consisted of 24 chinook, 37 coho, and 35 jacks. The catch rate was 16.7 hours per fish. Historical data on the lower Coquille River fishery are shown in Table 57.

Creel records for the winter steelhead fishery in the district are included in Table 67.

In a creel sample of 235 anglers on district lakes, the catch consisted of 289 cutthroat and 88 rainbow. The catch rate was 0.54 fish per hour. The average catch rate for trout in streams in the district was 0.79 fish per hour.

Table 55

Comparison of Chinook Salmon Counts, by Year,
Coos-Coquille River Systems,
1958 through 1967

Year	Fish per Mile	
	Coos River System	Coquille River System
1958		22
1959		11
1960		4
1961	1.06	31
1962	2.00	50
1963	1.12	51
1964	0.13	28
1965	0.75	49
1966	2.00	41
1967	1.25	26
AVERAGES	1.18	31

Table 56

Comparison of Coho Salmon Counts, by Year,
Coos-Coquille River Systems,
1958 through 1967

Year	Fish per Mile	
	Coos River System	Coquille River System
1958	10	15
1959	24	54
1960	27	17
1961	62	42
1962	43	51
1963	34	20
1964	54	64
1965	40	53
1966	35	28
1967	39	28
AVERAGES	37	37

Table 57

Comparison of Lower Coquille River Salmon Catch Success,
1955 through 1967

Year	Number Anglers	Number Salmon	Fish per Angler	Hours per Fish
1955	975	222	0.23	20.0
1956	790	232	0.29	14.3
1957	1,732	564	0.33	7.7
1958	2,455	730	0.30	10.0
1959	993	278	0.28	
1960	933	271	0.29	14.3
1961	849	241	0.28	16.7
1962	673	243	0.36	10.0
1963	698	270	0.39	9.4
1964	541	236	0.44	9.1
1965	568	198	0.35	11.5
1966	596	175	0.29	12.9
1967	494	116	0.23	16.7
TOTALS	12,297	3,776		
AVERAGE			0.31	

SIUSLAW DISTRICT

James M. Hutchison

Creel data for the Siuslaw offshore salmon fishery are presented in Table 66. The total catch was about 27 percent above the 7-year average. More pink salmon were caught than in any prior summer of record.

The Siuslaw estuary fishery was calculated to have provided 9,669 boat-days of angling resulting in a catch of 7,714 cutthroat, 228 chinook, 2,056 coho, and 2,463 jacks for a catch rate of 1.34 fish per boat.

Records of the Siuslaw River winter steelhead fishery are included in the general steelhead creel table (Table 67). A slight decrease in angling effort from the previous winter was noted.

Coho spawning ground counts for the district are included in the general coho spawning table (Table 69).

A record of 488 anglers fishing trout in the district on opening weekend shows that the average catch rate was 0.9 fish per hour. This includes both trout and warm-water species. Catch data for five district lakes are shown in Table 58.

Results of fish population sampling with gill nets on a number of lakes in the district are shown in Table 59.

Information concerning the winter largemouth bass fishery at Siltcoos and Tahkenitch Lakes was gathered by resorts on the respective lakes. Creel data for the two lakes for the years 1966 and 1967 are shown in Table 60.



Table 58

Miscellaneous Creel Census Data from Five Lakes, Siuslaw District,
Spring and Summer 1967 /1

Lake	Anglers Interviewed	Number Fish Caught by Species										Fish per Angler	Fish per Hour
		Bg	BrB	C	Co	Ct	LB	Rb	Wm	YP			
Carter	57					42		58			1.8	0.8	
Elbow	43	16				8	8	21			1.2	1.1	
Lost	17					16		19			2.1	1.1	
Siltcoos	280	16	485	43	4	19	2	7		1,074	5.9	2.0	
Tahkenitch	412	1,645	9	4	2	24	140	154	3	177	5.2	1.5	

/1 Excludes opening weekend of trout season and bass anglers.



Table 59

Summary of 1967 Gill Net Collections, Simulaw District

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																				20 & Over	
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Bear	8/15	2	Cot ReS	2 2	50.0 50.0	4.9 3.6				1 2																		
Mercer	9/15	3	Bg K LB Rb WC YP	3 33 1 3 1 8	6.1 67.3 2.1 6.1 2.1 16.3	4.3 13.8 11.2 11.6 9.9 9.8				2	1									1		8	25					
North Jetty	3/20	2	Cot Ct Sq	4 1 1	66.6 16.7 16.7	7.4 11.6 8.5					1	2								1								
Saltoos	8/29	10	BC Bg BrB Co Cot CSa Ct LB Rb YP	56 32 183 1 1 3 5 8 8 79	14.9 8.5 48.7 0.3 0.3 0.8 1.3 2.1 2.1 21.0	9.4 6.2 10.6 6.4 5.2 14.3 11.5 10.9 11.8 7.1				3	7	6	10	2	21	62	73	19	5	1								
											1																	
								</																				

Table 59 (continued)

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																					
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over		
Threemile	8/21	5	Cot	15	23.1	5.5					6	4	4	1														
			Ct	7	10.8	10.1										3	2	1									1	
			Rss	5	7.7	5.6					3	2																
			Yp	38	58.4	7.9							16	5	8	2	2	2	3									
Woahink	9/21	6	CSu	1	0.7	16.9																					1	
			K	116	77.9	7.2																						
			LB	6	4.0	10.4						1	5	96	1	2	10	2										
			Rb	10	6.7	9.9												1	1	2								
			Sq	14	9.4	12.6									1	3	1				2	1	3	3				
			Yp	2	1.3	9.5												1	1									



Table 60

Lengths of Largemouth Bass Taken in Siltcoos and Tahkenitch Lakes,
Winter and Spring Sport Fishery, 1966 and 1967

Lake	Year	Bass Anglers Interviewed	Number Bass Kept, by Size Groups						Bass per Angler $\angle 1$
			Under 12 Inches		12 to 17 Inches		Over 17 Inches		
			Number	Percent	Number	Percent	Number	Percent	
Siltcoos	1966	105	27	14	113	57	58	29	1.9
	1967	88	10	9	77	70	23	21	1.3
Tahkenitch	1966	164	47	16	218	73	33	11	1.8
	1967	318	39	5	578	81	98	14	2.3

$\angle 1$ All anglers were interviewed in 1967, but only data from successful anglers were recorded in 1966.



UMATILLA DISTRICT

David N. Heckerorth

Creel data for the Columbia River fishery below McNary Dam for the period 1960 through 1967 are presented in Tables 61 and 62. Data for the winter fishery are in Table 61, while the summer fishery is in Table 62.

Table 63 includes steelhead creel data for the Umatilla River and Walla Walla River for the period 1959 through 1967.

A total of 1,788 steelhead was enumerated in the electronic fish counter at Threemile Dam on the Umatilla River. The trap was operated November through May, but the heaviest migration occurred from January through May.

Table 61

A Six-Year Comparison of the Salmon and Steelhead Fishery
on the Columbia River Below McNary Dam,
for the Period November 1 to May 31

Method	Year	Catch			Total Anglers	Total Hours	Fish per Angler	Hours per Fish
		St	Ch	Total				
Boat	1961-62	52	0	52	157	772	0.33	14.9
	1962-63	81	0	81	186	811	0.44	10.0
	1963-64	103	28	131	517	2,152	0.25	16.4
	1964-65	21	1	22	34	136	0.65	6.2
	1965-66	155	0	155	345	1,374	0.45	8.9
	1966-67	49	1	50	149	608	0.34	12.2
Bank	1961-62	20	0	20	188	673	0.11	33.7
	1962-63	30	0	30	435	1,644	0.07	54.8
	1963-64	8	3	11	305	1,145	0.04	104.1
	1964-65	20	2	22	609	2,460	0.04	111.8
	1965-66	37	24	61	998	3,732	0.06	61.2
	1966-67	78	64	142	1,581	6,349	0.09	44.7

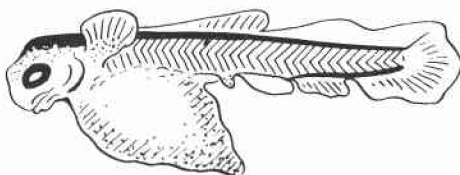


Table 62

A Comparison of Salmon and Steelhead Catch Data
for the Columbia River Below McNary Dam,
for the Period June 1 to October 31

Method	Year	Catch			Total Anglers	Total Hours	Fish per Angler	Hours per Fish
		St	Ch	Total				
Boat	1960	70	4	74	183	703	0.40	9.5
	1961	42	4	46	263	1,349	0.17	29.3
	1962	98	0	98	378	1,718	0.26	17.5
	1963	64	3	67	336	1,295	0.20	19.3
	1964	29	7	36	243	1,281	0.15	35.6
	1965	28	1	29	193	524	0.15	18.1
	1966	28	1	29	192	724	0.15	25.0
	1967	1	2	3	30	150	0.10	50.0
Bank	1960	43	4	47	257	774	0.18	16.5
	1961	6	0	6	93	452	0.06	75.3
	1962	25	3	28	272	986	0.10	35.2
	1963	7	0	7	132	475	0.05	67.9
	1964	72	12	84	607	2,636	0.14	31.4
	1965	108	7	115	756	2,992	0.15	26.0
	1966	103	5	108	685	2,703	0.16	25.0
	1967	13	4	17	326	1,170	0.05	68.8

Table 63

An Eight-Year Comparison of Steelhead Angling Success
on the Umatilla and Walla Walla Rivers,
Winter Season, December 1 to March 31

River	Year	Steelhead Catch	Total Anglers	Total Hours	Fish per Angler	Hours per Fish
Umatilla	1959-60	70	266	800	0.26	11.4
	1960-61	49	211	512	0.23	10.5
	1961-62	21	199	616	0.11	29.3
	1962-63	31	276	863	0.11	27.8
	1963-64	41	154	392	0.27	9.6
	1964-65	10	56	171	0.18	17.1
	1965-66	12	91	216	0.13	18.0
	1966-67	86	245	736	0.35	8.6
Walla Walla	1959-60	2	51	104	0.04	52.0
	1960-61	16	68	235	0.24	14.7
	1961-62	0	12	40	0.00	
	1962-63	8	42	114	0.19	14.3
	1963-64	3	39	59	0.08	19.7
	1964-65	4	13	59	0.31	14.8
	1965-66	2	18	40	0.11	20.0
	1966-67	0	0			

WARM-WATER GAME FISH

Ralph A. Grenfell

Brood largemouth bass were held in a cold-water raceway at Saint Paul and released in brood ponds when it was reasonably certain that water temperatures would not drop below critical levels. Although the water temperatures remained above the critical level in the brood ponds, the largemouth did not spawn. We assume that the brood fish had been held too long in the cold-water raceway as they did not make redds after being released. Black crappie, bluegill, and smallmouth bass spawned, but channel catfish did not reproduce.

About sixteen species of game, rough, and forage fish were taken in a population sample of the Willamette River. Chiselmouth, coarsescale sucker, and squawfish were the most numerous coarse fish present. The white crappie was the dominant game fish.

Channel catfish were identified as being present in the Pudding, Long Tom, and Yamhill Rivers, all tributaries of the Willamette River.

Karmex (80 percent active Diuron) was used to control vegetation in the Saint Paul Ponds. A single application at the rate of one-third part per million was effective in controlling vegetation for the entire summer.

Stocking records of warm-water game fish are shown in Table 89.

A fish population sample was obtained with gill nets in Siltcoos and Tahkenitch Lakes. Sampling data are shown in Table 64.

Results of a winter and spring bass fishery in the above lakes are presented in Table 65.

Warm-water game fish were taken at an average rate of about 2.0 fish per hour in Siltcoos Lake and about 1.5 fish per hour in Tahkenitch.

Crappie and bullhead catfish were the important species taken in the Sauvie Island warm-water fishery. The catch rate was just over one fish per hour.

The catch of warm-water game fish in the Snake River was 97.0 percent channel catfish, 2.0 percent black bullhead, and 1.0 percent smallmouth bass. The catch rate was 0.69 fish per hour.

A record of 722 anglers fishing Owyhee Reservoir shows that they caught 128 largemouth bass, 5,488 black crappie, 10 yellow perch, and 49 black bullhead at an average rate of just over 2 fish per hour. Black crappie, 6 to 9 inches in length, predominated in the gill- and trap-net catches, as well as in the sport fishery.

Table 64

Summary of 1967 Gill-Net Collections

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																				
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over	
Bear	8/15	2	Cot	2	50.0	4.9				1	1																
			RaS	2	50.0	3.6			2																		
Mercer	9/15	3	Bg	3	6.1	4.3			2	1																	
			K	33	67.3	13.8														8	25						
			LB	1	2.1	11.2													1								
			Rb	3	6.1	11.6													1								
			WC	1	2.1	9.9																					
			YP	8	16.3	9.8													4	3					1		
North Jetty	3/20	2	Cot	4	66.6	7.4							1	2													
			Ct	1	16.7	11.6														1							
			Sq	1	16.7	8.5																					
Siltcoos	8/29	10	BC	56	14.9	9.4																					
			Bg	32	8.5	6.2																					
			BrB	183	48.7	10.6																					
			Co	1	0.3	6.4																					
			Cot	1	0.3	5.2																					
			CSu	3	0.8	14.3																					
			Ct	5	1.3	11.5																					
			LB	8	2.1	10.9																					
			Rb	8	2.1	11.8																					
			YP	79	21.0	7.1																					
Sutton	9/15	5	Bg	7	9.7	4.0																					
			BrB	3	4.2	10.3																					
			K	11	15.3	14.1																					
			LB	4	5.6	6.7																					
			Rb	8	11.1	12.2																					
			YP	39	54.1	7.9																					
Tahkenitch	8/28	10	Bg	147	83.5	5.2																					
			BrB	5	2.9	11.6																					
			Co	2	1.1	7.9																					
			Ct	1	0.6	10.1																					
			LB	7	4.0	7.6																					
			WC	6	3.4	8.6																					
			Wm	6	3.4	5.2																					
			YP	2	1.1	8.1																					

Table 64 (continued)

Lake	Date	Number Nets Set	Species	Number Fish Taken	Percent of Total	Average Size (Inches)	Number of Fish by One-Inch Size Groups (Fork Length)																							
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 & Over				
Threemile	8/21	5	Cot	15	23.1	5.5					6	4	4	1																
			Ct	7	10.8	10.1																								1
			RsS	5	7.7	5.6																								
			YP	38	58.4	7.9																								
Woahink	9/21	6	CSu	1	0.7	16.9																								1
			K	116	77.9	7.2																								
			LB	6	4.0	10.4																								
			RB	10	6.7	9.9																								
			Sq	14	9.4	12.6																								
			YP	2	1.3	9.5																								



Table 65

Total Lengths of Largemouth Bass from Siltcoos and Tahkenitch Lakes
Winter and Spring Sport Fisheries,
1966 and 1967

Lake	Year	Bass Anglers Interviewed	Number Bass Kept, by Size Groups						Bass per Angler $\frac{1}{1}$
			Under 12 Inches		12 to 17 Inches		Over 17 Inches		
			Number	Percent	Number	Percent	Number	Percent	
Siltcoos	1966	105	27	14	113	57	58	29	1.9
	1967	88	10	9	77	70	23	21	1.3
Tahkenitch	1966	164	47	16	218	73	33	11	1.8
	1967	318	39	5	578	81	98	14	2.2

$\frac{1}{1}$ Only successful anglers were interviewed in 1966; both successful and unsuccessful anglers were interviewed in 1967.

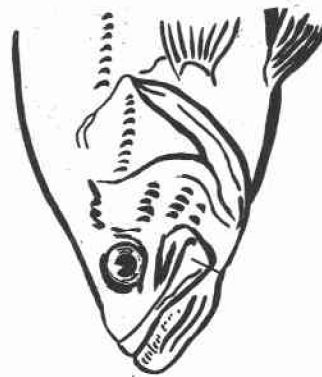


Table 66

Summary of Calculated Oregon Offshore Salmon Catch, 1967

Fishery	Angler Trips	Number Salmon Taken			Salmon per Angler Trip
		Coho	Chinook	Total	
Brookings	9,016	5,371	776	6,147	0.68
Cape Kiwanda	17,770	21,295	702	21,997	1.24
Columbia (mouth) <u>/1</u>	56,045	82,669	23,422	106,091	1.89
Coos Bay	37,562	31,757	2,486	34,243	0.91
Depoe Bay	47,539	60,318	720	61,038	1.28
Garibaldi	13,605	10,414	221	10,635	0.78
Gold Beach	15,909	4,028	2,763	6,791	0.43
Siuslaw Bay	14,260	12,410	594	13,004	0.91
Winchester Bay	43,623	44,256	4,794	49,050	1.12
Yaquina Bay	80,876	61,073	6,095	67,168	0.83
TOTALS	336,205	333,591	42,573	376,164	
AVERAGE					1.12

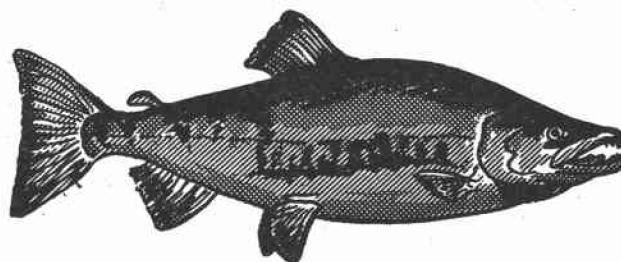
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Table 67

Steelhead Catch Data, 1966-67

Stream	Number Anglers	Hours Fished	Total Steelhead	Hours per Fish
Abiqua Creek	20	42	1	42.0
Applegate River	191	161	27	6.0
Big Creek	336	560	107	5.2
Chetco River	42	122	14	8.7
Coos River system	283	1,108	57	19.4
Coquille River system	213	885	62	14.3
Deschutes River, lower	2,394	8,391	471	17.8
Drift Creek (Siletz)	21	78	5	15.6
Elk River	34	75	9	8.3
Grande Ronde River	151	382	33	11.6
Hood River	333	661	58	11.4
Illinois River	143	384	12	32.0
Imnaha River	56	202	23	8.8
John Day River system	437	1,523	104	14.6
Necanicum River	184	771	91	8.5
Nehalem River	369	1,442	101	14.3
Nehalem River, North Fork	51	176	20	8.8
Nestucca River	1,019	5,056	369	13.7
Pistol River	36	82	16	5.1
Rogue River, lower	618	2,671	219	12.2
Rogue River, middle	1,354	3,639	336	10.8
Rogue River, upper system	1,688	4,184	375	11.2
Salmon River	138	383	29	13.2
Sandy River	450	1,220	78	15.6
Santiam River system	95	155	11	14.1
Siletz River	711	2,763	178	15.5
Siuslaw River system	1,904	6,601	263	25.1
Sixes River	30	56	9	6.2
Snake River	80	499	49	10.2
Trask River	618	1,695	159	10.7
Umpqua River system	643	2,050	51	40.2
Wallowa River	46	128	9	14.2
Wenaha River	18	41	14	2.9
Yachats River	26	60	4	15.0
TOTALS	14,732	48,246	3,364	
AVERAGES				14.3

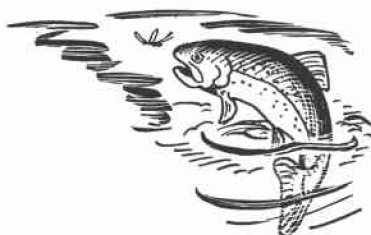


Table 68

Statewide Creel Census Summary for Streams, Lakes, and Reservoirs, 1967

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over					
STREAMS															
Abiqua Creek	2	Rb	30	90	39	8					167				
		Ct	2		1					3					
		Wf				1				<u>1</u>	119	281	1.4	0.61	
Ana River	13	Rb		32	16	7				55					
		Co	3							<u>3</u>	31	89	1.9	0.65	
Big Fall Creek	2	Rb	27	76	53					156					
		Ct				1				1					
		Chs	7							<u>7</u>	113	187	1.5	0.88	
Blitzen River	12	Rb	76	82	89	31	8	5	1	292	72	206	4.1	1.42	
Brice Creek	2	Rb	17	77	52	9				155					
		Ct	22	7	1					<u>30</u>	86	229	2.2	0.81	
Calapoopia River	2	Rb	24	143	51					218					
		Ct	18	8	1					27					
		St							19	19					
		Chs							<u>3</u>	255	685	1.0	0.39		
Camas Creek	13	Rb	23	37	62	1				123	58	96	2.1	1.28	
Chewaucan River	13	Rb	21	188	64	1	1			275					
		BT		20						<u>20</u>	98	239	3.0	1.23	
Clackamas River	3	Rb	11	75	77	1			1	165					
		St								19					
		Co							1	<u>1</u>	202	770	0.9	0.24	

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over					
STREAMS (continued)															
Coquille River, South Fork	17	Ct		53	189	11					253	67	341	3.8	0.74
Crabtree Creek	2	Rb		36	2						49				
		Ct	11								6				
		St	6						1		56	68	129	0.8	0.43
Crooked River, lower	5	Rb	78	285	213	148	65	30	10	6	835	452	1,727	1.8	0.48
Crow Creek	8	Rb	327								327	55	95	5.9	3.44
Dairy Creek	13	Rb	27	164	26						217				
		Br	38	7	1						46	104	259	2.5	1.02
Deep Creek	13	Rb	207	129	36	1					373	81	200	4.6	1.87
Deschutes River, Sec. 1 (Maupin area)	5	Rb	544	3,182	1,555	326	92	19	7		5,725				
		Sts								5					
		Br		1	1					1		5			
		Ch	6				1	1	1	1		2			
		Co	1	1	1							10			
		Wf				3	3		1			3			
												7	2,971	10,445	1.9
Deschutes River, Sec. 1 (Webb's Road)	5	Rb	39	71	54	33	15	2			214				
		Co			1	1					2				
		Wf		1	2	3					6	251	808	0.9	0.27
Deschutes River, Sec. 2 (Trout Creek-S. Junction)	5	Rb	48	248	310	124	38	4	2		774				
		St								1					
		DV		3	1	3		2			1				
		Ch	2								9				
		Wf			2	3					2				
		Co			2						5				
											2	174	846	4.6	0.94

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over					
STREAMS (continued)															
Deschutes River, Sec. 2 (Warm Springs Mecca)	5	Rb	53	672	323	94	15	4	2		1,163				
		St								1	1				
		Br					1				1				
		DV			1		1				3				
		Ch	12	2							14				
		Wf			1	7	3				11				
		Co	4		1	4	1			10					
										1,203	604	1,764	2.0	0.68	
Deschutes River, Sec. 3	5	Rb	10	92	36	15	4	1		1	159				
		BT					1	1			2				
		Br		2	10	8	5	2	1		28				
		Wf		8	12	3					23				
										212	120	331	1.8	0.64	
Deschutes River, Sec. 4	5	Rb	14	328	502	29	9	3	1		886				
		BT	2	2							4				
		K		5	1						6				
		Br	21	65	84	35	25	17	7	4	258				
		Wf		5	31	7	1				44				
		BrB				1					1				
											1,199	783	2,071	1.5	0.58
Deschutes River, Sec. 5	5	Rb	2	17	1					20					
		BT	4							4					
		Wf			4	6	4	5	2		21	36	57	1.3	0.79
										45					
Emigrant Creek	12	Rb	104	66	12	14					196	54	114	3.6	1.72
Fall River	5	Rb		30	19						49				
		BT	20	17	1						38				
		Br	1	4	1	1					7	78	151	1.2	0.62
											94				
Fish Creek	12	Rb		95	42						137				
		BT	40	53							93	26	159	8.8	1.45
										230					
Gales Creek	2	Rb	1	8		1					10				
		Ct		1		2					3	41	115	0.3	0.11

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
STREAMS (continued)																	
Grande Ronde River	8	Rb Wf	6	21 2	41 1	2	1						70 $\frac{4}{74}$	48	101	1.5	0.73
Hills Creek	2	Rb Ct	4 9	25 2	13								$\frac{42}{11}$ $\frac{53}{53}$	26	56	2.0	0.95
Hood River	4	Rb	16	12	2								30	42	62	0.7	0.48
Hood River, East Fork	4	Rb Ct	20 5	218 2	50								288 $\frac{7}{295}$	146	322	2.0	0.92
Imnaha River	8	Rb DV Wf	24 1	136 5	16 2	1 1	1 3						178 $\frac{9}{190}$	112	274	1.7	0.69
Klamath River	14	Rb	124	616	881	227	50	16	3				1,917	789	2,610	2.4	0.73
Klamath River, Sec. 1	14	Rb	1	16	15	5	7	6					50	49	87	1.0	0.57
Klamath River, Sec. 2	14	Rb	3	26	10	10	3						52	45	93	1.2	0.56
Laying Creek	2	Rb Ct	12 16	44 4	21								77 $\frac{20}{97}$	62	146	1.6	0.66
Little Deschutes River	5	Rb Br BrB	10 4 7	94 4	2		1						106 $\frac{9}{122}$	50	112	2.4	1.09
Little Malheur River	10	Rb DV	45	89	33	6	1						173 $\frac{1}{174}$	35	109	5.0	1.60

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
STREAMS (continued)																	
Little North Fork Santiam	2	Rb	47	135	98	3							283	122	250	2.3	1.13
Long Tom River	2	Rb		1	21	14							1				
		Ct	1	28	3	5							64				
		LB	5	5			1						20				
		WC	93	59	18								170				
		Bg	11	1									12				
		BrB	82	2									84				
		CC								1			1				
		Cp		1	2							4					
												356	232	394	1.5	0.90	
Lost Creek	2	Rb	1	2									3				
		Ct	36	1									37				
													40	28	59	1.4	0.68
Lost River	14	Pk	7										7				
		LB				1							1				
		WC	15	19	3	1							38				
		Bg	6										6				
		YP	27	40	7	1							75				
		BrB	2	3	2								7				
													134	95	128	1.4	1.05
Lostine River	8	Rb	4	85	25								114				
		DV		1									1				
													115	61	133	1.9	0.86
Malheur River, Sec. A	10	Rb	178	525	476	242	116	12	1				1,550				
		YP	2										2				
													1,552	379	1,079	4.1	1.44
Malheur River, Middle Fork	10	Rb	4	91	33	8	1						137				
		YP	1										1				
													138	29	92	4.8	1.50
Malheur River, North Fork	10	Rb	170	323	133	62	23		2				713				
		Wf			4								4				
													717	140	523	5.1	1.37

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over					
STREAMS (continued)															
Malheur River, South Fork	10	Rb	40	84	127	123	35	5	3		417	122	286	3.4	1.46
Marion Creek	2	Rb Ct Br	11 13 5	27 4	3						41 17 5 63	30	68	2.1	0.93
Marks Creek	5	Rb	66	31	4						101	36	130	2.8	0.78
McDowell Creek	2	Rb Ct St	1 2	6 2						1	7 2 1 10	28	40	0.4	0.25
McKenzie River	2	Rb Ct Br DV Chs Wf	132 19 1 1	761 2	499 1	52		2	1		1,444 22 1 3 2 2 1,474	851	2,563	1.7	0.58
McKenzie River, South Fork	2	Rb Ct	15 38	75 17	33	2					125 55 180	140	430	1.3	0.42
Metolius River	5	Rb Br DV Wf	4 1 1	39 1 1	32 1	1 2					76 1 2 81	76	177	1.1	0.46
Mill Creek (Yamhill)	2	Rb	34	27							61	36	53	1.7	1.15
Mill Creek	5	Rb	31	34	28	6	1				100	32	127	3.1	0.79
Milliloma River, East Fork	17	Ct		41	61		1				103	33	75	3.1	1.37

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over						
STREAMS (continued)																
Mohawk River	2	Rb	1	5	3							9				
		Wf										2				
		Bg	1			2						$\frac{1}{12}$	32	36	0.4	0.33
Mosby Creek	2	Rb	10	50	23	4	1				88					
		Ct		2	2						$\frac{4}{92}$	32	91	2.9	1.01	
Multnomah Channel	3	Ch									1					
		LB		1							1					
		WC	2								2					
		YP	1								$\frac{1}{5}$	55	148	0.1	0.03	
Necanicum River	1	Ct		231	38						269	138	237	2.0	1.14	
Nehalem River	1	Ct		366	17	1					384	94	262	4.1	1.47	
Nehalem River, North Fork	1	Ct		153		3	1				157	57	178	2.8	0.88	
North Yamhill River	2	Rb	91	28	14						133					
		Ct	1	6	7						$\frac{14}{148}$					
		St						1			$\frac{1}{148}$	69	453	2.1	0.33	
Ochoco Creek	5	Rb	69	89	13	3	1				175	47	168	3.7	1.04	
Owyhee River, Sec. B	11	Rb	62	293	211	30		2			598	146	276	4.1	2.17	
Quartzville Creek	2	Rb	184	89	1						274					
		St							1		$\frac{1}{275}$	116	214	2.4	1.29	
Rearing River	2	Rb	4	4	1					1	10					
		Ct	29	8							37					
		BT		1							$\frac{1}{48}$	35	70	1.4	0.69	

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
			STREAMS (continued)														
Row River	2	Rb	23	82	57	21	1					184					
		Ct	2	4	3	1	2					12					
		Wf	2	9								11					
		LB										5					
		Co		2	2	1		2				2	214	117	229	1.8	0.93
Salmon Creek	2	Rb	25	128	42	1					196						
		Ct	20								20	216	127	333	1.7	0.65	
Salt Creek	2	Rb	6	121	57	1					185						
		Ct		2							2	2					
		BT	17								17	204	77	207	2.6	0.99	
Sandy River	3	St									78						
		Ch								1	1						
		Co					2		1		3	82	450	1,220	0.2	0.07	
Santiam River	2	Rb										1					
		Ct	26	10							37						
		St								15	15	55	80	136	0.7	0.39	
Santiam River, North Fork	2	Rb	122	218	183	12					535						
		Ct	7	1							8						
		BT	11								11						
		St	6								9						
		Ch									10						
		Wf		1	1						2	581	277	554	2.1	1.05	
Santiam River, South Fork	2	Rb	62	120	53	1					236						
		Ct	17	1							18						
		St									7						
		Ch									6	304	597	0.9	0.45		

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over						
STREAMS (continued)																
Severnile Creek	14	Rb	1	1	1	2				1	3	9	39	93	0.7	0.31
		Br	2	7	6	4		1		20						
Silver Creek	12	Rb	32	45	57	11	3	2				150	44	170	3.4	0.88
Smith River	16	Rb										27	76	218	1.6	0.56
		Ct								95						
Snake River	9	Rb		9		7	3	2	1			22	78	223	0.6	0.20
		St								7						
		Ch			1					1						
		CC	2	4	2	2	2		2	14						
		Sg							1	1						
Snake River	10	SB	2	1		3	1				7	250	680	1.9	0.69	
		CC	24	191	190	33	10	3	1	452						
		BLB	5	3	1					9						
Spring Creek	14	Rb	9	9	7	2					27	35	51	0.8	0.57	
		BT	2							2						
Thomas Creek	13	Rb		17		1	81	1		23	123	39	148	3.2	0.83	
Tualatin River	2	Ct	2									2	29	89	0.1	0.04
		BB		1						1						
		C		1						1						
Wallowa River	8	Rb	139	94	15	1	1					250	116	176	2.4	1.61
		DV			1	1				2						
		BT	12	11	1					24						
		Wf			3	4	1			8						

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over	Total Fish	Total Anglers					
STREAMS (continued)																	
Willamette River, Sec. 1	3	St							1			2					
		Ch										3					
		Sg										3					
		WC	3	1								4		150	414	0.1	0.03
												12					
Willamette River, Sec. 2	2	Rb	7	60	36	8	2	1				117					
		Ct	13	60	38	9						120					
		ChS	4									4					
		Wr		1	1	1						3					
		LB		3								3					
		WC		12	5							17					
		Rg	2	2								4					
		CSu		2				1				4					
		Cp	1	7	1			1		1		11					
		CRC			2	1	1					4					
		Sq	1	1	1			2				5		113	411	2.6	0.71
												292					
Willamette River, Coast Fork	2	Rb	113	56	30	1					200						
		Ct	4		2						6		120	211	1.7	0.98	
Willamette River, Middle Fork	2	Rb	56	353	216	37	9				671						
		Ct	60	22	5						87						
		ChS								5	5						
		Wr		8	8	1					17						
		WC	8								8						
		LB				1					1		389	1,304	2.0	0.61	
Willamette River, North Fork	2	Rb	18	93	30	1					142						
		Ct	65	14							79		117	381	1.9	0.58	
Williamson River	14	Rb	3	3	4	4	7	9	3	5	38		50	136	0.8	0.28	
LAKES AND RESERVOIRS																	
Agate Lake	15	Rb		1	4	50					55		221	633	0.2	0.09	

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over						
LAKES AND RESERVOIRS (continued)																
Agency Lake	14	Rb				1	2	14	13	22	52					
		BT						1			1					
		Br			4	3	2	1			10					
		Br-B			1						$\frac{1}{64}$	124	624	0.5	0.10	
Ann Lake	2	Rb									2					
		BT	17	113	248	32	1	1			$\frac{410}{412}$	81	351	5.1	1.17	
Antelope Reservoir	11	Rb	12	18	23	4					57	28	94	2.0	0.61	
Badger Lake	5	Rb	10	95	33	13	8				159					
		BT	1								$\frac{1}{160}$	52	169	3.1	0.95	
Benson Lake	3	Rb	2	7	20	4					9					
		BT		22							$\frac{46}{55}$	42	248	1.3	0.22	
Beulah Reservoir	10	Rb	5	44	170	282	71	3			575					
		Wf			3						$\frac{3}{578}$	256	1,163	2.3	0.50	
Bibby Pond	5	Rb	5	15	13	12	12	4			61	66	148	0.9	0.41	
Big Creek Reservoir	18	Rb		124			13	13			150					
		Ct Co		13 1	1						$\frac{14}{165}$	43	100	3.8	1.65	
Big Cultus Lake	5	Rb					2				2					
		LT					1		2		$\frac{3}{5}$	26	95	0.2	0.05	
Big Lava Lake	5	Rb	33	6	2	83	8				8					
		BT		72	96						$\frac{292}{300}$	252	835	1.2	0.36	

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
LAKES AND RESERVOIRS (continued)																	
Blue Lake	5	Rb K		18 4	23								41 4 45	28	69	1.6	0.65
Blue Lake	13	Rb	157	233	180	27	9	7					613	107	211	5.7	2.91
Bradley Lake	17	Rb Ct		6 28	9 201	4							15 233 248	74	265	3.4	0.94
Brownlee Reservoir	9	Rb SB BC Bg BB CC Sg		1 44	2 130	1 10	5	2					11 16 207 2 36 62 1 335	111	264	3.0	1.27
Brownlee Reservoir, Sec. A	9	Rb SB CC	8 1	5 13	1 3 265	4 406	3 110	3	1	6			11 18 834 863	256	1,303	3.4	0.66
Brownlee Reservoir, Sec. B	9	Rb LB SB BC CC		5 1 32 2 11	8 1 10 2 103	10 1 1 182	11 1 1 98	5					39 3 48 5 425 520	133	868	3.9	0.60
Bully Creek Reservoir	10	Rb YP	27 54	54 44	106 4	490	51	2					730 102 832	713	2,158	1.2	0.39
Burns Gravel Pond	12	Rb	18	68	81	11	3						181	127	188	1.4	0.96
Campbell Lake	13	Rb	10	308	84	3							405	159	577	2.5	0.70

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
LAKES AND RESERVOIRS (continued)																	
Carmen Reservoir	2	Rb	118	274	248	11							651				
		Ct	1	12	20	5	1						39				
		Bt		6									6	402	1,086	1.7	0.64
												696					
Chickahominy Reservoir	12	Rb	11	26	102	253	144	12				548	355	1,398	1.5	0.39	
Clear Lake	2	Rb	26	500	429	71	8	1				1,035					
		Bt	10	17	3							30					
												1,065	439	2,165	2.4	0.49	
Clear Lake	5	Rb	67	7	3		1					78					
		Bt		3	2							5	56	138	1.5	0.60	
												83					
Cliff Lake	2	Rb				1	2	4				7					
		Bt	5		1	1						7	55	239	0.3	0.06	
												14					
Coffenbury Lake	1	Rb										24					
		Ct		131	1								24	71	239	2.2	0.65
												132					
												156					
Corner Lake	2	Bt	2	14	23	7	1					47	36	100	1.3	0.47	
Cottage Grove Reservoir	2	Rb	60	221	74	2						357					
		Ct	4	5	5	1						15					
		Co	7									7					
												379	145	439	2.6	0.86	
Cottonwood Meadows Lake	13	Rb	3	168	48	19	17	2				257					
		Bt		52	5	11	7	1				76	153	538	2.2	0.62	
												333					
Cougar Reservoir	2	Rb	13	75	82	15						185					
		Ct	3									3					
		SS		9	2							11					
		Chs	13	10								23	150	482	1.5	0.46	
												222					

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over								
LAKEs AND RESERVOIRs (continued)																		
Crane Prairie Reservoir	5	Rb	40	88	105	41	20	6				300						
		Bf	19	75	77	10						181						
		K	8	11	6	1						26						
		Co	159	34								193			341	1,298	2.1	0.54
											700							
Crescent Lake	5	Rb			1							1						
		K	20	117	498	513	18					1,166						
		Bf							1			1						
		Lt					1		2	6	10							
		Wf								1		1			728	2,799	1.6	0.42
											1,179							
Davis Lake	5	Rb	1	3	34	128	192	314	238	179	1,089							
		K						1			1							
		Wf						5			5							
		Co		2		12	35	70	27	7	153			797	3,370	1.6	0.37	
											1,288							
Deadhorse Lake	13	Rb	31	379	9		1				420							
		Bf	8	50	2						60							
		K	15								15							
											495			177	684	2.8	0.72	
Delintment Lake	12	Rb		6	70	30	27	6			139			53	258	2.6	0.54	
Detroit Reservoir	2	Rb	381	1,095	383	10	2					1,871						
		Ct			2						2							
		St		1	1					1	3							
		K	6	8	11						25							
		Ch	4	10		4	1				19							
		Wf									1							
		Co	3			1					3			957	3,302	2.0	0.58	
											1,924							
Devils Lake	18	Rb		82	9	18	16	4	2		131							
		Ct		12	11						23							
		Co		3					1		4							
		Lb						2	2		4			221	457	0.7	0.35	
											162							

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over						
LAKES AND RESERVOIRS (continued)																
Diamond Lake	16	Rb	4,058	4,531	8,365	5,850	1,792	274	25		24,895	11,656	48,813	2.1	0.51	
Dollarhide Pond	6	Rb	12	39	24	2		3			80	29	90	2.8	0.89	
Dorena Reservoir	2	Rb	28	131	168	84	15	1			427					
		Ct	5	6	2	1					14					
		LB	6	4	26	2	4				42					
		Co	138	122	24	3					287					
		BrB	13			2					15	599	1,741	1.3	0.45	
											785					
Duffy Lake	2	Rb	6	16	8	4	3				37					
		BT		9	16	21	3				49	49	206	1.8	0.42	
											86					
Dunaway Pond	11	LB	8	1							9					
		Bg	12	4							16					
		BLB	1								1	25	22	1.0	1.18	
											26					
Duncan Reservoir	13	Rb				4	15	15			34	32	94	1.1	0.36	
East Lake	5	Rb	187	823	1,423	306	124	35	7	1	2,906					
		BT	4	21	104	97	35	2	2		263					
		Br	1					2		1	6	1,643	6,333	1.9	0.50	
											3,175					
Eckman Lake	18	Rb			7	4					34					
		Ct	23	11	18	5	2	2			38	32	83	2.3	0.87	
											72					
Eel Lake	17	Ct									341					
		K									6	156	696	2.2	0.50	
											347					
Elk Lake	2	Rb	3			1					4					
		BT	12	17	7	1					37					
		K	79	28	1						108	32	153	4.7	0.97	
											149					

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)							20 & Over	Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20						
LAKES AND RESERVOIRS (continued)															
Elk Lake	5	Rb		3	10	2				15					
		Bt	3	14	16	3	1			37					
		K	46	108						154					
		AS	1							<u>1</u>	62	190	3.3	1.09	
Fall Creek Reservoir	2	Rb	126	414	198	44	13	1	1	797					
		Chs	1,097	115	2					1,214					
		Co	2	6						<u>8</u>	918	3,205	2.5	0.63	
Fern Ridge Borrow Pit	2	Rb	14	41	10				1	66					
		Cp		1						<u>1</u>	61	109	1.1	0.61	
Fern Ridge Reservoir	2	Ct	3	9	7					19					
		LB	1	8	17					26					
		WC	2	3	1					6					
		BtB	1	2						<u>3</u>	43	89	1.3	0.61	
Fir Lake	2	Bt	6	63	17	2				88	34	119	2.6	0.74	
Fish Lake	12	Rb	49	1,058	1,396	395	128	31		3,057					
		Bt	13	306	65	20	1	1	1	<u>407</u>	437	3,619	7.9	0.96	
Fish Lake	15	Rb	292	15						307	52	280	5.9	1.10	
Foster Reservoir	2	Rb	81	204	75	54	14	3		431					
		St	80	154	3					237					
		Ch	59	34						93					
		Co	53	115	18					<u>186</u>	401	1,194	2.4	0.79	
Frog Lake	5	Rb	11	104	60	2	8		1	186	156	398	1.2	0.47	
Gold Lake	2	Rb	3	47	54	37	22			163					
		Bt		3	2		4			<u>9</u>	76	358	2.3	0.48	

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over						
LAKES AND RESERVOIRS (continued)																
Green Peter Reservoir	2	Rb	24	46	72	26					168	65	207	3.3	1.05	
		St	2	7						9						
		Ch	11	13						24						
		Co	2	11	2					15						
		StS						1		1						
Haines Pond No. 1	9	Rb B	156 5	125 3	2					283 8	46	111	6.3	2.62		
Haines Pond No. 2	9	Rb	215	43	6					264	47	112	5.6	2.36		
Harriet Lake	3	Rb	16	108	31					155	46	186	3.4	0.83		
Haystack Reservoir	5	Rb	2	44	38	13	2	1		100	100	290	1.1	0.37		
		K BrB	1	4	2	1			7 1							
Highway 203 Pond	9	Rb	106	38	1	1				146	48	91	3.1	1.63		
		LB		1	1				2 148							
Horse Lake	2	Rb	35	2	3	6				5	64	324	6.1	1.20		
		BT	203	140					384 389							
Howard Prairie Reservoir	15	Rb	3	401	6,567	250	81	9		7,311	1,197	3,926	6.1	1.86		
		BrB	8	2					10 7,321							
Hyatt Lake	15	LB	6	7	1					14	28	124	3.9	0.88		
		Bg	9						9							
		Pk	1						1							
		BrB		82					85 109							
Jo Jo Lake	2	Rb	10	29	9	8	2		58	35	96	1.7	0.60			

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over	Total Fish					
LAKES AND RESERVOIRS (continued)																
Kingsley Reservoir	4	Rb	6	79	23	1	2					111	88	231	1.3	0.48
Kinney Lake	8	Rb BrB	1 17	1 27		2						4 44 48	30	46	1.6	1.04
Klamath Lake	14	Rb Br			1	6	9	7 2	6	10		39 2 41	259	650	0.2	0.06
Lake of the Woods	14	Rb BT K	3	4 1 516	2 4 201	6	5	3				9 19 717 745	203	558	3.7	1.34
Leaburg Reservoir	2	Rb Ct DV	18 39 4	155 8 4	76 1	11						260 48 10 318	211	698	1.5	0.46
Lemolo Reservoir	16	Rb Br K BT										782 1,012 22 1,824	807	3,249	2.3	0.56
Lemolo Reservoir No. 2 forebay	16	Br										7	25	88	0.3	0.08
Linton Lake	2	BT Br	5 3	16	8	1 9						22 20 42	33	148	1.3	0.28
Little Cultus Lake	5	Rb BT	20 11	22 140	7 28	3						49 182 231	39	154	5.9	1.50

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
LAKES AND RESERVOIRS (continued)																	
Lofton Reservoir	13	Rb BT	6 3	63 10	15 5	2							84 20 104	75	233	1.4	0.45
Lookout Point Reservoir	2	Rb Ct ChS LB Sq		2 1 13 1 1	10 2 39 1	7 16	2 2 1						21 3 70 1 2 97	91	231	1.1	0.42
Loon Lake	16	Rb Ct											58 18 76	43	175	1.8	0.43
Lost Lake	1	Rb Ct		179	51	17	12						29 230 259	77	222	3.4	1.17
Lost Lake	2	Rb BT	219 2	107 7	5 2		1						332 11 343	134	399	2.6	0.86
Lost Lake	4	Rb Br	18 1	213 1	108 1	6	12	6					363 3 366	206	707	1.8	0.52
Lower Empire Lake	17	Rb Ct		7 9	11 10								18 19 37	35	137	1.1	0.27
Lower Erma Bell Lake	2	Rb BT	10 1	34 5	41 3	50 10	12	2					149 20 169	61	266	2.8	0.64
Magone Lake	6	Rb BT K	33 8 57	47 18 2	10 10								90 36 59 185	38	91	4.9	2.03

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)							Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20					20 & Over
LAKES AND RESERVOIRS (continued)														
Malheur Reservoir	10	Rb	93	3,017	1,350	269	14	1	1	4,745	723	3,144	6.6	1.51
Marion Lake	2	Rb	68	75	66	59	15	6		289				
		Ct BT	1 48	1 120	69	11				248 539	214	1,319	2.5	0.41
Miller Lake	14	Rb	18	43	40	7	3	3	1	115				
		BT X		1	1				1	2 118	114	320	1.0	0.37
Miller Reservoir	10	Rb	3	6	202	17	3			231	50	183	4.6	1.26
Mink Lake	2	Rb		4		2	1	1	1	6				
		BT		2	1					5 11	53	118	0.2	0.09
Morgan Lake	8	Rb	118	2,146	111	36	3			2,414				
		BT	7	754	80	47	5			893 3,307	514	1,728	6.4	1.91
Mowich Lake	2	Rb	1	7	25	9		2		44				
		BT	1	12	25	51	4			93 137	33	182	4.2	0.75
North Fork Reservoir	3	Rb	19	143	23					185				
		Co	19							19 204	85	412	2.4	0.50
North Powder Pond No. 1	9	Rb	27	7		1				35	27	57	1.3	0.61
North Powder Pond No. 2	9	Rb B BC	8 3 1	52 3	3	7	2	1		73 3 77		74	1.9	1.04

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
LAKES AND RESERVOIRS (continued)																	
North Twin Lake	5	Rb Co	1	7	17	14	1						40				
			17	108	10						175	84	288	2.1	0.61		
Ochoco Reservoir	5	Rb Co	4	74	31	11	3	1				124					
			1								125	75	236	1.7	0.53		
Odell Lake	5	Rb K LT										14					
										1	8	46					
Olalla Lake	18	Rb Ct										9					
											69	175	553	0.4	0.12		
Olalla Lake	18	Rb Ct										278					
											41						
Olallie Lake	5	Rb BT K	5	72	47	2	4	6	1			137					
			8	11							19						
Olive Lake	6	Rb Ct BT K										22					
			22								178	147	540	1.2	0.33		
Olive Lake	6	Rb Ct BT K	8	1	5							14					
			2	20	3						2						
Owyhee Reservoir	11	Rb LB BC YP BLB										48					
			1	4	4	1	15	10			44						
Oxyhee Reservoir	11	Rb LB BC YP BLB	2	24	35	42						10					
			2,272	2,835	381						5,488						
Oxyhee Reservoir	11	Rb LB BC YP BLB	10									49					
				15	31	3					5,685	722	2,731	7.9	2.08		
Oxyhee Reservoir	9	Rb Ch B CC										158					
											1						
Oxyhee Reservoir	9	Rb Ch B CC	2	3	3	1	1					5					
			5	8	3	3	1				4						
Oxyhee Reservoir	9	Rb Ch B CC										20					
											191	183	523	1.0	0.37		

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over							
LAKES AND RESERVOIRS (continued)																	
Pamalia Lake	2	Ct	105										105				
		BT	17										17	42	172	2.9	0.71
													122				
Parrish Lake	2	BT	5	25	3	1							34	27	62	1.3	0.55
Paulina Lake	5	Rb	756	2,164	701	292	30	5	1	1			3,950	2,001	5,961	2.0	0.66
Pondosa Pond	9	Rb	168	30		1	4	1		2			206	65	147	3.2	1.40
Prineville Reservoir	5	Rb	294	613	569	341	85						1,902				
		LB	65	16	14	7	1						103				
		SB	33	16	3								52				
		BrB	1	20	35	91	1						148	1,086	4,042	2.0	0.55
													2,205				
Quartz Lake	1	Ct		75	13	2							90	25	77	3.6	1.17
Rock Creek Reservoir	5	Rb	2	35	23	2	4						66	81	247	0.8	0.27
Roslyn Lake	3	Rb	1	4	9								14	43	82	0.3	0.17
Round Butte Reservoir	5	Rb	57	97	163	374	109	2					802				
		Co	41	40	26	54							161				
		Ch	11	56	28	3	3						98				
		K											3				
		DV											16				
			2	2	5	3			2				2				
		Br				1			1				2	597	2,858	1.8	0.38
												1,082					
Santiam Lake	2	BT	10	10	6	3							29	59	175	0.5	0.17
Smith River Reservoir	2	Rb	51	304	117	4							476				
		Ct	1	2									3				
		BT	2	5	2								9	202	884	2.4	0.55
													488				

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish Anglers	Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over					
LAKES AND RESERVOIRS (continued)															
Soda Springs Reservoir	16	Rb Br									25 13 <u>38</u>	68	253	0.6	0.15
South Rosary Lake	14	BT		30	44	30					104	45	207	2.3	0.50
South Twin Lake	5	Rb	7	17	809	48	2	1			884	189	783	4.7	1.13
Sparks Lake	5	BT AS	13	62	28	11	3			1	117 <u>118</u>	54	180	2.2	0.66
Spruce Run Lake	1	Ct	73	12							85	26	48	3.3	1.77
Sunset Lake	1	Rb Ct		54			23				23 54 <u>77</u>	79	264	1.0	0.29
Suttle Lake	5	Rb K Br AS Wf	1 3	23 28 7	14 185 8	219 5	2 2	1 1	1 6	36	38 437 25 43 <u>546</u>	722	3,228	0.8	0.17
Terwiller Lake	17	Rb Ct Co									2 48 <u>50</u>	31	128	1.7	0.42
Thompson Reservoir	13	Rb	5	32	25	19	9		5	1	96	115	558	0.8	0.17
Three Creeks Reservoir	5	Rb BT		7 6	9						16 6 <u>22</u>	29	67	0.8	0.33

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)								Total Fish	Total Anglers	Total Hours Fished	Fish per Angler	Fish per Hour
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over					
LAKES AND RESERVOIRS (continued)															
Timothy Lake	3	Rb	5	27	17	8	9	2	3	71					
		Ct	1	9	1	1				12					
		Br	23	61	23	1	2		2	112					
		K	484	93						<u>577</u> 772	409	1,342	1.9	0.58	
Timpanogas Lake	2	Rb		20		2				22					
		Br	5	20	12	7				<u>44</u> 66	26	110	2.5	0.60	
Toketee Reservoir	16	Rb								17					
		Br								<u>44</u> 61	93	230	0.7	0.27	
Trail Bridge Reservoir	2	Rb	27	255	170	30	3	2		487					
		Ct		2						2					
		Br		4	3	2				<u>9</u> 498	251	972	2.0	0.51	
Trillium Lake	3	Rb	20	78	19	5				122					
		Br	1				1			<u>2</u> 124	61	184	2.0	0.67	
Unity Reservoir	9	Rb	25	491	709	168	30			1,423	363	1,104	3.9	1.29	
Upper Cow Lake	11	Rb		1	23					24	32	73	0.8	0.33	
Upper Empire Lake	17	Rb		17	33	2				52					
		Ct		10	16	6	3	1	1	<u>37</u> 89	115	253	0.8	0.35	
Upper Squaw Lake	15	Rb		12	3					15					
		Ct	8	145	31	1				<u>185</u> 200	43	96	4.7	2.08	
Valsetz Lake	18	Ct		5	9	16				30					
		Br				3	1			4					
		St				1			1	<u>2</u> 36	96	296	0.4	0.12	

Table 68 (continued)

Water	Watershed	Species	Number of Fish (by Two-Inch Size Groups)										Total Hours Fished	Fish per Angler	Fish per Hour	
			6-8	8-10	10-12	12-14	14-16	16-18	18-20	20 & Over	Total Fish	Total Anglers				
LAKES AND RESERVOIRS (continued)																
Walton Lake	5	Rb		31	35	2	1	1			70	42	160	1.7	0.44	
Warm Springs Reservoir	10	Rb		1	4	2					7					
		LB		2	3	1					9					
		SB	3	3	2	29	9	1			44					
		YP	55	11	3						69					
		OC		11			2	1	1	13	28					
		BrB	21	57							78	65	296	3.6	0.79	
Wickiup Reservoir	5	Rb	7	41	56	53	48	19	1	3	228					
		K	34	36	69	61		1	1		202					
		Br		3	27	22	23	23	7	14	119					
		Wf		4	5	1		1			11					
		Co	22	16							38	616	2,175	1.0	0.27	
Wildhorse Lake	12	Ct		12	22	59	7			100	33	128	3.0	0.78		
Willow Creek Reservoir	15	Rb	822	483	42	9	1	1			1,358					
		K		138	7	1					146					
		Ct		1							1	458	1,639	3.3	0.92	
Wyatt Reservoir	9	Rb		18	10	1	1			30	35	70	0.9	0.43		
Yellow Jacket Lake	12	Rb	29	96	141	19	5	2			292	91	277	3.2	1.05	

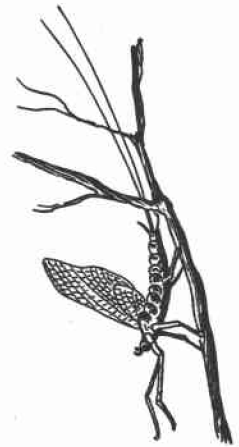


Table 69

Coho Spawning Ground Counts ^{/1}, 1967

Stream	Miles of Stream Counted	Coho Counted			Total Salmon per Mile
		Adults	Jacks	Total	
Coos River system	8.05	247	66	313	38.9
Coquille River system	12.00	288	52	340	28.3
Eel Lake system	1.75	72	94	166	94.9
Miami River system	0.75	2	1	3	4.0
Necanicum River	4.25	17	0	17	4.0
Nehalem River	13.80	327	37	364	26.4
Nestucca River system	1.25	108	2	110	88.0
Rock Creek (Devils Lake)	0.70	3	0	3	4.3
Sand Creek system	1.00	1	1	2	2.0
Siletz River system	5.75	76	6	82	14.3
Siltcoos Lake tributaries	4.00	185	87	272	68.0
Siuslaw River system	13.25	126	20	146	11.0
Tahkenitch Lake tributaries	1.50	235	136	371	247.3
Tenmile Lakes system	17.10	1,715	1,733	3,448	201.6
Trask River system	1.00	71	4	75	75.0
Umpqua River system	21.00	311	328	639	30.4
Yachats River	1.75	58	14	72	41.1

^{/1} Cooperation with Fish Commission of Oregon.

Table 70

Statewide Fall Chinook Spawning Ground Counts ^{/1}, 1967

Stream	Miles of Stream Surveyed	Number Fish Counted			Fish per Mile
		Adults	Jacks	Total	
Applegate River (Rogue system)	1.50	332	42	374	249.3
Coos River system	8.00	10	0	10	1.3
Coquille River system	6.05	125	29	154	25.5
Illinois River (Rogue system)	1.00	25	0	25	25.0
Nehalem River	5.00	158	16	174	34.8
Nestucca River system	2.25	141	8	149	66.2
Trask River system	1.00	89	4	93	93.0
Umpqua River system	7.25	62	15	77	10.6

^{/1} Joint program with Fish Commission of Oregon.

HABITAT IMPROVEMENT

The three-year opossum shrimp transfer program was completed in 1967. A number of oligotrophic lakes in the Wallowa and Cascade Mountains were stocked with opossum shrimp for the third consecutive year in the hopes that natural reproduction in the lakes would eventually enhance fish production. Equipment used in collecting the live shrimp at Waterton Lake, Alberta, Canada will be used in succeeding years to determine if the plant was successful in Oregon lakes.

The statewide project to catalog physical and biological data on streams was continued. A number of eastern Oregon stream systems have received concentrated effort and should be completed in a few years.

District fishery biologists have made innumerable investigations concerning pollution, water rights, road construction, logging operations, and adequacy of fishways.

A new State law requiring a permit from the State Land Board for removal of gravel has enabled fishery biologists to incorporate stipulations in the permits, thus reducing or eliminating damage to trout and salmon habitat.

Game Commission employees have cooperated with the U. S. Forest Service and Bureau of Land Management in locating stream improvement devices such as the installation of gabions, cover, check dams, and improving fish passage at natural partial barriers.

Through the efforts of a number of biologists, accumulation of logging debris thought to be potential barriers to anadromous fish were located and subsequently removed by stream clearance crews. Much debris was removed from streams in the Oxbow Burn area of the Smith River system.

Extremely low stream flows were recorded in the summer of 1967. Some trout and salmon were apparently lost as the result of high water temperatures and low dissolved oxygen concentrations associated with the minimum summer flows. Fish salvage operations were limited to a few small coastal streams.

A total of 8,650 gallons of rotenone was used in chemically treating five reservoirs and portions of five streams. Approximately \$54,000 was used in the rehabilitation program in 1967. Details of chemical treatment projects are presented in Table 71.

Fintrol-5 was used for the first time to eradicate undesirable species above a new impoundment in Baker County. Minnows and suckers apparently made no attempt to avoid lethal concentrations of the toxin in dredge ponds.

In a cooperative project with the U. S. Forest Service, the Game Commission completed a 100-acre fishing impoundment (Jubilee Lake) in northeastern Oregon. The impoundment will be used entirely for recreation, and the fishery is expected to be under way in the summer of 1968. The Forest Service removed the standing timber in the impoundment area and will build picnic areas and campgrounds. Preliminary work was done on other impoundment sites with special emphasis on the Pine Hollow site near Tygh Valley.

Table 71

Summary of Oregon State Game Commission Fishery Rehabilitation Projects, 1967

Water	Surface Acreage at Treatment	Normal	Water Volume Treated (Acre-Feet)	Miles of River and Stream Treated	Location by County	Month of Treatment	Rotenone Used		Species of Undesirable Fish Removed	Estimated Cost of Total Project	Restocking (Species)
							Liquid	Fintrol-5 (Pounds)			
Owyhee River				17	Malheur	March	225		CSu, Sq, Clm, ReS, Cp	\$ 2,500	Rb
Delta Park Ponds ²	60	62	105		Multnomah	March	90		Cp, Gf	1,200	BrB, P, Eg, LB
John Day River				28	Grant	August	165		BSu, CSu, Sq, ReS, Clm, Cp	800	Rb, StS
Camas Creek				14	Umatilla	August	35		BSu, CSu, Sq, ReS	250	Rb, StS
Powder River				68	Baker	August- October	520		ReS, Sq, CSu, BSu, Clm, YP, BrB, WC	3,000	Rb
Phillips Lake	0	700	600	53	Baker	August- October	100	700	ReS, Sq, CSu, BSu, Clm	15,000	Rb, Ct
Umatilla River				90	Umatilla	September	1,255		Cp, BSu, CSu, Sq, Clm, WC	6,000	StS, Rb
Cold Springs Reservoir	250	1,500	1,500	5	Umatilla	September	1,035		Cp, BSu, CSu, Sq, Clm, WC, BrB	4,000	LB, Eg, BC
Hyatt Reservoir	550	960	8,330	10	Jackson	October	5,170		Ro, BrB, Pk, Bg	21,000	Rb, ET
Little Hyatt Reservoir	10	13	71	5	Jackson	October	55		Pk, Ro, BrB	300	Rb
TOTALS	870	3,235	10,606	290			8,650	700		\$54,050	

¹ Irrigation and flood reservoirs are chemically treated in the late summer or fall at the time of lowest drawdown following irrigation season. Normal surface acreage is given to show the amount of the fishery area improved by chemical treatment.

² Complex includes 9 lakes and sloughs.

Compacted gravel in Cultus River was loosened with a bulldozer with the thought of improving the spawning area for trout and kokanee. Improvements were also made to artificial spawning channels for kokanee in Wallowa Lake. Good use was made of the improved area of the spawning channel at Wallowa Lake.

A timber company agreed to ladder Valsetz Dam on the Siletz River following a study which indicated that Valsetz Lake and its tributaries could be used as spawning and rearing areas for coho.

The Oregon Game Commission cooperated with both Klamath and Deschutes Counties in sealing several sumps on the east side of Davis Lake in an attempt to prevent the loss of a large volume of water. Numerous other sumps are known to be present in the lake bottom, and it is hoped that an extensive study may be made by a hydrologist or geologist and that ways can be found to maintain the lake level through a sealing program.

Turbidity samples taken at Hills Creek Reservoir revealed that several arms of the reservoir had readings of 25 parts per million or more well into May. This is sufficient to reduce angler success and effort.

The Job Corps working with the Game Commission and other organizations improved fish passage at a number of natural partial barriers. They also assisted in placing screens in diversion ditches of the upper Rogue River system.

Steelhead and coho eggs were used in an incubation channel experiment in the Wallowa River system. Survival of steelhead to the emerging fry stage ranged from 42 percent to about 50 percent. In the coho experiment, survival to the fry stage was 74 percent. These projects were financed by the U. S. Fish and Wildlife Service Columbia River Fishery Development program.

The application of inorganic fertilizer was discontinued at Black Lake, a warm-water fishing area in the Willamette Valley, but the effects of previous applications will be monitored. Fertilizer was again applied to South Lake, Tillamook County. The growth rate of coho fry and fingerling is being determined through periodic gill-net sampling. Coho had an average length of 6.7 inches fork length after one growing season.

A gross examination of the Tenmile Lakes watershed was made in a helicopter in an attempt to locate ponds, sloughs, potholes, and ditches which would harbor fish. A survey of the above waters was conducted on the ground in order to learn the distribution of warm-water species. Such steps were considered necessary prior to actual chemical treatment which is planned for 1968.



SCALE STUDIES

Scale samples from over 1,600 fish comprised of 16 species were examined and reports sent to district fishery biologists. The calculated length at each annulus was determined by back calculation.

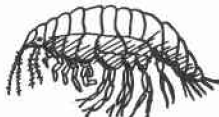
Accuracy in reading scales has been enhanced by learning more about the life histories of game fish on a specific and regional level. Scale samples from trout and salmon raised at the various State hatcheries have materially aided in scale analyses of fish taken from the sport catch, as well as from stream and lake population sampling.

Scales from Rogue River summer steelhead revealed that females may have spawned four times before reaching 25 inches in length, while other summer-run steelhead are generally 25 inches long by the time they make their first spawning run. In addition, it was found that summer-run steelhead, outside of the Rogue, may not necessarily spawn on successive years. Rogue River summer steelhead appear to spawn on successive years with short interims of ocean residence.

It has been advantageous to examine wet mounts of small trout and salmon scales in determining the presence of the first annulus. The use of gummed scale mounting in all except the larger scales has been discontinued in view of the difficulty fishery biologists have in determining proper orientation in regard to circuli ridges. All but the largest scales are now mounted on glass.

Areas receiving special consideration in the period were trout from new reservoirs of the Middle Willamette District and Hood River, and steelhead from the lower Deschutes River.

A field trip was made with district fishery biologists of eastern and southern Oregon to collect scale samples from trout and salmon in various watersheds. The collection of scale samples with district biologists has materially aided in routine scale work.



FISH PROPAGATION

C. C. Jensen

The following tables cover the fish production data for 1967 at fifteen Oregon State Game Commission hatcheries.

Annual egg production by species and hatchery, including exchanges, are shown in Tables 72 and 73. Table 74 summarizes the annual egg production from 1960 through 1967.

Fish production data by hatchery, showing liberations from each station and net pounds produced, are listed in Table 75.

Table 76 presents a comparison of conversion ratios (pounds of food fed as compared to pounds of fish liberated in the same calendar year) from 1960 through 1967.

Average food conversion ratios by species released in 1967 are shown in Table 77. The ratios represent the actual amounts of food fed to each group from the fry to release stage.

Fiscal year expenditures covering salaries, feed, maintenance and supply, and capital costs are shown in Table 78 for each hatchery. Total costs in 1967 (\$735,573) are somewhat higher than in the previous year (\$682,753), primarily because of higher salaries and additional spending for maintenance and supplies. Of special interest is the fact that salaries constitute approximately 53 percent of the costs of rearing fish.

Production costs, covering each phase of the operation for the past eleven years, are shown in Table 79. Gross rearing costs for 1967 (from financial statements) total \$0.62 per pound. Total costs other than depreciation (includes liberation) equalled \$0.73 per pound of fish reared. Depreciation of facilities would increase the cost to \$0.81 per pound for 1967.

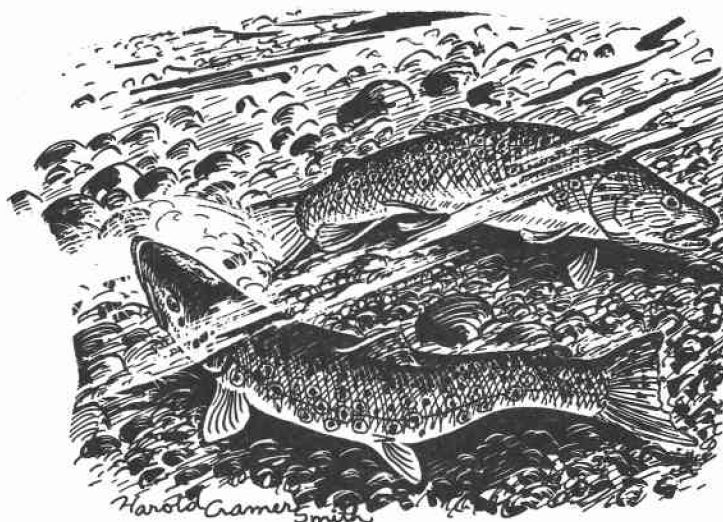
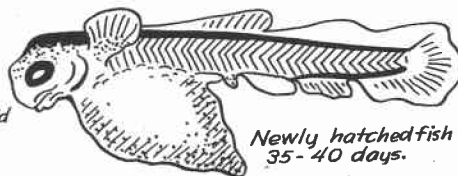


Table 72

Annual Egg Production Showing Contribution
of Wild, Hatchery, and Imported Eggs
from Other States and Countries, 1967

Species	Eggs from Wild Fish	Eggs from Hatchery Brood Fish	Eggs Imported or Exchanged	Eggs Exported or Exchanged
Spring Rainbow	106,800	5,635,448	738,502	
Fall Rainbow		20,476,256	25,048	28,512
Kamloops	593,732			
Cutthroat		1,686,169	723,494	218,835
Brook Trout	5,146,700			3,079,600
Dolly Varden			128,480	
Brown Trout			424,800	
Atlantic Salmon		608,037		
Kokanee	798,546		1,805,340	
Winter Steelhead	2,609,771			
Summer Steelhead	860,755		1,922,286	
Spring Chinook	1,011,785			
Fall Chinook	1,902,464			
Coho Salmon	491,000			40,880
TOTALS	13,521,553	28,405,910	5,767,950	3,367,827
TOTAL INCOMING EGGS		47,695,413		

Eyed egg - 12-20 days old



Newly hatched fish
35-40 days.

Table 73

Number of Eggs Received at Oregon Egg-Taking Stations, 1967

Hatchery	Rainbow		Kamloop	Cutthroat	Brook Trout	Brown Trout	Dolly Varden	Atlantic Salmon	Kokanee	Steelhead		Chinook Salmon		Coho Salmon	Total
	Spring	Fall								Winter	Summer	Spring	Fall		
<u>Alsea</u> (Big Creek, OFC)				447,200						1,110,710					1,557,910
										499,130					499,130
<u>Bandon</u> (Lobster Cr.)													204,900		1,010,969 204,900
<u>Butte Falls</u> (Rogue Riv.)										252,864	135,798	100,052			488,714
<u>Cedar Creek</u> (Nestucca River)										287,394					287,394
(Bonneville, OFC)												66,764			66,764
(Trask Riv., OFC)													600,000		600,000
(Wn. Dept. of Game)												85,120		8,000	93,120
															198,730
<u>Fall River</u> (East Lake)															142,800
(Lava Lake)															4,070,900 1,075,800
(Crescent Lake)															507,142
(Wn. Dept. of Game)															504,000
<u>Onat Creek</u> (Big Creek, OFC)										459,673					459,673
(Bonneville, OFC)													500,000		500,000
(Wn. Dept. of Game)											456,353				456,353
<u>Hood River</u> (Felton, OFC)															
(Cascade H., OFC)												29,220			29,220
(Hot Creek H., Calif.)													283,000		283,000
															125,300
<u>Klamath</u> (Crescent Lake)															
(Mt. Shasta, Calif.)															291,404
(Mt. Whitney, Calif.)															738,502
															424,800

Table 73 (continued)

Hatchery	Rainbow		Brook Trout	Brown Trout	Dolly Varden	Atlantic Salmon	Kokanee	Steelhead		Chinook Salmon		Total
	Spring	Fall						Winter	Summer	Spring	Fall	
<u>Leaburg</u> (South Fork Mckenzie) (Fall Creek, OPC)		1,357,110	228,000							480,240		1,595,110
<u>Oak Springs</u> (Colorado) (Orbow, Idaho) (Pelton, OPC) (Montana)		8,013,680					428,500		1,085,240	30,575		8,013,680 428,500 1,085,240 30,575 401,096
<u>Roaring River</u> (Siletz Riv.) (Utah) (Wn. Dept. of Game)		11,105,466	399,464					277,840				11,105,466 277,840 399,464 25,048
<u>Rock Creek</u> (Umpqua Riv.) (Bonneville, OPC) (Diamond Lk.)								258,536		144,986	597,564	403,522 597,564 593,732
<u>Wallows</u> (Orbow, Idaho) (Wyoming)									382,693			382,693 128,480
<u>Willamette</u>	5,635,448											5,635,448
<u>Wizard Falls</u> (Pelton, OPC) (Colorado)						465,237		188,581		74,828		465,237 263,409 471,744
TOTALS	6,480,750	20,501,304	593,732	2,409,663	5,146,700	424,800	128,480	608,037	2,609,771	2,783,041	1,011,785	1,902,464 491,000 47,695,413

Table 74

Annual Number of Eggs Produced and Imported from Other States and Countries
from 1960 through 1967

Species	1960	1961	1962	1963	1964	1965	1966	1967
Spring Rainbow	3,677,910	4,005,756	3,410,431	4,749,677	7,200,806	8,521,730	4,684,554	6,480,750
Fall Rainbow	10,021,414	12,359,008	11,965,814	11,017,748	20,419,984	16,308,900	14,820,010	20,501,304
Kamloops Rainbow	4,046,000	15,571,149	21,116,652	13,224,311	1,211,888	389,500	132,600	593,732
Cutthroat	1,918,734	1,937,686	2,291,880	2,289,467	1,506,198	1,430,500	1,200,880	2,409,663
Brook Trout	3,470,031	4,126,838	4,065,627	4,353,540	4,455,530	5,363,220	4,867,000	5,146,700
Brown Trout		468,228	200,408	300,104	301,000	301,300	401,000	424,800
Golden Trout	78,852	9,159	76,950	39,401	37,650	32,940	69,500	128,480
Lake Trout	74,139	40,334	12,600	185,918				
Winter Steelhead	725,420	865,761	1,009,375	1,377,736	1,580,304	2,264,830	2,519,536	2,609,771
Summer Steelhead	357,029	682,579	760,675	1,078,698	813,425	988,640	2,296,862 ^{/1}	2,783,041
Coho Salmon	98,240	80,000	80,000	310,167	763,981	1,393,500	1,413,000	491,000
Spring Chinook	246,436	193,124	307,660	328,443	231,014	378,850	408,045	1,011,785
Fall Chinook			45,710	92,600	1,332,584	625,520	2,022,480	1,902,464
Atlantic Salmon	394,812	148,740	53,268	78,796	339,505	747,140	768,420	608,037
Kokanee	2,785,669	3,752,427	3,421,062	2,447,369	4,700,170	2,561,050	2,626,320	2,603,886
TOTALS	27,894,686	44,240,789	48,818,112	41,873,975	44,894,039	41,307,620	38,230,207	47,695,413

^{/1} Approximately 0.7 million eyed and hatched for Idaho.

Table 75

Summary of Annual Fish Production Data for Calendar Year 1967

Hatchery	Pounds of Food Fed		Total Pounds Food Fed	Fish Liberated from Hatcheries		Net Production (Including Transfers In and Out)	
	Brood Fish	Fry, Fingerling, and Yearling Fish		Number	Pounds	Number	Pounds
Alsea	8,538	161,353	169,891	1,389,756	85,313	1,969,021	86,333
Bandon	2,413	153,606	156,019	267,257	61,421	897,097	92,446
Butte Falls		147,839	147,839	745,621	51,281	480,336	61,567
Cedar Creek	313	163,658	163,971	836,172	87,476	783,039	86,481
Fall River	1,120	46,047	47,167	2,317,063	22,692	2,493,230	19,456
Gnat Creek		63,385	63,385	1,210,704	16,829	1,210,704	16,829
Hood River		41,126	41,126	467,433	27,949	93,573	16,088
Klamath		81,921	81,921	2,663,228	46,997	2,532,788	46,681
Leaburg	18,250	462,295	480,545	1,943,021	230,381	1,733,052	228,283
Oak Springs	58,650	214,085	272,735	3,830,817	147,332	5,104,412	154,711
Roaring River	48,550	154,356	202,906	852,394	89,038	852,519	89,638
Rock Creek		111,527	111,527	968,677	109,745	198,260	67,083
Wallowa		79,429	79,429	375,270	36,946	123,337	31,962
Willamette	22,560	131,696	154,256	447,763	68,469	237,853	66,201
Wizard Falls	8,955	203,734	212,689	1,780,231	102,939	2,176,668	121,656
TOTALS	169,349	2,216,057	2,385,406	20,095,407	1,184,808	20,885,889	1,185,415

Table 76

Comparison of Conversion Ratios from 1960 through 1967
Computed from Net Pounds of Fish Liberated and Transferred
as Related to Pounds of Food Fed During the Calendar Year

Hatchery	Annual Net Fish Production in Pounds, with Conversion Ratios							
	1960	1961	1962	1963	1964	1965	1966	1967
Alsea	39,279 2.28	60,268 1.90	54,057 1.97	52,307 2.85	55,302 1.76	41,948 2.52	56,538 2.82	86,133 1.87
Bandon	19,379 3.10	33,232 2.00	43,478 2.09	36,647 2.29	42,683 2.25	56,900 2.44	74,377 1.92	92,446 1.66
Butte Falls	56,372 2.85	50,599 2.30	50,989 2.03	49,838 1.94	37,261 1.79	46,197 2.49	74,021 1.42	61,567 2.40
Cedar Creek	39,742 3.00	44,487 2.90	66,865 1.77	76,330 1.92	64,950 1.72	61,811 2.16	67,239 2.10	86,481 1.90
Diamond Lake	484	117	362					
Fall River	4,625 3.54	10,645 2.80	11,536 2.82	12,052 3.00	12,189 2.65	9,966 2.90	8,320 3.56	19,456 2.37
Gnat Creek		22,237 2.40	24,499 2.42	33,972 2.33	47,718 2.06	47,963 2.13	42,512 1.53	16,829 3.77
Hood River	33,160 2.17	33,919 1.70	28,614 1.84	28,834 2.00	24,092 2.22	22,758 2.24	24,704 2.51	16,088 2.56
Klamath	35,670 3.27	58,111 1.90	62,280 1.70	57,326 1.64	50,015 1.68	43,373 2.09	60,319 2.04	46,681 1.75
Leaburg	149,541 1.82	158,834 1.90	157,893 2.02	195,570 2.04	261,015 1.73	200,766 2.82	254,776 1.70	228,283 2.03
Oak Springs	100,168 2.22	131,643 1.70	140,183 1.79	207,634 1.92	145,644 1.53	166,112 1.74	137,037 1.53	154,711 1.38
Roaring River	48,660 3.03	71,428 2.40	70,906 1.82	85,019 1.80	68,940 1.88	88,210 1.76	97,467 1.66	89,638 1.72
Rock Creek	62,410 3.08	99,196 1.90	56,478 1.95	75,826 1.80	69,099 1.61	42,706 1	3,536 1	67,083 1.66
Wallowa	27,261 2.56	27,869 2.60	31,828 1.96	17,921 1.77	17,234 2.59	27,987 2.50	36,778 1.92	31,962 2.49
Willamette	42,418 2.50	55,228 2.20	53,745 1.76	57,977 1.76	86,649 1.36	13,391 1	85,340 1.70	66,201 1.99
Wizard Falls	65,028 2.11	94,469 1.60	86,234 1.78	88,205 1.98	93,642 1.81	89,532 1.92	91,202 1.74	121,656 1.67
TOTALS	724,197	952,282	939,947	1,075,458	1,076,433	959,620	1,114,166	1,185,415
AVERAGES	2.49	2.01	1.90	1.99	1.75	2.22	1.85	1.87

1 Out of operation for most of year because of 1964-65 flood.

Table 77

Net Food Conversion Factors
Computed for Each Species of Fish Liberated in 1967

Species	Number Fish Liberated	Pounds of Fish Liberated	Pounds of Food Fed	Food Conversion Factor
Rainbow	13,648,785	833,818	1,475,316	1.77
Cutthroat	838,540	135,204	241,428	1.79
Brook Trout	1,602,426	11,432	20,884	1.82
Brown Trout	40,883	134	529	3.94
Steelhead	2,789,640	176,692	372,647	2.11
Kokanee	2,063,045	12,788	34,877	2.73
Atlantic Salmon	49,800	20	110	5.50
Fall Chinook	1,834,390	3,714	4,338	1.16
Spring Chinook	568,652	64,287	107,009	1.66
Coho Salmon	796,880	3,013	5,790	1.92
TOTALS	24,233,041	1,241,102	2,262,928	
AVERAGE				1.82

NOTE: The above table includes data from the fry stage to time of liberation for each group of fish. Weight of fry at start of feeding was not deducted.

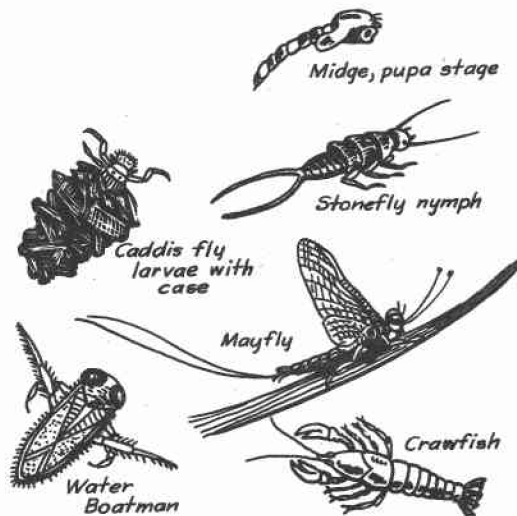


Table 78

Fiscal Year Hatchery Expenditures
as Shown on the June 1967 Financial Statement

Hatchery	Salaries	Feed	Maintenance and Supplies	Capital Expense	Total Fiscal Costs
Alsea	\$ 25,835	\$ 16,339	\$ 2,612	\$ 3,500	\$ 48,286
Bandon	25,234	18,130	3,710		47,075
Butte Falls	25,310	12,100	3,069	372	40,851
Cedar Creek	21,025	14,661	4,007	844	40,537
Diamond Lake			54		54
Fall River	18,403	5,574	2,847		26,824
Gnat Creek	31,239 <u>1</u>	8,624	13,859	749	54,471
Hood River	19,560	5,733	5,645		30,938
Klamath	24,623	10,490	3,785	151	39,049
Leaburg	41,363 <u>2</u>	42,698	11,721		95,782
Oak Springs	35,914	28,461	7,663	477	72,516
Roaring River	25,061	18,305	3,629	4,240	51,234
Rock Creek	29,569	12,432	6,933	1,190	50,124
Wallowa	14,216	8,932	3,566	258	26,972
Willamette	24,876	18,816	7,954	2	51,647
Wizard Falls	29,070	22,233	6,128	1,782	59,213
TOTALS	\$391,298	\$243,528	\$87,182	\$13,565	\$735,573
Percent of Totals	53.20	33.11	11.85	1.84	
Ending June 1966	\$365,454	\$240,651	\$65,444	\$11,204	\$682,753
Percent of Totals	53.53	35.24	9.58	1.65	

1 Includes \$2,260 other payroll expense; 7.45 percent.

2 Includes \$2,993 other payroll expense.

Table 79

Summary of Fiscal Year Production Costs, 1957 through 1967

Year	Gross Pounds of Fish Liberated from Hatcheries	Fiscal Year Costs		Rearing Costs per Pound of Fish			Average Cost of Food per Pound	Pounds of Food Fed			Total for Fiscal Year
		Operation ^{/1} Including Capital Expenditures	Feed Only ^{/2}	Gross	Rearing Plus Liberation	Estimated Rearing and Liberation Plus Other ^{/3}		Fiscal Year		Total for Fiscal Year	
								First 6 Months	Second 6 Months		
1957	516,395	\$635,335	\$209,123	\$1.2329	\$1.3179		\$0.4050	1,210,551	1,393,777	2,604,328	
1958	706,279	651,455	267,681	0.9224	1.0074		0.3790	1,306,062	1,869,012	3,175,074	
1959	685,773	730,880	267,819	1.0658	1.1508		0.3910	1,670,965	1,249,067	2,920,032	
1960	729,530	599,645	217,325	0.8220	0.8870		0.2980	992,098	1,172,263	2,164,361	
1961	951,838	638,106	219,716	0.6704	0.7554		0.2308	870,660	1,245,827	2,116,487	
1962	939,947	724,807	216,163	0.7711	0.8561		0.2300	937,708	1,086,918	2,024,626	
1963	1,075,458	983,391	291,531	0.9144	0.9950		0.2700	944,839	1,278,911	2,223,750	
1964	1,076,288	689,237	251,793	0.6403	0.7253	\$0.7850	0.2339	1,071,511	1,174,614	2,246,125	
1965	958,750	728,390	248,295	0.7597	0.8447	0.8865	0.2590	929,028	1,256,541	2,185,569	
1966	1,087,291	682,753	240,651	0.6279	0.7129	0.7441 ^{/6}	0.2213	1,067,968	1,174,275	2,242,243	
1967	1,184,808	735,573	243,528	0.6208	0.7058	0.7289	0.2055	1,178,328	1,207,078	2,385,406	

^{/1} Excludes automotive and related supplies, feed transportation, retirement, salary overhead, postage, and office supplies (Leaburg and Onat Creek excepted in 1963, 1965, and 1966).

^{/2} Food inventory not deducted.

^{/3} Includes salary overhead, retirement, feed transportation, and automotive; excludes depreciation of facilities. Estimated total costs with depreciation \$958,000, or \$1.00 per pound in 1965; \$899,000, or \$0.83 per pound in 1966; and \$963,560, or \$0.8133 per pound in 1967.

^{/4} Includes brood fish.

^{/5} Minus inventory.

^{/6} Corrected from \$0.7268 shown for 1966.

OREGON SALMON AND STEELHEAD SPORT FISHERY

R. O. Koski

Increasing interest in the salmon and steelhead fishery, generated by high catches in recent years, resulted in a banner year in 1967.

Sport catch estimates were obtained as usual for statewide totals, as well as individual waters, by analysis of returned catch record cards.

The catch of salmon reached a record high with a calculated total of 456,896 fish over 20 inches in length. This is 108,585 more salmon recorded than in 1965, the previous record year. The individual catch rate for all those angling increased to 1.98 fish per angler. Eliminating the unsuccessful angler, the catch rate rose to 3.85 fish per angler.

Hatchery fish again contributed heavily to the steelhead catch, but the total catch dropped to 134,040 fish from the 1966 record high of 168,083 steelhead. The individual catch rate for all anglers dropped to 0.50 fish, while successful anglers landed 3.32 steelhead.

Table 80 presents the analysis of the 1967 catch record card data and includes a lower, revised estimate of total catch after correction for non-response bias.

Table 81 presents the revised total catch figures for a 10-year period. A summary listing the catch of salmon and steelhead by stream and year is available from the Fishery Division.

For the first time since the catch cards have been in use, ocean anglers were asked to indicate the port from which they fished. Returns indicated that on 58.5 percent of the cards the port was noted. Through increased acceptance of this change in entry and wider publicity regarding the need, sufficient data may be available by port to compare with other census methods.

A record number of licenses was issued to salmon-steelhead anglers in 1967. Sales totaled 298,660, and 27,730 free juvenile cards were issued. Table 82 presents participation and catch figures per angler by species for each year since 1953.



Table 80

1967 Oregon Salmon-Steelhead Catch

	Salmon	Steelhead	Total
Number anglers receiving tags			326,410
Percent tags returned			20.09
Estimated number anglers not fishing			22,555
Estimated number anglers fishing; no catch			113,395
Estimated number anglers catching both			26,969
Estimated number anglers catching fish	168,101	49,288	190,623
Estimated number fish caught $\frac{1}{1}$	647,467 $\pm$ 6,887	163,662 $\pm$ 3,950	811,129 $\pm$ 8,356
Estimated number fish per angler	1.9836 $\pm$ 0.0211	0.5014 $\pm$ 0.0121	2.4850 $\pm$ 0.0256
Estimated number fish per angler catching	3.85	3.32	4.26
$\frac{1}{1}$ Revised estimates of catch using alternative method as described in "An Evaluation of the Punch Card Method of Estimating Salmon-Steelhead Sport Catch" by Ronald H. Hicks and Lyle D. Calvin.			
Estimated number fish caught	456,896 $\pm$ 31,322	134,040 $\pm$ 18,752	590,936 $\pm$ 36,504

Revised Total Catch Figures, 1958 through 1967

Year	Number Cards Issued	Percent Cards Returned	Salmon		Steelhead		Total Catch	Percent Deviation
			Catch	Percent Deviation	Catch	Percent Deviation		
1958	215,410	32.08	95,944	-25.0	76,736	-15.4	172,680	-21.0
1959	285,700	23.46	158,958	-28.2	100,198	-17.3	259,156	-24.3
1960 <u>41</u>	172,332	30.75	92,053	-25.5	80,175	-15.7	172,228	-23.6
1961	202,977	27.90	164,362	-26.5	69,613	-16.3	233,975	-23.7
1962	221,364	29.33	175,917	-26.0	106,067	-16.0	281,984	-22.5
1963	236,277	30.87	225,928	-25.4	97,468	-15.6	323,396	-22.7
1964	256,951	20.89	251,774	-29.1	85,954	-17.9	337,728	-26.5
1965	276,003	26.04	348,318	-27.2	111,439	-16.7	459,757	-24.9
1966	288,197	23.48	287,200	-28.2	168,083	-17.3	455,283	-24.5
1967	326,410	20.09	456,896	-30.2	134,040	-18.1	558,059	-24.5

/1 Initial year for \$1.00 punch card.

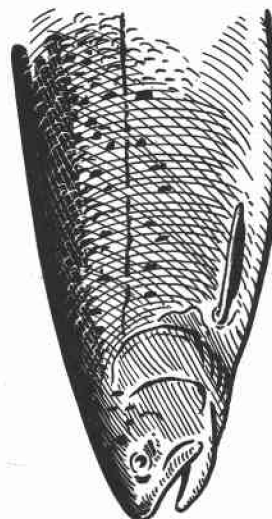


Table 82

Salmon-Steelhead Angler Participation and Catch per Angler /1,
1953 through 1967

Year	Anglers Receiving Tags	Percent Not Fishing	Catch per Angler			
			All Those Fishing		Successful Anglers	
			Salmon	Steelhead	Salmon	Steelhead
1953	173,216	45	0.53	0.51	2.56	3.12
1954	170,879	46	0.57	0.43	2.71	2.97
1955	165,422	50	0.49	0.36	2.66	2.83
1956	166,386	42	0.94	0.50	3.17	3.12
1957	135,230	45	0.96	0.43	3.27	3.07
1958	215,410	48	0.59	0.42	2.57	3.08
1959	285,700	42	0.77	0.42	2.80	3.21
1960 <u>/2</u>	172,332	34	0.85	0.46	2.80	3.22
1961	202,977	30	1.10	0.41	2.98	2.93
1962	221,364	28	1.07	0.57	2.90	3.09
1963	236,277	32	1.28	0.49	3.18	3.00
1964	256,951	26	1.38	0.40	3.06	2.98
1965	276,003	21	1.73	0.48	3.68	3.16
1966	288,197	26	1.38	0.70	3.37	3.61
1967	326,410	7	1.98	0.50	3.85	3.32

/1 The nonresponse bias correction factor not applied to these estimates.

/2 First year for \$1.00 charge for punch card.



FISH DISTRIBUTION

R. O. Koski

The year 1967 did not see any drastic changes in the fish-stocking program. This was the fourth and final year of the reduced yearling trout program made necessary by budgetary limitations. Hatchery stocks were being increased to restore the 20 percent reduction over the following two years. Noticeable changes included a small escalation in numbers of steelhead smolts released and a large increase in chinook salmon migrants. The fingerling and catchable trout schedules varied little from the 1966 program.

A total of 20,999,863 fish with a recorded weight of 1,224,856 pounds was stocked in waters of the State. The poundage stocked exceeded the previous record figure of 1966 by more than 100,000 pounds. Table 83 presents the distribution to the various watersheds of the State by species, number, and pounds.

The distribution of fish for release from each hatchery is given in Table 84. The tabulation is by species, number, and pounds; however, it does not reflect total production which includes rearing of fish for transfer, brood production, or subsequent year stocks. Complete production tables appear in the Fish Propagation section.

Fish received from Hagerman National Fish Hatchery for our management program in Regions IV and V are not included in Table 84 but are included in all other tables in this section. Fish received in the above program were all rainbow trout and numbered 856,119 with a weight of 47,015 pounds.

Table 85 delineates the release of fish by species and size class. It can be noted that the catchable trout total is comparable to the 1964 reduced production figure. The totals for 1965 and 1966 are typical because of the devastating winter flood of 1964 and increased allocation during the recovery period.

As the number of anglers increases each year, so must the available fish increase to provide an adequate harvest. Table 86 shows the trend of fish stocked per angler for a number of years.

The growing popularity of salmon and steelhead angling has caused a need for increased stocking of these species. Table 87 depicts the steady increase in the stocking of the anadromous fish.

A comparison of the distribution of resident and anadromous types of fish is shown in Table 88. Approximately 75 percent of the number of fish released are of resident type, making up about 80 percent of the total weight.

A fleet of fourteen large tankers was engaged in the distribution of fish. A total of 1,944 separate trips was made, and the tankers carried an average of more than 107,000 pounds during the season. Ten of the units were refrigerated with improved circulation systems. Increased load capacity is shown with 727 pounds hauled per average trip, compared with 599 pounds in 1962. It should be noted that the majority of loads do not approach maximum capacity.

Fish Stocking by Watersheds, 1967

Watershed	Rainbow	Cutthroat	Brook Trout	Steelhead		Kokanee	Brown Trout	Chinook	Atlantic Salmon	Coho	Totals
				Summer	Winter						
1	9,611 5,348.0	138,758 42,059.0		76,103 9,611.0	411,904 49,735.0					288,875 336.0	925,251 107,089.0
2	2,571,992 275,430.2	9,005 2,953.0	404,447 1,790.0		509,896 6,243.0	623,725 3,757.5		446,920 1,700.0		97,892 1,100.0	4,662,877 292,973.7
3	266,430 84,365.0	50,172 226.0	67,751 487.0		190,112 23,782.0	106,118 944.0		403,075 480.0	49,550 19.9		1,133,208 110,303.9
4	88,163 21,635.0		14,960 52.5	33,571 2,910.0							136,694 24,597.5
5	2,608,664 149,609.9		694,952 5,971.5	101,583 9,538.8	150,864 3,592.0	467,023 2,895.6	339,348 3,558.8	81,050 12,416.0	193,350 5,530.4	318,120 1,222.0	4,954,954 194,335.0
6	202,736 20,027.0		81,286 833.0	169,590 1,550.0		7,496 4.5					461,108 22,414.5
7	95,388 19,069.0			524,945 4,397.0							620,333 23,466.0
8	195,058 29,392.0		2,850 10.0	497,169 3,082.5		102,869 873.0					797,946 33,357.5
9	360,097 22,497.4	47,488 224.0	30,455 201.0								438,040 22,922.4
10	603,833 18,978.8										603,833 18,978.8
11	321,377 5,330.3	97,190 223.4									418,567 5,553.7
12	91,292 10,008.7	2,360 5.4				10,880 10.0					104,532 10,024.1
13	115,517 16,171.8		12,998 131.2			17,940 12.5				19,990 76.9	166,445 16,392.4
14	1,924,943 25,351.8		101,452 825.6			99,576 1,837.8					2,125,971 28,015.2
15	1,036,464 68,550.2	55,192 2,198.0	86,069 999.2	55,043 6,475.0		50,086 247.9		32,279 231.3		70,190 270.0	1,385,323 78,971.6
16	568,071 53,212.8	20,085 7,768.0	23,972 73.4	147,426 17,889.0		100,185 496.0		396,895 38,391.0			1,256,634 117,830.2
17	10,000 3,641.0	68,802 27,515.0				26,838 16.9					105,640 31,172.9
18	55,791 22,423.4	66,827 19,667.0		63,874 9,199.3	259,747 34,354.0	256,268 814.0					702,507 86,457.7
TOTALS	11,125,427 851,042.3	555,879 102,838.8	1,521,192 11,374.4	1,669,304 64,652.6	1,521,523 117,706.0	1,869,004 11,999.7	339,348 3,558.8	1,360,219 53,218.3	242,900 5,550.3	795,067 3,004.9	20,999,863 1,224,856.1

NOTE: Lower figures denote pounds of fish.

Table 84

Total Release of Fish by Hatchery, 1967 ¹

Hatchery	Species	Fish Released by Species		Total Fish Released	
		Number	Pounds	Number	Pounds
Alsea	Co	288,875	336.0	1,388,518	85,241.0
	Ct	1,922	2,120.0		
	StW	1,097,721	82,785.0		
Bandon	Ct	93,887	37,283.0	266,214	59,805.0
	StS	172,327	22,522.0		
Butte Falls	Rb	680,129	41,787.4	680,129	41,787.4
Cedar Creek	Co	408,300	1,568.9	831,262	87,477.9
	Ct	208,168	61,059.0		
	Rb	7,917	195.0		
	StW	206,877	24,655.0		
Fall River	BT	1,389,935	10,671.0	2,235,882	22,555.1
	Br	40,883	134.0		
	K	590,881	2,068.6		
	Rb	214,183	9,681.5		
Gnat Creek	Ch	849,995	2,180.0	1,210,296	16,821.0
	StS	143,376	4,375.0		
	StW	216,925	10,266.0		
Hood River	BT	24,934	87.5	491,110	31,599.2
	Rb	317,076	31,263.0		
	Ct	99,500	228.8		
	AS	49,550	19.9		
Klamath	Br	319,378	3,711.3	2,655,672	46,801.0
	BT	85,410	329.4		
	K	188,768	1,573.5		
	Rb	2,062,116	41,186.8		
Leaburg	Co	97,892	1,100.0	1,938,866	229,764.0
	Ct	4,500	1,500.0		
	Rb	1,836,474	227,164.0		

Table 84 (continued)

Hatchery	Species	Fish Released by Species		Total Fish Released	
		Number	Pounds	Number	Pounds
Oak Springs	Ch	9,900	900.0	3,819,015	147,057.1
	K	496,320	3,491.0		
	Rb	2,211,518	116,495.3		
	StS	1,101,277	26,170.8		
Roaring River	Ct	147,852	648.0	851,497	88,801.6
	Rb	698,851	87,319.6		
	StS	4,794	834.0		
Rock Creek	Ch	231,423	37,053.0	968,147	109,714.4
	K	214,376	1,071.9		
	Rb	522,348	71,589.5		
Wallowa	Rb	212,111	35,798.4	354,351	36,391.4
	StS	142,240	593.0		
Willamette	Rb	447,572	68,444.0	447,572	68,444.0
Wizard Falls	AS	193,350	5,530.4	1,777,320	102,169.3
	Ch	71,150	11,516.0		
	K	378,659	3,704.7		
	Rb	1,059,013	73,102.4		
	StS	75,148	8,315.8		
TOTALS				19,915,851	1,174,429.4
<u>REARING PONDS</u>					
Hemlock Meadows	StS	16,138	697.0	227,893	3,411.3
Libby Pond	Ch	32,279	231.3		
Medco Pond	StS	14,004	1,145.0		
Whistlers Bend	Ch	165,472	1,338.0		
TOTALS				20,143,744	1,177,810.7

/1 Does not include trout released on exchange program from Hagerman National Fish Hatchery.

Table 85

Comparison of Numbers of Salmon, Steelhead, and Trout Yearlings,
and Total Fish Stocked, 1960 through 1967

Year	Fry and Fingerlings	Yearlings		Salmon	Total Fish
		Trout	Steelhead		
1960	14,086,171	2,354,859	381,164	103,453	16,925,647
1961	16,436,181	2,458,496	777,464	269,978	19,942,119
1962	19,246,294	2,613,366	881,302	166,432	22,907,394
1963	17,687,240	2,534,146	882,002	235,658	21,339,046
1964	16,960,680	2,216,083	1,198,193	281,424	20,656,380
1965	22,904,746	2,076,077	1,140,431	89,030	26,210,284
1966	16,197,162	2,296,874	1,228,214	89,376	19,811,626
1967	17,194,416	2,211,896	1,281,078	312,473	20,999,863

Table 86

Fish Production per Licensed Angler,
1957 through 1967

Year	Number Anglers	Pounds of Fish Stocked	Pounds of Fish per Angler
1957	337,248	525,979	1.56
1958	400,044	713,806	1.78
1959	440,522	703,007	1.59
1960 ^{/1}	451,015	766,310	1.70
1961	474,900	976,917	2.06
1962	504,771	954,838	1.89
1963	531,118	1,093,532	2.06
1964	585,118	1,097,731	1.87
1965	624,412	995,172	1.54
1966	622,332	1,123,183	1.80
1967	648,379	1,224,856	1.89

^{/1} Includes daily anglers after 1960.

Table 87

**Salmon and Steelhead Stocking Summary,
1955 through 1967**

Year	Steelhead		Salmon		Total Fish Stocked	
	Number	Pounds	Number	Pounds	Number	Pounds
1955	268,896	32,739	570,419	31,449	839,315	64,188
1956	306,807	31,873	831,721	19,589	1,138,528	51,462
1957	294,354	21,309	1,436,712	10,420	1,731,066	31,729
1958	345,722	28,065	263,848	10,565	609,570	38,630
1959	372,012	42,123	207,602	22,783	579,614	64,906
1960	416,325	40,021	158,009	14,079	574,334	54,100
1961	1,069,242	68,674	275,122	27,061	1,344,364	95,735
1962	1,221,746	86,087	166,432	37,174	1,388,178	123,261
1963	1,304,464	93,127	271,613	33,432	1,576,077	126,559
1964	1,586,209	135,516	529,592	37,724	2,115,801	173,240
1965	2,026,819	131,548	1,729,021	24,624	3,755,840	156,172
1966	1,886,702	179,163	1,999,588	17,635	3,886,290	196,798
1967	3,190,827	182,358	2,155,286	56,223	5,346,113	238,581



Table 88

Summary of 1967 Fish Stocking,
Releases by Resident and Anadromous Types

Species	Number	Pounds
Rainbow	11,125,427	851,042.3
Cutthroat	555,879	102,838.8
Brook Trout	1,521,192	11,374.4
Kokanee	1,869,004	11,909.7
Brown Trout	339,348	3,558.8
Atlantic Salmon	242,900	5,550.3
Total Nonanadromous	15,653,750	986,274.3
Steelhead	3,190,827	182,358.6
Chinook Salmon	1,360,219	53,218.3
Coho Salmon	795,067	3,004.9
Total Anadromous	5,346,113	238,581.8
TOTAL	20,999,863	1,224,856.1

Transfers in 1967 totaled 259, and 5,033,702 fish weighing 274,062 pounds were transported.

Included in the above were 11,667 adult coho and 5,888 adult steelhead which were transplanted to new areas. A mortality of 1.7 percent was experienced, due primarily to over-ripe fish. Hatchery transfers involved 3,537,441 fish weighing 84,355 pounds.

The aerial stocking program was completed in twelve days beginning in early July. A total of 397 lakes was stocked at a cost of \$18.61 per lake.

The distribution of warm-water fish from the Saint Paul hatchery and salvage areas is shown in Table 89.

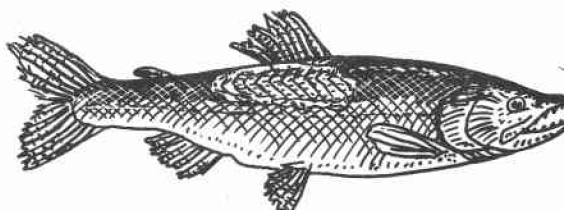


Table 89

Warm-Water Game Fish Stocking Record, 1967 .

Region	Water Stocked	Date	Species	Number Stocked	Size (Inches)
I	Cottage Grove Reservoir	2/10	SB	3,300	6.0
	Delta Park Ponds ^{/1}	4/11	YP	7,500	6-12
			BrB	300	12.0
		4/13	YP	7,000	6-12
			BrB	1,000	12.0
		4/25	LB	3,000	3.0
		5/25	LB	58	6-14
			BrB	7	12-14
	Camp Florence Pond	4/13	BrB	54	10-12
II	McKay Reservoir	3/22	LB	15,000	3.0
		4/28	Bg	16,000	1.5
III	Jones Pond	8/8	LB	200	1-4
V	Silvies River	7/26	SB	139	1-2
		8/7	SB	325	1-2
		8/8	LB	200	1-4
	Moon Reservoir	8/8	LB	1,974	1-4

^{/1} Numbers given for the yellow perch and brown bullhead are approximate. They were trapped from Tenmile Lakes (Coos County) and hauled to Delta Park to furnish instant fishing. A small number of bluegill were mixed in with these stocks. Their numbers are not known.

FISHERY DIVISION EXPENDITURES
(except Federal Aid Activities)
Fiscal Year July 1, 1966 to June 30, 1967

<u>Fish Resource</u>	<u>Expenditures Fiscal Year</u>
Basin Investigations	\$ 30,460.14
Fishery Statewide Staff	154,672.21
Fish Distribution	63,719.59
Deschutes River Hatchery	15,200.00
Alsea Hatchery	48,286.10
Bandon Hatchery	47,074.65
Butte Falls Hatchery	40,850.65
Cedar Creek Hatchery	40,536.79
Diamond Lake Hatchery	54.30
Fall River Hatchery	26,824.34
Hood River Hatchery	30,937.76
Klamath Hatchery	39,049.38
Oak Springs Hatchery	72,515.70
Roaring River Hatchery	51,234.32
Rock Creek Hatchery	50,124.17
Wallowa Hatchery	26,972.44
Willamette Hatchery	51,647.35
Wizard Falls Hatchery	59,212.56
Fishery Habitat Improvement	302,456.15
Sandy River	977.92
Corvallis Screen Plant	22,176.58
Lake and Stream Management	260,501.55
TOTAL	\$1,435,484.65

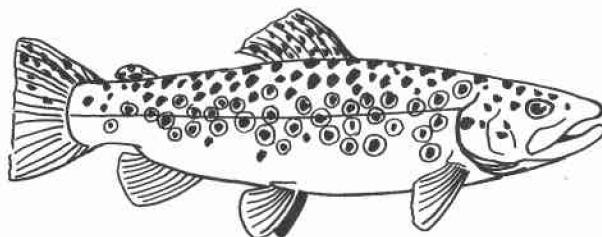


FISHERY DIVISION EXPENDITURES
FEDERAL AID ACTIVITIES
Fiscal Year July 1, 1966 to June 30, 1967.

<u>Activity</u>	<u>Expenditures Fiscal Year</u>
<u>DINGELL-JOHNSON PROJECTS</u>	
Coordination	\$ 9,540.04
Fishery Rehabilitation	23,020.13
Access Maintenance	1,070.13
Steamboat Falls	47,651.01
Klamath Lake Fishing Access	96.00
Stream Flow Requirements	46,573.55
Stream Improvement	38,884.95
Reservoir Research	11,557.52
Umpqua River Research, Winchester	7,561.88
Opossum Shrimp Introduction	5,924.71
Land and Development	<u>3,463.64</u>
SUBTOTAL	\$195,343.56
<u>COLUMBIA RIVER FISHERY PROJECTS</u>	
Chinook Salmon Appraisal	\$ 14,504.88
Incubation Channels	4,543.39
Race Track Pond	938.40
Columbia Basin Screens	71,730.09
John Day Flood	1,549.05
Gnat Creek Hatchery	54,470.58
Willamette Falls	10,299.06
Downstream Migrant Marking	<u>15,641.30</u>
SUBTOTAL	\$173,676.75
<u>U. S. CORPS OF ENGINEERS PROJECTS</u>	
South Santiam Rehabilitation	\$ 30,114.59
Fall Creek Reservoir Rehabilitation	77.82
Leaburg Hatchery	<u>95,782.14</u>
SUBTOTAL	\$125,974.55
<u>ANADROMOUS FISH PROJECTS</u>	
Alsea Hatchery	\$ 521.05
Cedar Creek Hatchery	24,383.19
Butte Falls Hatchery	<u>29,936.78</u>
SUBTOTAL	\$ 54,841.02
<u>LAND AND WATER CONSERVATION PROJECTS</u>	<u>\$ 94,661.44</u>
TOTAL	<u>\$644,497.32</u>

OREGON STATE GAME COMMISSION HATCHERIES
1967

Hatchery	Location	Superintendent
Alsea	Philomath	Paul E. Vroman
Bandon	Bandon	Willis C. Baker
Butte Falls	Butte Falls	James H. Olsen
Cedar Creek	Hebo	Charles T. Roadarmel Homer B. Clendenen
Diamond Lake	Chemult	John H. Shaw
Fall River	Bend	John K. Susac
Gnat Creek	Clatskanie	Richard A. Evans
Hood River	Hood River	John D. Bliss
Klamath	Klamath Agency	Charles F. Grow
Leaburg	Leaburg	Lynn W. Webb
Oak Springs	Maupin	Raymond F. Culver
Roaring River	Scio	William C. Wingfield
Rock Creek	Idleyld Park	John H. Shaw
Wallowa	Enterprise	Homer B. Clendenen Kenneth G. Spidell
Willamette	Oakridge	Henry J. Reed
Wizard Falls	Camp Sherman	K. E. (Gene) Morton



CONTRIBUTING PERSONNEL

Name	Title	District or Section
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Goin, J. W.	Assistant Controller	Federal Aid Expenditures
Grenfell, R. A.	Aquatic Biologist	Warm-Water Game Fish
Griggs, J. D.	Aquatic Biologist	Bend
Haight, W. I.	Aquatic Biologist	Rogue and South Coast
Heckerorth, D. N.	Aquatic Biologist	Umatilla
Herrig, R. G.	Aquatic Biologist	Ochoco
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Witty, K. L.	Aquatic Biologist	Wallowa



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