

THE RESOURCES AGENCY OF CALIFORNIA  
Department of Fish and Game

REF 90076

ANNUAL REPORT  
TRINITY RIVER SALMON AND STEELHEAD HATCHERY,  
SIXTH YEAR OF OPERATION 1963-64<sup>1/</sup>

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5/21*

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SUMMARY

King salmon started entering the hatchery on September 30, 1963. The run ended on November 29. The silver salmon run overlapped the king salmon run, beginning on October 22, and ending on December 13. Steelhead trout began entering the hatchery on October 22, 1963, and continued through June 23, 1964. A few brown trout entered the hatchery from September 30 to November 11.

Production data are as follows:

Species	Number adults	Number females spawned	Number eggs taken	Number fingerlings planted	Number yearlings planted	On hand June 30, 1964
King salmon	6,735	2,409	8,045,900	4,704,900		437,000
Silver salmon	83	39	105,900			691,000
Steelhead trout	894	306	961,600		688,000	1,143,000
Brown trout	34	22	58,100			49,500

Approximately 986,000 silver salmon eggs and 433,947 steelhead fingerlings were received from Cedar Creek Hatchery.

A heavy loss of king salmon eggs and fry occurred in January from "white spot". Water treatment experiments were conducted with steelhead eggs to try to find a method to control this disease. However, it did not affect the steelhead eggs.

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<sup>1/</sup> Submitted March 1965.

Inland Fisheries Administrative Report No. 65-5.

## INTRODUCTION

This is the sixth consecutive fiscal year report covering operation of the Trinity River Salmon and Steelhead Hatchery, located near Lewiston, Trinity County. Copies of previous reports are available upon request from Inland Fisheries Branch, Sacramento.

The hatchery was constructed by the United States Bureau of Reclamation to compensate for spawning areas blocked by the Trinity River Project. The California Department of Fish and Game began operation of the permanent installation on May 15, 1963, with funds for operation and maintenance supplied by the Bureau.

This report describes the operation of the hatchery from July 1, 1963, through June 30, 1964.

### KING SALMON MAINTENANCE PROGRAM

#### History of the 1963 Salmon Run

The fish ladder constructed to pass fish around the weir at the former Lewiston Trapping Facilities was completed on September 27. King salmon began entering the hatchery on September 30, and when the run ended on November 29, 6,735 fish had been trapped. There were 2,539 grilse; thus, 61 percent were male, including grilse, and 39 percent were female.

Of the 2,627 females that entered the trap, 2,409 or 91.7 percent were spawned, 195 or 7.5 percent died in the ponds without spawning, and 22 or .8 percent were too green when killed to be spawned successfully. The 2,409 females which were spawned successfully produced 8,045,200 eggs for an average of 3,339 eggs per female.

A heavy loss of eggs and fry from "white spot" occurred in January. The agent or organism causing this mortality was not determined.

#### Planting 1963 Brood Year King Salmon

From March through May, 1964, a total of 4,704,900 fingerlings was planted in the Trinity River at the hatchery. Of these, 80,000 of the first spawning, presumed to be spring-run, were marked by the removal of the right pectoral fin. The remaining 4,37,000 fingerlings are being held for release in October as yearlings.

### SILVER SALMON MAINTENANCE PROGRAM

#### History of the 1963 Salmon Run

Between October 22, and December 13, 1963, 83 silver salmon were trapped. There were 32 large males, 40 females, and 11 grilse; thus 51.8 percent were male, including grilse, and 48.2 percent were female.

Of the 40 females that entered the trap, 1 died in the ponds, and 39 were spawned. They produced 105,900 eggs for an average of 2,715 eggs per female.

In order to build up the run of silver salmon in the Trinity River, 986,000 eggs were received from Cedar Creek Hatchery.

At present, 691,000 silver salmon fingerlings are being held for release as yearlings in February or March of 1965. Of these, 50,000 yearlings will be released in the Eel River at the Cedar Creek Hatchery to compensate for the eggs received in January of 1964. The remaining yearlings will be released in the Trinity River at Lewiston.

#### STEELHEAD MAINTENANCE PROGRAM

##### History of the 1963-64 Steelhead Run

Steelhead started arriving at the hatchery with the salmon in October, 1963. By the time the run ended in December, 221 had been marked and returned to the river.

On February 21, 1964, steelhead again commenced to enter the trap. Very few of them were fish that had been trapped in the fall and returned to the river. Those that did not return probably spawned in the river or were caught. Since angling is not permitted for one and a half miles below the hatchery many of them probably spawned successfully. The total number of adult steelhead trapped from October 22, 1963, to June 23, 1964, was 894. This was about half as many fish as the year before.

About 961,000 eggs were taken from 306 females from February 25, to May 20, 1964; an average of 3,142 eggs per female. During April and May, 433,947 fingerlings were received from Cedar Creek Hatchery.

On June 30, 1964, there were 1,143,000 steelhead fingerlings on hand. Most of these will be released as yearlings in February and March of 1965.

#### Planting 1963 Brood Year Steelhead

From March 24, through April 10, 698,000 yearling steelhead were planted in the Trinity River.

#### BROWN TROUT MAINTENANCE PROGRAM

##### History of the 1963 Brown Trout Run

Between September 30, and November 11, 1963, 34 brown trout were trapped. Between November 19, 1963 and January 3, 1964, approximately 58,000 eggs were taken from 22 females. On June 30, 1964, there were 49,500 fingerling brown trout on hand. They will be released as yearlings in January 1965.

Brown trout taken in June and July appeared to be sea-run as they were very silvery and resembled steelhead trout that have recently entered the river from the ocean. To determine whether the brown trout taken at Lewiston could have spent part of their life in the ocean, scale samples were taken from 8 female fish.

These scales were read by D. P. Borgeson, of the Dept's. Sacramento Field Station. Indications were that 5 of these fish had spent from 2 to 3 years in the ocean. However, he suggested that this ocean type growth could have been acquired in very fertile Klamath River, to which the Trinity River is a tributary.

## WATER TREATMENT EXPERIMENT

An outbreak of "white spot" caused an almost complete loss of steelhead trout fry shortly after the hatchery began operation in 1963. As soon as the fry stage was passed, mortalities dropped to normal. Water analysis at the time indicated a build-up of heavy metals in the water as it passed through the hatchery. A subsequent analysis showed that whatever was causing it had washed out or been corrected. However, the heavy metal content of the water entering the hatchery intake from Lewiston Reservoir still showed traces of heavy metals.

Eggs taken about half way through the king salmon spawning season were affected by white spot in January 1964. King salmon eggs hatched in troughs after this period, brown trout, and silver salmon eggs were unaffected.

White spot is not completely understood. It can be caused by many conditions. One of these is zinc and copper in the water supply. Indications were that this might have been the cause. The irregular loss pattern might be accounted for by fluctuations in the heavy metal content of the water.

Water treatment tests were conducted on steelhead eggs to see whether or not white spot was caused by heavy metals and whether it could be controlled. Two buffering tests were started on March 19, 1964, using bicarbonate of soda and calcium chloride. Steelhead trout eggs were incubated in water to which solutions of these chemicals were added. In another experiment, water was passed through a water softener before entering the incubator.

No white spot appeared in the treated eggs or in the controls. Whether or not these measures would have been effective could not be determined. However, water analysis showed that they had little or no effect on the heavy metal content of the water. On the contrary, they appeared to be most effective on minerals believed to be beneficial to egg development. -

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APPENDIX

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## APPENDIX

Table A-1. Yearly Comparison of Fish Trapped at Lewiston. Compares the number of fish by species trapped at the Lewiston Fish Trapping Facilities and at the Trinity River Hatchery, from September 29, 1958, through June 30, 1964.

Table A-2. Chart of Operation. Enumerates details of each activity.

Table A-3 through A-14. Weather, Water and Fish Data Report. Summarizes daily air and water temperatures, weather conditions, river flow, and number of fish by species trapped at the Trinity River Hatchery.

TABLE A-1

Yearly Comparison of Fish Trapped at Lewiston  
September 29, 1958 through June 30, 1964

Species	Sept. 29, 1958 through June 30, 1959	July 1, 1959 through June 30, 1960	July 1, 1960 through June 30, 1961	July 1, 1961 through June 30, 1962	July 1, 1962 through June 30, 1963	July 1, 1963 through June 30, 1964
<b>King Salmon</b>						
Male	1,269	1,716	1,493	885	1,308	1,569
Female	1,744	2,833	1,287	1,613	1,608	2,627
Total Adults	3,013	4,549	2,780	2,498	2,916	4,196
Grilse	878	2,701	4,130	2,899	6,535	2,539
Totals	3,891	7,250	6,910	5,397	9,451	6,735
<b>Silver Salmon</b>						
Male	240	49	84	158	7	32
Female	343	44	54	160	0	40
Total Adults	583	93	138	318	7	72
Grilse	33	26	70	37	9	11
Totals	616	119	208	355	16	83
<b>Steelhead Trout</b>						
Adults	2,880	2,071	3,526	3,243	1,687	894
<b>Brown Trout</b>						
Adults	80	52	82	35	49	34

TABLE A-2

Chart of Operation  
Trinity River Salmon and Steelhead Hatchery  
1963-1964

Species	Adult fish trapped	Females spawned	Eggs taken	Eggs received by transfer	Egg loss	Fingerlings received by transfer	Fish loss	Fingerlings planted	Yearlings planted	Fish on hand June 30, 1964
<b>King Salmon</b>										
Male	1,571									
Female	2,629									
Grilse	2,540									
<b>Totals</b>	6,740 <sup>1/</sup>	2,409	8,045,200		847,800		2,055,500	4,704,900		437,000 <sup>2/</sup>
<b>Silver Salmon</b>										
				<u>Eel River</u>						
Male	32									
Female	40									
Grilse	11									
<b>Totals</b>	83	39	105,900	986,000	156,000		244,900			691,000 <sup>2/</sup>
<b>Steelhead Trout</b>										
1964	894	306	961,600		73,600	<u>Eel River</u> 433,947	178,947			1,143,000 <sup>3/</sup>
1963	On hand July 1, 1963 630,500 <sup>2/</sup>					<u>American River</u> 201,972	144,472		688,000	0
<b>Brown Trout</b>	34	22	58,100		5,200		3,400			49,500 <sup>2/</sup>

<sup>1/</sup> Includes five spring-run king salmon trapped from June 15, to June 23, 1964.

<sup>2/</sup> 1963 Year Class

<sup>3/</sup> 1964 Year Class



TAL A-3  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
July 1963

Temperature (degrees F.)						July 1907		Fish Trapped		
Air		Water		Weather	Flow of Trinity River at Lewiston (c.f.s.) <sup>1/</sup>	King Salmon	Silver Salmon	Steelhead		
Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	Trout
Date										
1	79	39	68	64	Clear	150				
2	79	40	67	65	Clear	148				
3	76	40	67	65	Clear	148				
4	71	53	66	64	Cloudy					
5	77	45	63	62	Cloudy	150				
6	78	56	61	61	Cloudy					
7	73	45	60	60	Cloudy					
8	71	37	61	58	Clear	138				
9	80	41	61	57	Clear	168				
10	87	45	60	57	Clear	173				
11	86	44	60	56	Clear	168				
12	93	46	59	55	Clear	170				
13	99	48	60	56	Clear					
14	99	48	59	54	Clear					
15	91	45	59	54	Clear	160				
16	89	45	57	52	Clear	163				
17	81	45	57	52	Clear	163				
18	83	43	56	51	Clear	168				
19	89	41	56	52	Clear	168				
20	87	47	56	53	Clear					
21	88	44	56	53	Clear					
22	87	42	56	51	Clear	160				
23	87	45	57	54	Cloudy	178				
24	85	45	54	50	Clear	178				
25	80	41	58	51	Clear	170				
26	86	44	56	53	Clear	184				
27	92	46	56	52	Clear					
28	97	48	56	52	Clear					
29	91	46	55	52	Clear	184				
30	90	44	57	52	Clear	184				
31	93	43	57	52	Clear	182				
Totals										

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-4  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
August 1963

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <sup>1/</sup>	Fish Trapped				
	Air		Water				King Salmon		Silver Salmon		Steelhead Trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	
1	90	43	59	52	Clear	179					
2	94	43	57	53	Clear	179					
3	88	44	58	52	Clear						
4	86	45	55	50	Clear						
5	92	44	57	51	Clear	182					
6	95	48	57	51	Clear	177					
7	96	49	55	53	Clear	177					
8	100	60	53	53	Rain	182					
9	80	62	52	50	Rain	179					
10	81	50	54	51	Cloudy						
11	90	53	55	51	Clear						
12	91	50	54	51	Clear	169					
13	90	45	56	53	Clear	179					
14	89	42	55	50	Clear	182					
15	90	42	55	51	Clear	169					
16	94	45	56	53	Clear	163					
17	95	46	52	50	Clear						
18			51	49	Clear						
19	90	46	52	49	Clear	177					
20	81	41	52	49	Clear	177					
21	83	42	55	49	Clear	177					
22	85	43	55	52	Cloudy	177					
23	82	48	64	53	Cloudy	177					
24	71	45	56	52	Cloudy						
25	77	42	56	52	Clear						
26	82	39	54	52	Clear	180					
27	83	43	54	50	Clear	180					
28	68	44	54	50	Clear	182					
29	91	45	54	50	Clear	187					
30	88	49	54	50	Cloudy	187					
31	86	55	54	50	Clear						
Totals											

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-5  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
September 1963

September 1963										
Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <u>1/</u>	Fish Trapped			
	Air		Water				King Salmon		Silver Salmon	Steelhead
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse
1	87	44	52	49	Clear					
2	85	46	53	49	Clear					
3	90	42	55	50	Clear	187				
4	95	44	54	51	Clear	187				
5	96	52	52	52	Cloudy	187				
6	80	52	53	50	Cloudy	187				
7	89	51	54	50	Clear					
8	94	51	54	52	Clear					
9	95	49	52	52	Clear	187				
10	86	46	53	50	Clear	187				
11	84	45	53	50	Cloudy	184				
12	81	50	53	52	Cloudy	184				
13	76	45	53	50	Cloudy	184				
14	82	44	53	50	Clear					
15	86	59	51	50	Cloudy					
16	72	35	52	49	Cloudy	184				
17	71	40	50	50	Cloudy	187				
18	63	39	52	48	Cloudy	190				
19	80	42	51	47	Cloudy	187				
20	88	44	53	48	Cloudy	182				
21	81	45	51	48	Cloudy					
22	78	47	51	50	Rain					
23	73	37	49	47	Clear	182				
24	81	34	50	47	Clear	184				
25	90	35	52	47	Clear	182				
26	92	41	53	48	Clear	182				
27	97	50	52	48	Cloudy	182				
28	98	50	51	48	Clear					
29	96	43	52	48	Clear					
30	95	42	52	49	Clear		293	148		
Totals							293	148		

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-6  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
October 1963

October 1903											
Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.)		Fish Trapped			
	Air		Water			King Salmon	Silver Salmon	Steelhead Trout			
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse		
1	89	39	52	48	Clear	267	72	62			
2	94	42	53	49	Clear	264					1
3	92	38	52	48	Clear	261	55	49			1
4	87	37	49	48	Cloudy	255	53	25			
5	86	38	48	48	Cloudy						
6	70	39	48	48	Rain						2
7	72	39	50	48	Clear	255	215	55			
8	76	43	49	48	Cloudy	255	34	29			
9	73	46	48	48	Rain	255	65	12			2
10	63	46	50	49	Rain	252	149	57			5
11	64	43	47	47	Rain	255	155	60			
12	65	49	48	46	Clear						
13	68	47	48	48	Cloudy						
14	69	46	50	48	Cloudy	273	483	129			5
15	68	48	49	48	Rain	276	228	124			4
16	56	46	49	48	Clear	279	211	111			6
17	68	47	49	47	Clear	279	115	56			8
18	71	49	51	49	Clear	285	150	81			
19	74	51	48	47	Clear						4
20	58	50	43	47	Rain		421	188			4
21	65	51	49	47	Cloudy	288	190	105			4
22	62	52	48	48	Rain	298	183	110			3
23	64	40	46	45	Cloudy	301	116	86	1		2
24	55	39	46	45	Rain	298	119	99	1		3
25	64	39	47	46	Cloudy	301	127	110			4
26	55	40	47	45	Fog						
27	60	39	47	45	Cloudy						6
28	69	41	47	45	Cloudy	325	253	256			
29	68	47	47	46	Cloudy	329	50	35			
30	64	36	47	45	Cloudy	325	88	85			2
31	66	34	46	45	Clear	350	65	71			
Totals							3,597	1,995		2	62

1/ From U. S. Bureau of Reclamation Records.

TABLE A-7  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report

November 1963

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.)		King Salmon		Fish Trapped	
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	Silver Salmon	Steelhead Trout
1	65	33	47	45	Clear	354	55	93			
2	62	46	47	45	Cloudy						
3	52	46	45	44	Rain						
4	61	43	45	45	Cloudy	362	112	102	7		3
5	56	44	45	45	Rain	354					
6	52	41	45	45	Rain	366					
7	48	39	45	45	Rain	358	55	82	11	1	7
8	49	43	45	45	Rain	354	22	54	4	3	3
9	66	49	45	44	Cloudy						
10	60	46	45	44	Cloudy						
11	63	43	45	44	Cloudy						
12	53	43	45	45	Rain	321	23	32	16	2	32
13	59	39	45	45	Rain	354	3	9	1	1	14
14	56	39	45	45	Rain	370					
15	55	39	45	44	Cloudy	545	10	11	5	1	30
16	55	35	44	43	Clear						
17	51	35	43	43	Cloudy						
18	58	42	45	43	Cloudy	354					
19	49	38	43	43	Rain	358	19	6	10		32
20	50	39	43	43	Cloudy	370					
21	47	29	43	43	Clear	362					
22	39	31	43	43	Rain	358	5	5	10	1	26
23	38	34	43	42	Show						
24	43	36	42	42	Cloudy						
25	50	37	42	42	Cloudy						
26	56	37	42	41	Cloudy	358			3		3
27	58	44	42	41	Cloudy	358					
28	45	34	42	40	Cloudy						
29	62	35	43	42	Cloudy	354	2	2	1		4
30	49	36	42	41	Fog						
Totals						306	396	68	9		154

1/ From U. S. Bureau of Reclamation Records.

TAB. A-8

Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
December 1963

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <sup>1/</sup>	Fish Trapped <sup>1</sup>		Steelhead Trout
	Air	Water	Maximum	Minimum			King Salmon Adults Grilse	Silver Salmon Adults Grilse	
1	48	35	42	41	Fog				
2	49	34	42	41	Fog	354			
3	47	35	42	41	Fog	358			
4	42	34	42	41	Fog	354			
5	49	35	42	41	Clear	354			
6	58	39	42	42	Clear	350		2	4
7	46	31	42	41	Fog				
8	42	33	42	41	Rain				
9	49	33	42	41	Clear	275			
10	50	32	42	41	Clear	275			
11	46	26	41	41	Clear	275			
12	39	28	41	41	Clear	275			
13	45	31	41	41	Clear	275		2	1
14	42	34	41	40	Clear				
15	42	35	41	40	Cloudy				
16	44	35	40	40	Fog	350			
17	50	34	41	40	Clear	354			
18	47	36	41	41	Cloudy	350			
19	48	40	42	41	Rain	350			
20	49	38	41	41	Rain	350			
21	44	34	42	41	Cloudy				
22	50	35	45	44	Clear				
23	50	36	44	44	Clear	358			
24	53	33	44	44	Cloudy	354			
25	47	38	45	44	Cloudy				
26	45	40	45	44	Rain	354			
27	46	44	45	44	Rain	362			
28	52	45	45	44	Rain				
29	50	44	46	45	Rain				
30	58	42	45	45	Clear	366			
31	49	39	46	46	Cloudy	354			
Totals								4	5

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE --9  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
January 1964

January 1964									
Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <sup>1/</sup>	Fish Trapped		
	Air		Water				King Salmon	Silver Salmon	Steelhead
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Trout
1	44	38	45	45	Rain				
2	53	34	45	45	Clear	350			
3	40	34	45	45	Cloudy	350			
4	42	33	45	45	Clear				
5	42	30	44	44	Clear				
6	44	32	44	44	Rain	354			
7	54	31	44	44	Clear	350			
8	46	33	44	44	Clear	350			
9	45	32	44	44	Snow	354			
10	48	29	43	43	Clear	358			
11	44	24	43	42	Clear				
12	54	26	44	43	Clear				
13	53	26	43	43	Snow	354			
14	40	30	43	43	Snow	354			
15	40	33	43	43	Clear	354			
16	43	33	43	43	Rain	358			
17	40	34	44	43	Rain	358			
18	41	34	44	44	Snow				
19	52	35	44	44	Rain				
20	42	40	44	44	Rain	545			
21	38	31	44	44	Snow	279			
22	42	29	44	44	Snow	238			
23	34	28	43	43	Snow	370			
24	34	32	43	43	Snow	362			
25	39	34	43	43	Cloudy				
26	44	35	43	43	Fog				
27	50	35	43	43	Clear	362			
28	48	37	44	44	Clear	362			
29	45	36	44	44	Rain	358			
30	51	35	44	44	Clear	354			
31	49	35	44	43	Rain	361			

Totals

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-10  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
February 1964

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <u>1/</u>	Fish Trapped				
	Air		Water				King Salmon		Silver Salmon		Steelhead Trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	
1	58	40	44	43	Fog						
2	62	38	45	43	Clear						
3	62	28	45	44	Clear	362					
4	62	33	46	45	Clear	362					
5	54	35	46	45	Clear	343					
6	60	28	46	45	Clear	334					
7	63	26	45	44	Clear	334					
8	57	32	45	44	Cloudy						
9	65	34	46	45	Clear						
10	60	33	45	45	Clear	331					
11	58	27	45	45	Clear	325					
12	58	23	45	44	Clear	322					
13	53	24	44	44	Clear	322					
14	58	22	45	44	Clear	325					
15	49	32	44	44	Clear						
16	55	28	45	44	Clear						
17	62	27	44	44	Clear	325					
18	68	32	45	44	Clear	322					
19	70	30	45	44	Clear	325					
20	70	29	45	44	Clear	325					
21	73	28	46	44	Clear					77	
22	70	26	47	45	Clear						
23	70	29	46	45	Clear						
24	60	32	46	45	Clear	325					
25	59	29	48	45	Clear	328				23	
26	68	22	47	45	Clear	325					
27	68	24	46	45	Clear	325					
28	58	27	45	45	Rain	325					
29	58	27	45	45	Clear						
Totals										100	

<sup>1/</sup> From U. S. Bureau of Reclamation Records.



TABLE A-11  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
March 1964

March 1904											
Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <sup>1/</sup>	Fish Trapped			Steelhead Trout	
	Air		Water				King Salmon		Silver Salmon		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults		Grilse
1	48	36	45	45	Snow						
2	50	29	45	45	Clear	322					
3	62	28	45	45	Clear	322					
4	60	36	45	45	Cloudy	319					
5	49	38	45	45	Cloudy	318				41	
6	50	32	45	45	Cloudy	318					
7	54	28	45	45	Clear						
8	62	27	45	45	Clear						
9	64	24	45	45	Clear	318					
10	60	25	45	45	Clear	318					
11	56	34	45	45	Snow	315				39	
12	42	32	45	45	Rain	315				19	
13	55	31	46	46	Clear	318				27	
14	65	33	46	45	Cloudy						
15	66	36	47	46	Clear						
16	78	29	47	46	Clear	318				23	
17	75	33	48	46	Clear	315				24	
18	68	30	49	46	Clear	315				25	
19	74	28	49	47	Clear	315				21	
20	59	30	48	48	Clear	315				16	
21	49	32	47	47	Rain						
22	42	29	46	46	Snow						
23	53	31	46	46	Cloudy	315				40	
24	55	29	47	46	Cloudy	315				10	
25	62	30	47	46	Clear	312				14	
26	69	32	48	46	Clear	318				18	
27	76	33	48	46	Clear	326				15	
28	75	32	50	47	Clear						
29	74	33	50	47	Cloudy						
30	74	38	50	48	Clear	336				73	
31	71	39	49	48	Rain	347				17	
Totals										422	

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-12  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
April 1964

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) 1/	Fish Trapped		Steelhead Trout	
	Air		Water				King Salmon Adults	Grilse		
	Maximum	Minimum	Maximum	Minimum						
1	54	43	47	48	Cloudy	329			9	
2	55	28	46	46	Cloudy	228			6	
3	71	26	46	48	Clear	281			16	
4	74	33	46	46	Clear					
5	69	31	46	46	Clear					
6	68	28	46	46	Clear	285			25	
7	74	32	46	48	Clear	264				
8	77	38	46	50	Clear	233			18	
9	64	34	47	48	Clear	235			2	
10	76	31	46	47	Clear	233				
11	67	37	46	47	Clear					
12	77	32	46	47	Clear					
13	83	33	46	49	Clear	224				
14	88	35	47	48	Clear	205			15	
15	87	37	47	48	Clear	179				
16	87	37	47	48	Clear	139				
17	70	28	47	47	Clear	154				
18	72	33	46	49	Clear					
19	74	32	46	47	Clear					
20	69	39	47	50	Cloudy	154				
21	76	37	47	50	Clear	154				
22	55	36	48	48	Cloudy	157				
23	57	30	47	48	Rain	159				
24	59	28	46	48	Rain					
25	72	34	46	48	Clear					
26	73	36	46	49	Clear					
27	85	38	47	49	Clear	142			23	
28	87	42	49	52	Cloudy	157				
29	67	42	48	50	Clear	159			14	
30	58	34	48	50	Cloudy					
Totals										128

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-13  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
May 1964

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.) <u>1</u> /	Fish Trapped			
	Air		Water				King Salmon		Silver Salmon	Steelhead
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse
1	54	38	49	48	Cloudy					
2	56	29	48	48	Rain					
3	54	36	48	47	Rain					
4	62	40	47	47	Cloudy	172				
5	60	37	47	47	Cloudy	169				
6	65	28	48	47	Clear	164				
7	72	34	49	48	Clear	161				9
8	80	35	50	48	Clear	157				
9	86	41	50	49	Clear					
10	81	42	50	50	Clear					
11	88	41	50	49	Clear	154				
12	87	42	51	50	Clear	159				
13	81	41	51	50	Clear	159				
14	84	44	52	50	Clear	159				
15	80	39	52	50	Clear	157				
16	62	45	52	51	Rain					
17	83	45	52	50	Cloudy					
18	77	43	51	51	Cloudy	154				
19	78	47	50	50	Cloudy					
20	84	44	53	50	Clear					
21	79	40	53	51	Clear					
22	85	41	53	51	Clear					
23	84	43	52	52	Clear					
24	78	50	53	52	Clear					
25	82	47	52	52	Clear					
26	68	56	52	52	Cloudy					
27	62	46	52	50	Rain					
28	74	51	51	50	Cloudy					
29	80	50	51	50	Clear					
30	89	47	51	50	Clear					
31	82	49	52	48	Cloudy					

Totals

9

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

TABLE A-14  
Trinity River Salmon and Steelhead Hatchery  
Weather, Water and Fish Data Report  
June 1964

June 1964											
Temperature (degrees F.)					Weather	Flow of Trinity River at Lewiston (c.f.s.) <sup>1/</sup>	Fish Trapped				
Air		Water		King Salmon			Silver Salmon		Steelhead Trout		
Date	Maximum	Minimum	Maximum	Minimum			Adults	Grilse		Adults	Grilse
1	79	46	50	49	Cloudy						
2	84	48	50	49	Cloudy						
3	82	48	52	48	Cloudy						
4	64	49	49	48	Rain						
5	74	56	50	48	Rain						
6	66	54	49	47	Rain	156					
7	70	48	48	47	Cloudy						
8	52	47	48	48	Rain	156					
9	52	48	48	48	Rain	156					
10	71	49	48	47	Cloudy	154					
11	83	48	48	47	Cloudy	152					
12	88	48	50	50	Cloudy	149					
13	92	49	52	51	Clear						
14	90	56	52	51	Clear						
15	88	53	52	51	Cloudy	147	3			12	
16	78	46	52	52	Cloudy	147					
17	76	46	52	50	Cloudy	149					
18	86	48	50	49	Cloudy	149					
19	82	42	51	48	Cloudy	154					
20	84	55	52	48	Cloudy						
21	86	55	53	51	Clear						
22	98	46	52	51	Clear						
23	103	50	52	51	Clear	156	1	1		2	
24	100	52	52	51	Clear	149					
25	98	50	53	50	Clear	152					
26	85	52	52	49	Clear	154					
27	84	40	52	50	Clear						
28	86	44	53	50	Clear						
29	84	48	53	51	Clear						
30	101	47	53	50	Clear						
Totals							4	1		14	
Grand totals 7/1/63 through 6/30/64							4200	2540	72	11	894

<sup>1/</sup> From U. S. Bureau of Reclamation Records.

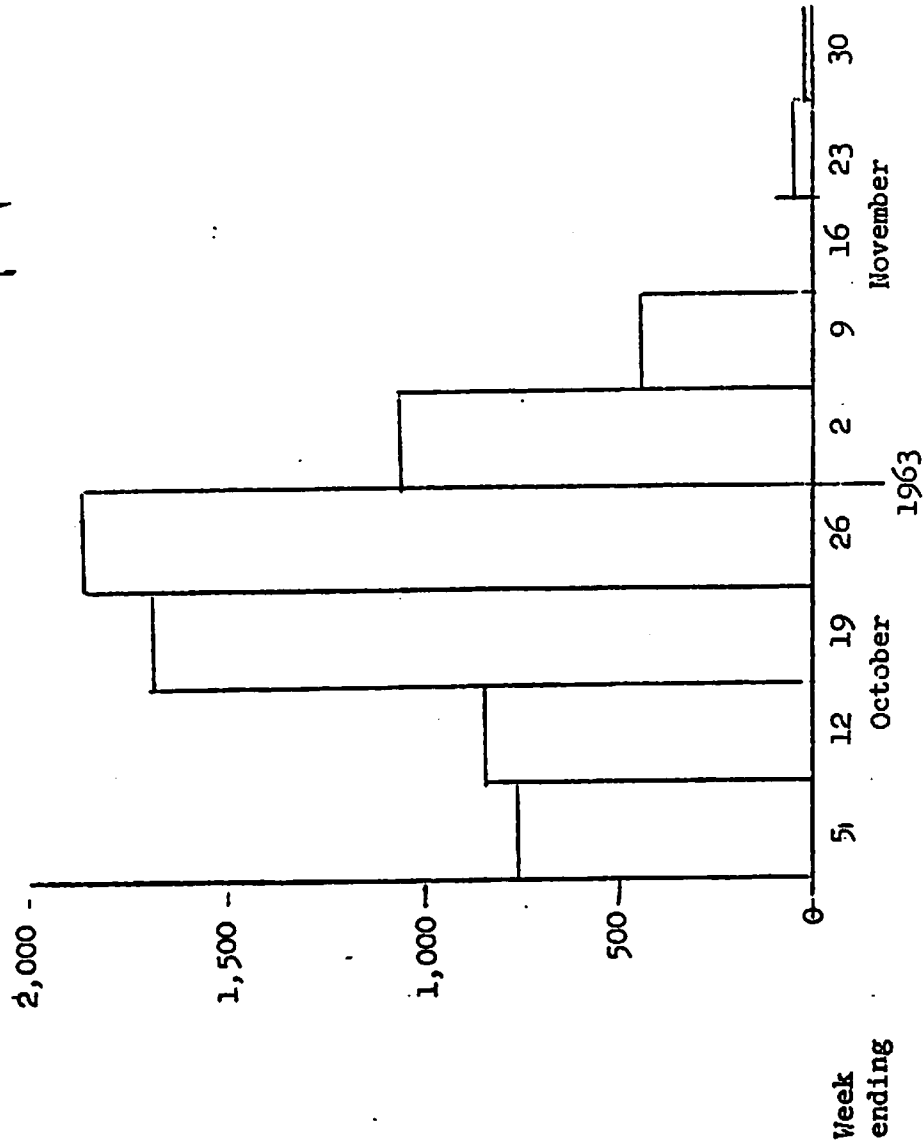


FIGURE A-1. King salmon trapped at Trinity River Fish Hatchery. Weekly fish count September 30, 1963, to November 29, 1963.

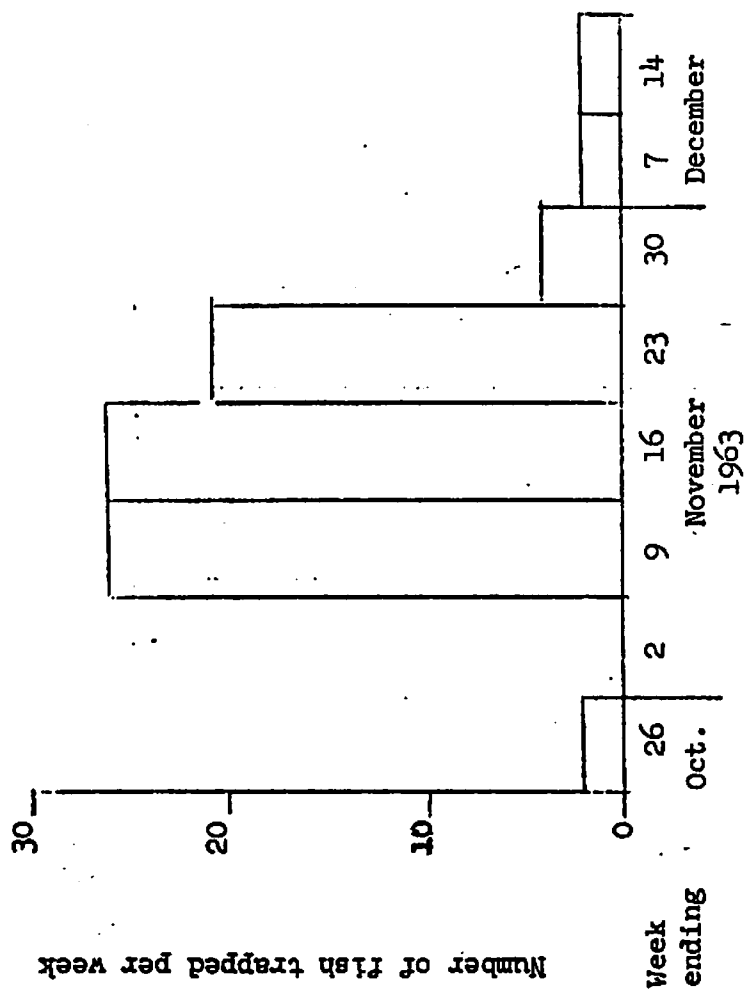


FIGURE A-2. Silver salmon trapped at Trinity River Fish Hatchery.  
Weekly fish count October 22, 1963, to December 13, 1963.