

The Resources Agency of California
Department of Fish and Game

REF 90077

ANNUAL REPORT
TRINITY RIVER SALMON AND STEELHEAD HATCHERY
SEVENTH YEAR OF OPERATION 1964-65 1/

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WSP

SUMMARY

King salmon, Oncorhynchus tshawytscha, started entering the hatchery on September 14, 1964. The run ended on November 25. The silver salmon, Oncorhynchus kisutch, run overlapped the king salmon run, beginning on October 28, and ending on December 23. Steelhead trout, Salmo gairdnerii gairdnerii, began entering the hatchery on September 15, 1964, and continued through May 8, 1965. A few brown trout, Salmo trutta, entered the hatchery from September 14 to January 29, 1965. A few king salmon and steelhead were trapped June 15, 1964 to July 10. As these fish rapidly deteriorated, trapping was discontinued until September.

Production data are as follows:

Species	Number adults	Number females spawned	Number eggs taken	Number fingerlings planted	Number yearlings planted	On hand June 30, 1965
King salmon	5,016	2,849	9,370,600	7,471,300	300,000	261,900
Silver salmon	48	25	69,200		624,600	39,250
Steelhead trout	6,941	3,879	14,504,100		590,100	12,491,600
Brown Trout	145	64	163,600		28,500	77,400

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1/ Submitted December, 1965
Inland Fisheries Administrative Report No. 66-1

INTRODUCTION

This is the seventh consecutive fiscal year report covering operation of the Trinity River Salmon and Steelhead Hatchery, located near Lewiston, Trinity County. Copies of the 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.

Operation of the hatchery from July 1, 1964, through June 30, 1965 is described in this report.

KING SALMON MAINTENANCE PROGRAM

History of the 1964 Salmon Run

The first king salmon of the 1964 run began to enter the hatchery fish ladder on June 15. Four adults and one grilse were taken during the month of June, eight adults and three grilse were trapped to July 10. At this time trapping was discontinued as the fish deteriorated rapidly and it was apparent that these early fish would not survive the confinement of the holding ponds. On September 14, king salmon trapping was resumed and when the run ended on November 25, 6,303 fish had been trapped. There were 1,287 grilse; thus 52 percent were male, including grilse, and 48 percent were female. Average size of males was 28 inches fork length, weight 9 pounds. Females were 27 inches fork length, weight 9 pounds.

Of the 3,042 females that entered the trap, 2,849 or 93.7 percent were spawned, 167 or 5.5 percent died in the ponds without spawning, and 26 or .9 percent were too green when killed to be spawned successfully. The 2,849 females which were spawned produced 9,370,600 eggs for an average of 3,289 eggs per female.

Egg loss was confined to infertile eggs, fingerling loss due to "gas bubble" disease was 16 percent of the total hatched.

Planting 1963 Brood Year King Salmon

In October, 1964, 300,000 yearling king salmon averaging 1.8 fish per ounce of the 1963 brood year were released in the Trinity River at the hatchery. These fish were in poor condition from what appeared to be a deficient diet. Therefore, they were not marked as planned.

Planting 1964 Brood Year King Salmon

From March through May, 1965, a total of 7,471,300 fingerlings was planted in the Trinity River at the hatchery. Among these, 100,000 of the first spawning, presumed to be spring-run, were marked by clipping the outer portion of the left maxillary. The remaining 261,900 fingerlings are being held for release in October, 1965, as yearlings.

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SILVER SALMON MAINTENANCE PROGRAM

History of the 1964 Salmon Run

Between October 28, and December 23, 1964, 48 silver salmon were trapped. There were 23 large males, 25 females, and 2 grilse; thus 50 percent were male, including grilse, and 50 percent were female. All of the females were successfully spawned. They produced 69,200 eggs for an average of 2,768 eggs per female.

At present 39,250 silver salmon fingerlings are being held for release as yearlings in February or March, 1966.

Planting 1963 Brood Year Silver Salmon

In March, 1965, 20,400 Eel River silver salmon were planted in Hayfork River, a tributary to the South Fork Trinity River. In April, 53,100 Trinity River silver salmon yearlings were released in the Trinity River at the hatchery. Also, 501,100 ²/ Eel River silver salmon yearlings of which 205,946 were marked by the removal of the left ventral fin, were released in the Trinity River at the hatchery. In May, 50,000 Eel River silver salmon yearlings were transported from the Trinity River Hatchery and released in Salmon, Redwood, and Sproul creeks, tributaries to the Eel River. This was to compensate for Eel River eggs received in January, 1964, from the Cedar Creek Hatchery.

STEELHEAD MAINTENANCE PROGRAM

History of the 1964-65 Steelhead Run

Adult steelhead trout are found in the Trinity River during the entire year. During the first week in July, 1964, seven steelhead were trapped to determine whether they could be held in the holding ponds during the summer. These fish rapidly deteriorated so trapping was discontinued until September 15, when steelhead entered the hatchery with the salmon.

Fish continued to enter the trap until December 31. 3,663 fall steelhead were trapped and held in the holding ponds until spawning in the spring. Surprisingly light losses occurred in these until spawning was well advanced.

On January 29, 1965, steelhead again began to enter the trap and continued to May 3, at which time the trap was closed. A total of 6,941 steelhead was trapped from July 1, 1964 to May 3, 1965. This was approximately three times the previous six years average.

About 14,504,000 eggs were taken from 3,879 females from February 3 to May 6, 1965; an average of 3,739 eggs per female.

On March 6, 45,500 steelhead eggs were spawned and immediately transported to the fish hatchery at Humboldt State College. These eggs were assigned to students training in fisheries management. The resulting fingerlings will be released in the Trinity River near Willow Creek.

²/ This is an estimate as many of these fish had previously escaped over the rotary screens.

On June 30, 1965, there were 12,491,600 steelhead fingerlings on hand. Most of these will be released as fingerlings in early Fall, 1965. A balance of about 1,500,000 will be held to yearlings for release in May, 1966, and as two-year olds in May 1967.

Planting 1964 Brood Year Steelhead

On March 24, 20,100 yearling steelhead were planted in Hayfork River, a tributary to the South Fork Trinity River. From April 5 through April 7, 570,000 yearling steelhead were planted in the Trinity River at the hatchery.

BROWN TROUT MAINTENANCE PROGRAM

History of the 1964 Brown Trout Program

Between September 14 and January 29, 1965, 145 brown trout were trapped. Between November 12, 1964 and January 22, 1965, approximately 163,000 eggs were taken from 64 females. On June 30, 1965, there were 77,400 fingerling brown trout on hand. They will be released as yearlings in January 1966.

Planting 1963 Brood Year Brown Trout

On April 23, 1965, 28,500 yearling brown trout were planted in the Trinity River at the hatchery.

WATER TREATMENT AND INVESTIGATION

Since January 1964, no outbreaks of "white spot" disease has occurred in the hatchery. Beginning with the 1964 steelhead hatching season, all water serving the eggs in the incubator trays has passed through a tray containing crushed neutralite, a form of marble. This may or may not have prevented "white spot".

Heavy losses still occur from "gas bubble" disease. In this disorder, ingested gases expand within the organs of the fingerling fish and produce ruptures. Several attempts were made to remove the excess gases by various experimental aerating devices, but none were successful. Fish held in water that was taken from the supply line above the fountain aerator did not develop signs of "gas bubble" disease.

From early 1964 to June 1965, Mr. William Silvey, Chemist for the Quality of Water Branch of the United States Geological Survey, was retained to monitor the hatchery water supply. He was instrumental in introducing the use of the neutralite water treatment for the incubators. However, he was not able to conclusively determine the reason for the excess gases which appear to be the cause of "gas bubble" disease.

APPENDIX

TABLE A-1

Yearly Comparison of Fish Trapped at Lewiston
July 1, 1959, through June 30, 1965

Species	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	July 1, 1964 through June 30, 1965
King Salmon						
Male	1,716	1,493	885	1,308	1,569	1,974
Female	2,833	1,287	1,613	1,608	2,627	3,042
Total Adults	4,549	2,780	2,498	2,916	4,196	5,016
Grilse	2,701	4,130	2,899	6,535	2,539	1,287
Totals	7,250	6,910	5,397	9,451	6,735	6,303
Silver Salmon						
Male	49	84	158	7	32	23
Female	44	54	160	0	40	25
Total Adults	93	138	318	7	72	48
Grilse	26	70	37	9	11	2
Totals	119	208	355	16	83	50
Steelhead Trout						
Adults	2,071	3,526	3,243	1,687	894	6,941
Brown Trout						
Adults	52	82	35	49	34	145

TABLE A-2
Chart of Operation
Trinity River Salmon and Steelhead Hatchery
1964-65

Species	Adult fish trapped	Females spawned	Eggs taken	Eggs transferred	Egg loss	Fish loss	Fingerlings planted	Yearlings planted	Fish on hand June 30, 1965
King Salmon									
Male	1,974								
Female	3,042								
Grilse	1,207								
Totals	6,303	2,849	9,370,600		286,100	1,489,300	7,471,300	300,000	261,900
Silver Salmon									
Male	23								
Female	25								
Grilse	2								
Totals	50	25	69,200		13,800	82,500		624,600 <u>1/</u>	39,250
Steelhead	6,941	3,879	14,504,100	45,500 <u>2/</u>	922,100	1,597,800		590,100	12,491,600
Brown Trout	145	64	163,600		33,400	73,800		28,500	77,400

1/ This total contains a computed number of fish which escaped over the rotary screens.

2/ To Humboldt State College - Fingerlings to be planted in Trinity River.

TABLE A-3
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
July 1964

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped		
	Air		Water				King salmon Adults	Grilse	Silver salmon Adults
	Maximum	Minimum	Maximum	Minimum					
1	84	50	54	52	Cloudy	152	5	2	3
2	84	54	52	50	Cloudy	152			
3	89	47	55	52	Clear	152			
4	80	53	54	51	Rain	152			
5	90	44	53	51	Clear	153			
6	98	49	52	50	Clear	152			
7	96	54	53	50	Clear	152			
8	82	53	52	50	Cloudy	153			
9	94	47	53	50	Clear	153			
10	99	48	53	51	Clear	153	3	1	4
11	101	41	54	51	Clear	153			
12	103	42	53	50	Clear	153			
13	98	61	57	52	Cloudy	153			
14	85	56	52	51	Cloudy	153			
15	98	54	51	50	Clear	153			
16	96	52	53	51	Clear	153			
17	98	56	53	50	Clear	153			
18	102	56	53	51	Clear	153			
19	104	52	53	51	Clear	153			
20	95	54	52	50	Clear	153			
21	94	54	54	50	Clear	154			
22	94	52	55	50	Clear	154			
23	104	52	53	50	Clear	154			
24	108	57	53	52	Clear	154			
25	106	60	53	52	Clear	154			
26	100	60	54	51	Clear	150			
27	102	62	53	51	Clear	150			
28	75	60	62	51	Cloudy	150			
29	96	59	52	52	Clear	150			
30	88	58	53	52	Clear	150			
31	86	47	53	52	Clear	150			
Totals							8	3	7

*From U. S. Bureau of Reclamation Records

TABLE A-4
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
August 1964

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	86	48	53	51	Clear	150					
2	86	48	53	51	Clear	154					
3	90	50	54	51	Clear	154					
4	94	51	52	52	Clear	154					
5	98	52	53	52	Clear	154					
6	97	54	53	52	Cloudy	154					
7	96	55	55	51	Clear	154					
8	95	58	55	52	Clear	154					
9	100	57	53	51	Clear	156					
10	98	58	52	51	Clear	156					
11	89	52	54	51	Clear	156					
12	94	52	53	51	Clear	156					
13	96	53	52	51	Clear	156					
14	96	54	53	51	Clear	156					
15	96	53	52	51	Clear	156					
16	96	49	52	50	Clear	156					
17	90	54	54	50	Clear	156					
18	90	52	53	50	Clear	156					
19	92	49	54	51	Clear	156					
20	99	54	50	50	Clear	156					
21	104	53	50	50	Clear	156					
22	105	56	52	50	Clear	156					
23	104	58	52	50	Clear	156					
24	99	53	51	50	Clear	156					
25	100	52	51	50	Clear	156					
26	92	52	51	49	Clear	156					
27	93	48	50	49	Clear	156					
28	82	50	50	49	Clear	156					
29	102	43	50	49	Clear	156					
30	84	48	49	49	Rain	156					
31	65	46	49	49	Rain	156					
Totals											

TABLE A-5
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
September 1964

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	62	47	49	49	Rain	156					
2	80	48	49	49	Cloudy	156					
3	89	43	50	49	Clear	156					
4	92	45	50	49	Clear	156					
5	88	42	50	48	Clear	156					
6	89	44	50	48	Clear	160					
7	80	46	50	47	Clear	160					
8	77	44	50	48	Cloudy	160					
9	82	42	50	48	Clear	160					
10	85	40	51	48	Clear	160					
11	87	40	51	48	Clear	160					
12	94	40	50	49	Clear	160					
13	88	47	52	49	Clear	160					
14	90	44	52	49	Clear	160	166				
15	94	42	52	48	Clear	160	132	2			4
16	88	42	49	48	Clear	160	33	4			3
17	80	52	48	48	Clear	160	40	3			2
18	88	41	48	48	Clear	160	52	2			
19	91	42	49	48	Clear	160					
20	76	46	48	48	Clear	160					
21	82	40	49	48	Clear	160	81	4			
22	95	46	49	48	Clear	160	111	10			2
23	98	49	49	48	Clear	160	76	6			1
24	101	51	49	49	Clear	160	40	4			1
25	97	45	49	48	Clear	160	71	7			1
26	84	44	49	48	Clear	160					
27	80	42	48	48	Clear	210					
28	80	40	49	48	Clear	210	115	17			2
29	86	39	48	48	Clear	210	70	9			2
30	84	41	48	47	Clear	210	48	6			1
Totals							1,035	74			19

*From U. S. Bureau of Reclamation Records

TABLE A-6
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
October 1964

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	84	41	43	47	Clear	205	48	13			1
2	83	40	48	47	Clear	205	49	10			2
3	95	41	48	47	Clear	202					
4	96	42	49	48	Clear	202					
5	83	49	49	48	Rain	202	141	18			4
6	90	46	50	48	Clear	202	44	16			7
7	80	53	49	48	Clear	202	107	25			12
8	82	41	49	48	Clear	202	84	25			5
9	82	40	49	48	Clear	205	52	16			11
10	86	40	49	48	Clear	205					
11	86	40	49	48	Clear	205					
12	83	40	49	48	Clear	205	425	76			26
13	80	43	49	47	Clear	205	88	28			15
14	81	40	49	47	Clear	202	112	30			11
15	73	43	49	48	Clear	205	47	19			5
16	74	41	49	48	Clear	208	108	35			16
17	77	30	49	46	Clear	208					
18	88	32	48	46	Clear	208	454	78			20
19	84	34	49	47	Clear	208	223	50			13
20	85	33	49	47	Clear	208	68	29			15
21	83	34	49	47	Clear	208	156	48			27
22	86	35	49	47	Clear	208	112	40			5
23	83	33	48	47	Clear	208	84	46			12
24	80	33	49	47	Clear	210					
25	68	38	48	47	Cloudy	208	416	90			10
26	64	40	48	47	Cloudy	208	205	67			20
27	53	50	46	46	Rain	208	59	26			9
28	57	50	46	46	Rain	208	150	53	1	1	27
29	58	50	47	47	Rain	208	62	40	1		10
30	66	50	47	47	Fair	205	93	41	1	1	39
31	61	46	47	47	Cloudy	205					
Totals							3,387	919	3	2	322

TABLE A-7
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
November 1964

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	57	50	47	47	Rain	236					
2	62	46	48	47	Fair	257	357	110	3		250
3	67	41	47	47	Clear	254					
4	62	42	47	47	Cloudy	254	112	51	1		302
5	70	45	48	47	Cloudy	251	30	15	1		115
6	67	37	48	47	Cloudy	254	18	13			219
7	65	40	47	47	Cloudy	254					
8	53	45	47	47	Rain	254					
9	55	47	47	47	Rain	254	49	52	3		354
10	49	37	46	46	Rain	257	3	13	1		230
11	39	38	46	46	Snow	257					
12	44	33	45	45	Snow	254	4	10	6		363
13	44	29	44	44	Cloudy	254	5	13	1		92
14	49	29	44	44	Cloudy	254					
15	51	22	44	43	Fair	254					
16	53	22	43	43	Fair	254	3	6	2		84
17	53	22	43	43	Fair	254					
18	55	23	44	43	Clear	254					
19	55	23	44	43	Clear	254	2	4	3		24
20	56	27	44	43	Clear	254					
21	54	26	43	43	Rain	254					
22	52	37	44	43	Cloudy	254					
23	50	40	44	44	Cloudy	254					
24	48	42	44	44	Rain	257					
25	52	44	45	44	Cloudy	257	3	4	7		46
26	43	48	45	44	Rain	257					
27	47	39	45	44	Rain	257					
28	44	39	45	44	Rain	260					
29	56	42	45	45	Rain	257					
30	46	43	45	45	Rain	257			8		270
Totals							536	291	36		2,349

*From U. S. Bureau of Reclamation Records

TABLE A-8
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
December 1964

Date	Temperature (degrees F.)					Flow of Trinity River at Lewiston (c.f.s.)*	Fished trapped		
	Air		Water		King salmon		Silver salmon	Steelhead trout	
	Maximum	Minimum	Maximum	Minimum	Adults Grilse		Adults Grilse		
1	45	44	45	45	Rain	227			
2	56	42	45	44	Rain	205			
3	51	34	45	43	Clear	205	3	154	
4	42	35	45	44	Rain	202			
5	54	38	46	44	Clear	202			
6	44	35	45	45	Cloudy	202			
7	40	26	45	44	Rain	205			
8	48	42	45	45	Rain	198			
9	54	47	46	45	Rain	210			
10	56	48	46	46	Rain	210	2	76	
11	52	46	45	45	Fair	208			
12	47	30	45	44	Cloudy	208			
13	46	28	44	44	Cloudy	208			
14	40	32	44	44	Rain	210			
15	48	36	44	44	Fair	210			
16	49	31	44	44	Clear	210			
17	43	26	44	43	Clear	212	3	14	
18	42	28	44	43	Snow	215			
19	43	33	43	43	Rain	215			
20	49	38	44	43	Rain	218			
21	50	44	44	43	Rain	233			
22	61	50	47	44	Rain	239			
23	61	52	46	46	Rain	221	1	267	
24	59	50	46	46	Rain	221			
25	54	48	47	46	Rain	218			
26	46	43	47	46	Rain	224			
27	38	34	45	44	Snow	218			
28	35	26	44	44	Snow	215		373	
29	43	30	46	44	Snow	218			
30	40	28	45	45	Snow	215		82	
31	40	20	44	44	Clear	218			
Totals							9	966	

* From U. S. Bureau of Reclamation Records.

TABLE A-9
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
January 1965

Date	Temperature (degrees F.)					Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped		
	Air		Water		Weather		King salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	
1	32	24	44	44	Snow	198			
2	32	29	43	42	Snow	168			
3	42	31	42	42	Snow	179			
4	37	32	42	42	Snow	177			
5	40	34	42	42	Rain	170			
6	44	33	41	41	Rain	172			
7	41	25	42	41	Clear	170			
8	37	27	42	41	Clear	170			
9	40	33	42	42	Fog	168			
10	40	34	42	42	Fog	172			
11	43	35	43	43	Fog	172			
12	40	34	44	44	Fog	170			
13	42	31	44	44	Fog	172			
14	45	32	44	44	Clear	170			
15	54	32	44	44	Clear	170			
16	47	34	44	44	Clear	170			
17	50	34	44	44	Clear	170			
18	54	38	45	44	Clear	168			
19	45	37	45	44	Rain	168			
20	47	40	45	45	Overcast	168			
21	46	37	46	45	Overcast	166			
22	49	39	46	45	Rain	166			
23	48	43	45	45	Rain	164			
24	48	36	45	45	Cloudy	164			
25	48	32	45	45	Cloudy	164			
26	55	30	45	44	Clear	164			
27	58	36	45	44	Clear	161			
28	56	38	45	44	Clear	161			
29	60	40	45	44	Clear	157		75	
30	58	43	46	45	Cloudy	157			
31	60	42	48	46	Clear	157			
Totals								75	

*From U. S. Bureau of Reclamation

TABLE A-10
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
February 1965

Date	Temperature (degrees F.)					Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped		
	Air		Water		Weather		King salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	
1	58	37	47	46	Clear	157			
2	57	34	47	45	Cloudy	157			
3	60	37	47	45	Clear	155			
4	59	34	46	45	Cloudy	157		73	
5	54	38	46	46	Cloudy	159		43	
6	51	31	45	45	Clear	159			
7	59	25	46	45	Clear	157			
8	59	31	45	45	Clear	157			
9	51	28	45	45	Clear	157			
10	60	22	45	44	Clear	161			
11	59	24	44	44	Clear	161		63	
12	64	27	44	44	Clear	161			
13	66	36	44	44	Cloudy	159			
14	68	32	44	44	Clear	159			
15	60	25	45	44	Clear	159			
16	67	31	45	44	Clear	157			
17	69	31	45	44	Clear	157			
18	72	31	45	44	Clear	155		42	
19	69	31	47	45	Clear	155			
20	70	32	47	45	Clear	155			
21	69	31	46	45	Cloudy	155			
22	58	31	45	45	Clear	157			
23	64	25	45	44	Clear	157			
24	67	26	45	45	Clear	155			
25	67	26	45	44	Cloudy	155		120	
26	56	29	45	44	Cloudy	157		162	
27	54	36	45	45	Cloudy	161			
28	60	29	45	44	Clear	161			
Totals								503	

* From U. S. Bureau of Reclamation Records

TABLE A-11
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
March 1965

Date	Temperature (degrees F.)					Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped		
	Air		Water		Weather		King salmon	Silver salmon	Steelhead trout
	Maximum	Minimum	Maximum	Minimum			Adults Crilse	Adults Grilse	
1	65	30	46	44	Clear	161		172	
2	68	27	46	44	Clear	161			
3	64	28	46	44	Clear	161			
4	64	34	47	45	Cloudy	159		141	
5	54	38	46	45	Cloudy	157			
6	56	38	46	44	Cloudy	157			
7	64	36	46	44	Clear	155			
8	72	35	46	45	Clear	157		259	
9	70	34	46	45	Clear	161			
10	67	42	47	46	Clear	166			
11	70	32	47	45	Clear	161		155	
12	54	40	46	45	Overcast	161			
13	64	32	47	46	Clear	161			
14	71	31	47	46	Clear	159			
15	75	33	47	46	Clear	164		274	
16	66	32	48	46	Clear	164			
17	57	30	47	46	Cloudy	161			
18	65	30	47	46	Clear	159		184	
19	70	29	47	46	Clear	164			
20	78	29	48	47	Clear	164			
21	79	33	48	47	Clear	164			
22	72	36	48	47	Clear	164		262	
23	68	35	48	47	Clear	165			
24	62	32	48	47	Cloudy	165			
25	58	30	48	47	Cloudy	166		290	
26	60	37	47	47	Cloudy	166			
27	60	38	47	47	Cloudy	166			
28	62	37	48	47	Cloudy	167		249	
29	56	39	47	48	Cloudy	167			
30	54	44	48	48	Cloudy	168			
31	62	40	48	48	Clear	168			
								1,986	

*From U. S. Bureau of Reclamation Records

TABLE A-12
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
April 1965

Date	Temperature (degrees F.)					Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped				
	Air		Water		Weather		King salmon		Silver salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	
1	64	42	48	47	Cloudy	168				94	
2	53	33	47	46	Cloudy	169					
3	68	35	48	46	Clear	169					
4	76	44	48	47	Clear	169					
5	48	44	47	46	Rain	170				130	
6	53	35	47	46	Cloudy	170				21	
7	42	35	47	47	Rain	170					
8	43	34	46	46	Rain	172				79	
9	48	36	47	46	Rain	172					
10	50	34	46	45	Cloudy	170					
11	60	30	47	45	Fog	170					
12	70	32	49	47	Clear	169				47	
13	51	42	48	48	Cloudy	166					
14	50	45	48	47	Rain	164					
15	52	44	47	47	Rain	170					
16	59	39	48	47	Rain	170				58	
17	60	36	49	48	Cloudy	172					
18	51	43	49	48	Rain	179					
19	70	48	49	48	Cloudy	175				108	
20	65	49	50	49	Rain	170					
21	64	47	50	50	Cloudy	168					
22	70	46	51	51	Clear	166				108	
23	76	43	53	53	Clear	168					
24	82	41	54	53	Clear	166					
25	85	43	54	54	Clear	166					
26	87	47	55	53	Clear	166				23	
27	86	49	54	53	Clear	166					
28	81	50	55	54	Clear	168					
29	76	48	55	55	Cloudy	163				38	
30	75	45	54	54	Clear	170					
Totals										706	

*From U. S. Bureau of Reclamation Records

TABLE A-13
Trinity River Salmon and Steelhead Hatchery
Weather, Water and Fish Data Report
May 1965

Date	Temperature (degrees F.)					Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped		
	Air		Water		Weather		King salmon	Silver salmon	Steelhead trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults
1	62	34	54	54	Clear	179			
2	64	31	54	53	Clear	181			
3	70	31	54	54	Clear	179			8
4	64	42	51	51	Clear	177			
5	58	30	49	49	Clear	177			
6	58	28	49	48	Clear	175			
7	72	30	49	48	Cloudy	177			
8	74	34	50	49	Clear	179			
9	77	38	50	50	Clear	179			
10	82	58	51	51	Clear	179			
11	88	40	51	51	Clear	172			
12	90	43	52	52	Clear	177			
13	77	47	52	52	Clear	179			
14	81	46	54	54	Clear	175			
15	88	42	56	54	Clear	175			
16	78	54	55	54	Clear	177			
17	78	40	51	51	Cloudy	172			
18	84	41	49	49	Clear	168			
19	79	45	49	49	Cloudy	168			
20	77	38	49	48	Cloudy	170			
21	61	46	48	48	Showers	175			
22	70	41	49	47	Cloudy	177			
23	77	36	49	47	Clear	175			
24	77	35	49	47	Clear	170			
25	83	37	49	48	Clear	172			
26	89	43	49	48	Clear	170			
27	86	47	51	50	Clear	177			
28	87	48	51	50	Clear	183			
29	88	47	51	51	Clear	177			
30	93	46	52	51	Clear	175			
31	79	46	51	51	Clear	170			
Totals									8

*From U. S. Bureau of Reclamation Records

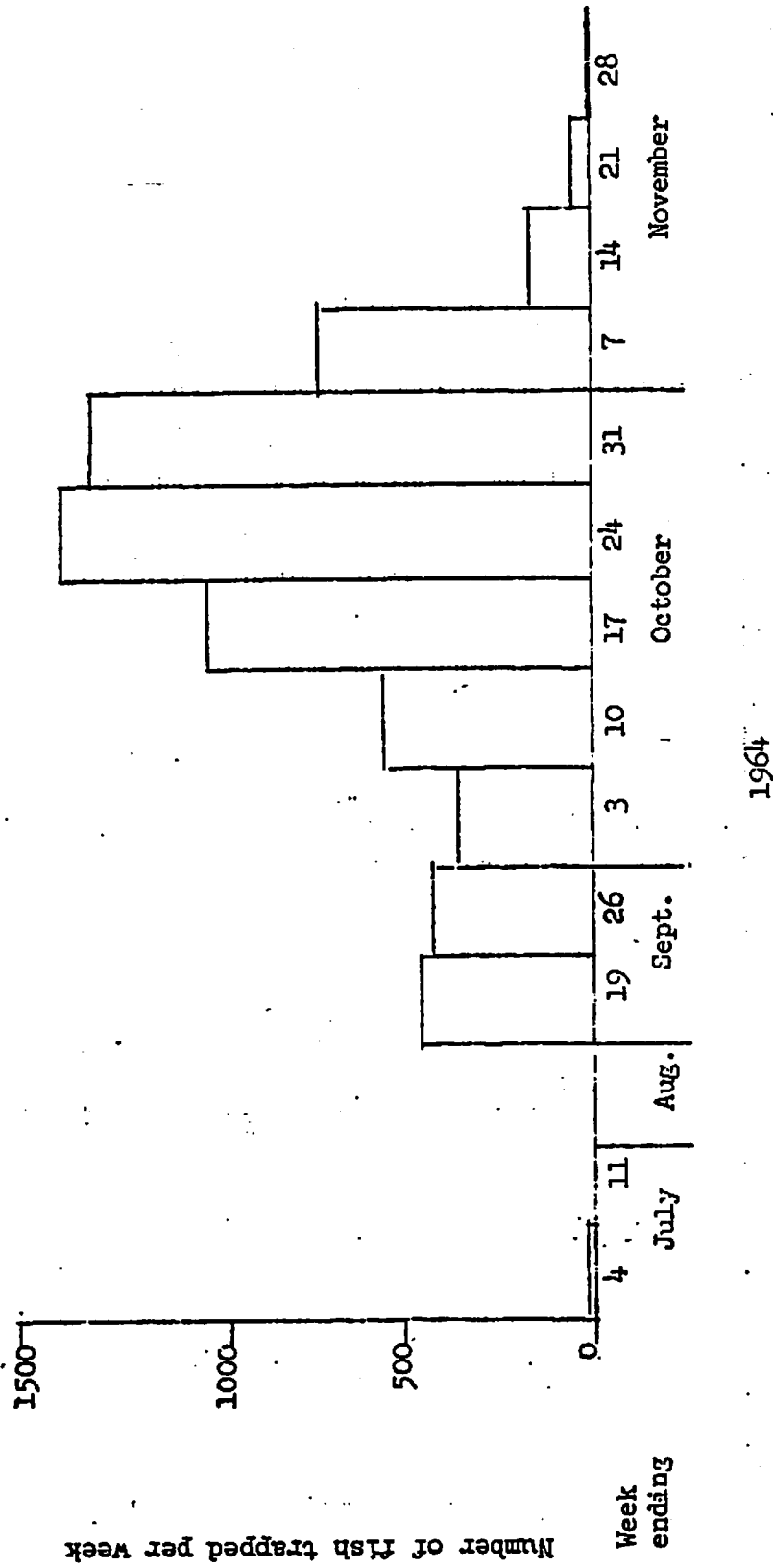


FIGURE A-1. King salmon trapped at Trinity River Fish Hatchery.
Weekly Fish count June 28, 1964, to November 28, 1964.

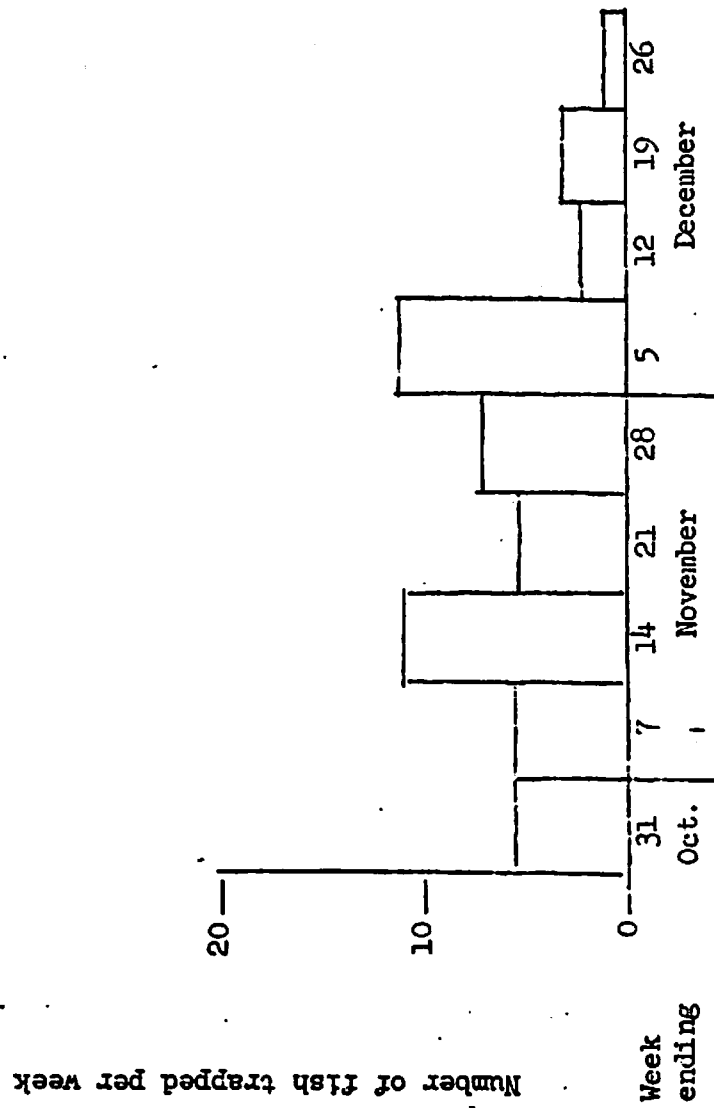


FIGURE A-2. Silver salmon trapped at Trinity River Fish Hatchery. Weekly fish count October 25, 1964, to December 26, 1964.

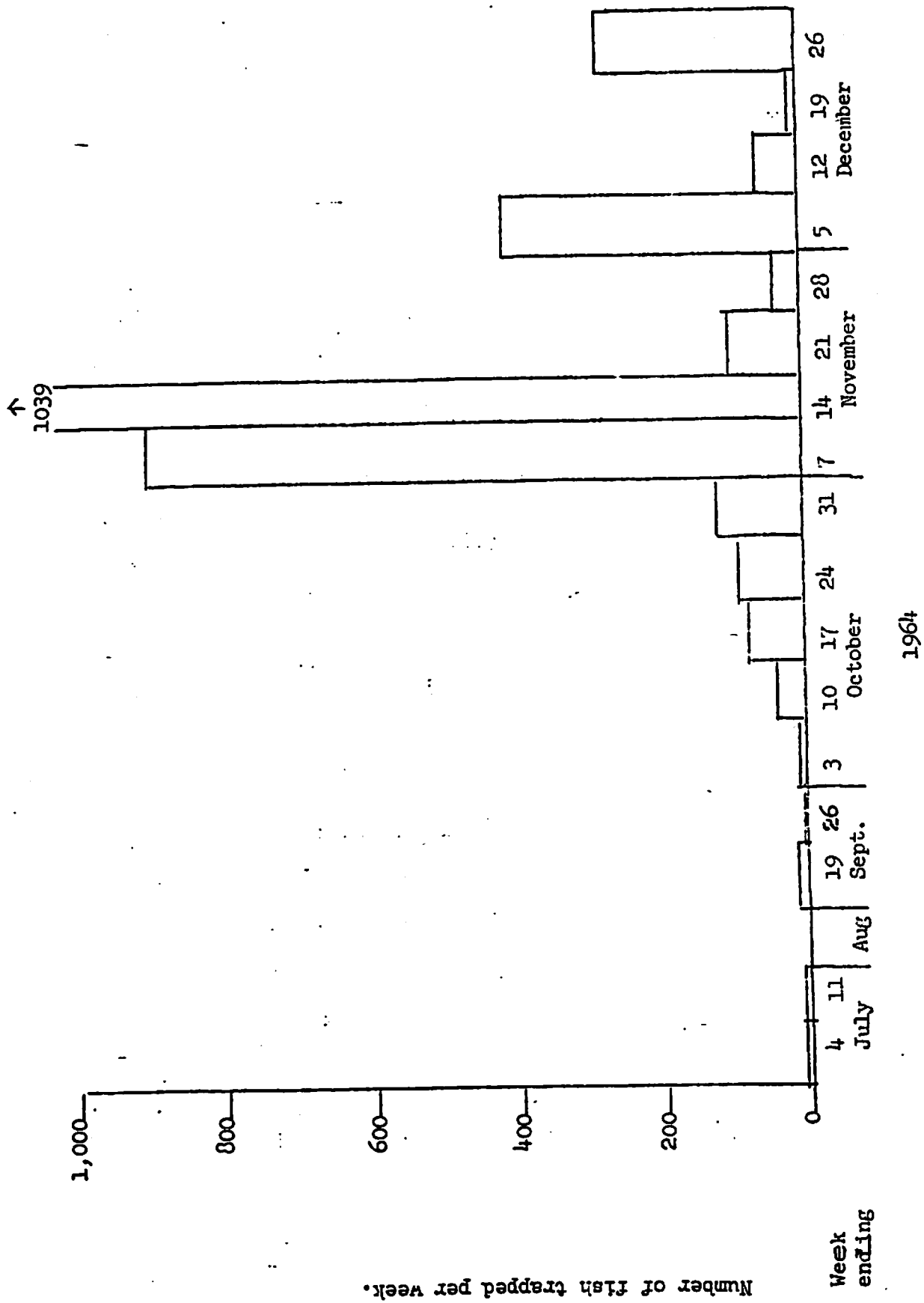


FIGURE A-3. Steelhead trout trapped at Trinity River Fish Hatchery. Weekly Fish count July 1, 1964 to December 26, 1964.

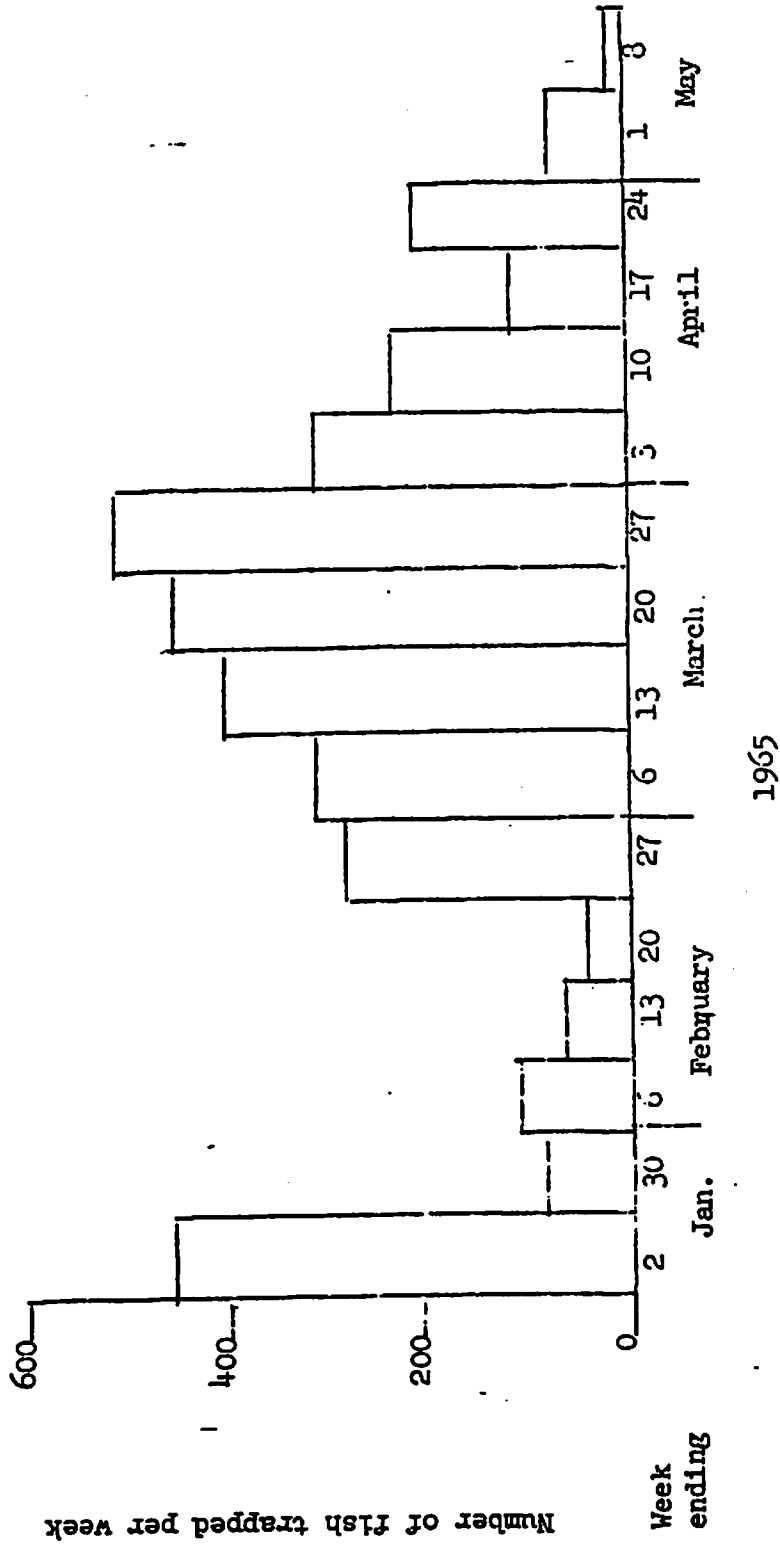


FIGURE A-3. Cont'd. Steelhead trout trapped at Trinity River Fish Hatchery. Weekly fish count December 23, 1964 to May 8, 1965.