

REF 90078

The Resources Agency of California
Department of Fish and Game

ANNUAL REPORT
TRINITY RIVER SALMON AND STEELHEAD HATCHERY
EIGHTH YEAR OF OPERATION 1965-66^{1/}

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SUMMARY

King salmon, Oncorhynchus tshawytsche, started entering the hatchery on September 12, 1965. The run ended November 24. Only 12 silver salmon, Oncorhynchus kisutch, were trapped. Steelhead trout, Salmo gairdnerii, began entering the hatchery on September 28, 1965, and continued through May 16, 1966. A few brown trout, Salmo trutta, entered the hatchery from September 21, to February 3, 1966.

Production data are as follows:

Species	Number adults	Number females spawned	Number eggs taken	Number fingerlings planted	Number yearlings planted	On hand June 30, 1966
King salmon	1,554	930	3,196,400	1,300,000	224,548	0
Silver salmon	3	1	2,700		38,900	706,500
Steelhead trout	992	503	2,123,100	6,803,200	630,257	2,554,150
Brown trout	100	39	109,900		28,900	72,000

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^{1/} Submitted September 1966.
Inland Fisheries Administrative Report No. 66-13.

INTRODUCTION

This is the eighth consecutive fiscal year report covering operation of the Trinity River Salmon and Steelhead Hatchery, located near Lewiston, Trinity County. Copies of the previous report 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, 1965, through June 30, 1966, is described in this report.

KING SALMON MAINTENANCE PROGRAM

History of the 1965 Salmon Run

The first king salmon of the 1965 run began to enter the hatchery fish ladder on September 12, when the barrier at the foot of the ladder was raised to allow the salmon to move from the resting pool to the hatchery fish trap. This first group of salmon was composed principally of fish that had moved into the resting pool in July, and therefore were of the spring run. These early fish do not tolerate confinement, but deteriorate rapidly, therefore, a deep pool of cool water has been provided adjacent to the ladder entrance. When the run ended on November 24, 3,075 fish had been trapped. There were 1,521 grilse; thus 65 percent were male, including grilse, and 35 percent were female.

Of the 1,077 females that entered the trap, 930 or 86.4 percent were spawned, 80 or 7.4 percent died in the ponds without spawning, 67 or 6.2 percent were too green when killed to be spawned successfully or were released alive at the end of the spawning season as being too green. The 930 females which were spawned produced 3,196,400 eggs for an average of 3,437 eggs per female. The average egg size was 77 eggs per ounce.

Planting 1964 Brood Year Salmon

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In October 1965, 224,548 yearling king salmon, averaging 1.1 fish per ounce, of the 1964 brood year were released in the Trinity River at the hatchery. These fish were marked by the removal of the right maxillary.

Planting 1965 Brood Year Salmon

In April 1966, a total of 1,300,000 king salmon fingerlings was planted in the Trinity River at the hatchery. Due to severe losses from "gas bubble disease" and gill bacteria infection, this plant represented the balance of the 1965 brood year king salmon.

SILVER SALMON MAINTENANCE PROGRAM

History of the 1965 Salmon Run

Between November 8, and November 24, 1965, 12 silver salmon were trapped. There were 2 large males, 1 female, and 9 grilse. The lone female was spawned producing 2,700 eggs. On December 4, 1965, 887,200 silver salmon eggs were received from

the Cascade Hatchery in Oregon. On April 18, 1966, 85,020 Cascade silver salmon fingerlings were transferred to the California Department of Fish and Game Iron Gate Hatchery, located on the Klamath River above Hornbrook. The balance of the fingerlings, 706,500, will be reared to yearlings for release early in 1967.

Planting 1964 Brood Year Silver Salmon

In January 1966, 38,900 Trinity River silver salmon were planted in the Trinity River at the hatchery. These fish average 8.9 fish per pound.

STEELHEAD MAINTENANCE PROGRAM

History of the 1965-66 Steelhead Run

Steelhead commenced entering the hatchery trap on September 28, and continued until December 15, 1965. A total of 276 fish was taken in this period. These fish were held in the spawning tanks until spring when they were spawned.

Fish again commenced entering the trap on February 3, and continued until May 16, 1966. During this spring run a total of 716 fish was trapped. The year's total was 992 fish.

From February 2, to May 23, 1966, a total of 2,123,100 eggs was taken from 503 females; an average of 4,221 eggs per fish. Average size of eggs was 190 eggs per ounce.

In May, 101,200 eyed eggs were shipped to the Iron Gate Hatchery.

The balance, 1,757,150, of the 1966 brood year steelhead fingerlings will be reared for a period varying from one year to a maximum of two years.

Management of the 1965 Brood Year Steelhead

~~From July 21, to October 6, 1965, a total of 6,803,200 steelhead fingerlings was planted in the Trinity River at the hatchery. Lack of rearing space prevented holding these fish until they became yearlings.~~

From April 20, to June 2, 1966, a total of 630,257 yearling steelhead was released. Only 5,425 of these fish weighed 10 fish per pound. Again, due to a lack of rearing space, it was necessary to plant small-sized fish.

About 700,000 of the 1965 yearlings will be released in November 1966, at 10 fish per pound or larger. The balance of the 1965 yearlings, 97,000 will be planted in May 1967. About 400,000 of the 1965 fish will be marked for the purpose of determining the best age and size to release steelhead trout.

BROWN TROUT MAINTENANCE PROGRAM

History of the 1965 Brown Trout Program

Between September 21, 1965, and February 3, 1966, 100 brown trout were trapped. Between November 19, 1965, and January 21, 1966, approximately 110,000 eggs were taken from 39 females. On June 30, 1966, there were 72,000 fingerling brown trout on hand. They will be released as yearlings in April 1967.

Planting 1964 Brood Year Brown Trout

On April 18, 1966, 28,900 yearling brown trout were planted in the Trinity River at the hatchery.

WATER QUALITY AND TEST EXPERIMENTS

Some "gas bubble disease" occurred in the king salmon and silver salmon. Only a few steelhead fingerlings showed signs of this disorder. Most of the steelhead fry were confined to the lower section of the hatchery trough until well advanced in size. The purpose was to prevent the small fish from entering the highly gas-charged water at the top of the trough and then moving to the lower section where they would decompress. It has not been positively proven that this is the remedy for "gas bubble disease", as control troughs showed no signs of the disorder.

A number of troughs were operated with water brought by hose line directly from the supply pipe above the aerator. These fish were no different from the regular production fish.

Two troughs were set up at the aerator to use water directly from the aerator basin, no head pressure was put on this water as the troughs were only slightly below the water level in the aerator basin. None of the steelhead fingerlings in this test showed any sign of "gas bubble disease".

Overall water quality has been the best since the hatchery commenced operating in May 1963. Full-time operation of the Trinity powerhouse and absence of heavy run-off, no doubt contributed to improved water quality.

APPENDIX

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 July 1, 1960, through June 30, 1966.

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

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

Figures A-1 and A-2 show weekly number of king salmon and steelhead trout trapped.

TABLE A-1

Yearly Comparison of Fish Trapped At Lewiston
July 1, 1960, through June 30, 1966

Species	July 1, 1960 through June 30, 1961	July 1, 1961 through June 30, 1962	July 1, 1962 through July 30, 1963	July 1, 1963 through June 30, 1964	July 1, 1964 through June 30, 1965	July 1, 1965 through June 30, 1966
King salmon						
Male	1,493	885	1,308	1,571	1,974	477
Female	1,287	1,613	1,608	2,629	3,042	1,077
Total adults	2,780	2,498	2,916	4,200	5,016	1,554
Grilse	4,130	2,899	6,535	2,540	1,287	1,521
Totals	6,910	5,397	9,451	6,740	6,303	3,075

Silver salmon

Male	84	158	7	32	23	2
Female	54	160	0	40	25	1
Total adults	138	318	7	72	48	3
Grilse	40	37	9	11	2	9
Totals	208	355	16	83	50	12

Steelhead trout

Adults	3,526	3,243	1,687	894	6,941	992
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Brown trout

Adults	82	35	49	34	145	100
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Chart of Operation
Trinity River Salmon and Steelhead Hatchery, 1965-66

Species	Adult fish trapped	Females spawned	Eggs taken	Eggs received by transfer	Eggs transferred	Fish transferred	Fingerlings planted	Yearlings planted	Fish on hand June 30, 1966
King salmon									
Male	477								
Female	1,077								
Grilse	1,521								
Totals	3,075	930	3,196,400				1,300,000	224,548	0
Silver salmon									
Male	2								
Female	1								
Grilse	9								
Totals	12	1	2,700	887,200		85,020 ^{1/}		38,900	706,500
Steelhead	992	503	2,123,100		101,200 ^{1/}		6,803,200	630,257	2,554,150 ^{2/}
Brown trout	100	39	109,900					28,900	72,000

^{1/} Fish and eggs transferred to Iron Gate Hatchery.

^{2/} This balance on hand includes 797,000 yearling fish which will be released when they weigh 10 fish per pound.

TABLE A-3
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
July 1965

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	93	51	51	51	Clear	153					
2	99	54	51	50	Clear	153					
3	99	56	51	50	Clear	150					
4	99	55	52	51	Clear	153					
5	103	55	52	51	Clear	166					
6	98	55	52	51	Clear	157					
7	100	55	51	51	Clear	155					
8	96	56	51	51	Clear	153					
9	90	46	51	51	Clear	153					
10	85	46	50	50	Clear	157					
11	86	46	50	50	Clear	155					
12	94	49	51	50	Clear	153					
13	94	50	51	51	Clear	153					
14	98	52	52	51	Clear	155					
15	102	56	51	51	Clear	157					
16	102	59	50	50	Clear	157					
17	102	61	51	51	Clear	155					
18	99	56	52	51	Clear	155					
19	94	47	53	51	Clear	153					
20	85	50	53	50	Clear	153					
21	90	49	51	51	Clear	153					
22	95	50	51	50	Clear	153					
23	97	50	50	50	Clear	157					
24	99	50	51	51	Cloudy	155					
25	93	57	52	52	Clear	153					
26	82	56	51	50	Clear	155					
27	86	49	51	51	Clear	155					
28	97	46	52	50	Clear	164					
29	103	48	50	50	Clear	168					
30	94	52	50	50	Cloudy	161					
31	84	65	51	51	Showers	264					
Totals							--	--	--	--	--

*From U. S. Geological Survey records.

TABLE A-4
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
August 1965

Date	Temperature (degrees F.)		Water		Weather	Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped					
	Air						King salmon		Silver salmon			
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse		
1	97	60	51	51	Clear	208						
2	92	58	52	51	Clear	159						
3	94	56	52	51	Clear	159						
4	100	56	51	51	Clear	161						
5	101	56	51	51	Clear	159						
6	100	56	51	51	Clear	159						
7	96	53	51	51	Clear	159						
8	92	54	51	51	Clear	157						
9	91	55	51	51	Cloudy	155						
10	88	55	52	51	Clear	155						
11	71	62	52	52	Rain	157						
12	80	54	51	51	Clear	157						
13	93	46	51	51	Clear	155						
14	96	52	51	51	Clear	155						
15	96	52	51	51	Clear	155						
16	98	56	51	51	Cloudy	155						
17	81	61	51	51	Overcast	155						
18	81	62	50	49	Rain	157						
19	86	61	51	49	Clear	153						
20	83	50	50	49	Clear	157						
21	85	53	49	49	Cloudy	155						
22	83	52	49	49	Cloudy	157						
23	80	58	51	51	Cloudy	155						
24	76	55	51	51	Showers	155						
25	81	52	50	50	Cloudy	155						
26	97	50	50	50	Cloudy	157						
27	100	51	50	50	Cloudy	155						
28	92	49	50	49	Cloudy	155						
29	95	45	50	49	Clear	155						
30	96	50	50	49	Clear	153						
31	98	49	49	49	Clear	153						
Totals												

*From U. S. Geological Survey records.

E A-5
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
September 1965

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	94	54	50	49	Clear	155					
2	93	54	49	48	Clear	153					
3	89	45	50	49	Clear	155					
4	84	50	51	51	Clear	148					
5	76	47	51	51	Clear	153					
6	80	47	51	50	Cloudy	155					
7	83	44	51	50	Clear	153					
8	84	45	50	50	Clear	153					
9	89	44	50	49	Clear	153					
10	83	46	50	49	Clear	153					
11	82	45	50	50	Clear	155					
12	89	43	49	49	Clear	150					
13	85	50	51	50	Clear	150	84	3			
14	91	44	50	50	Clear	148	72	3			
15	90	49	50	49	Clear	153	7	2			
16	74	51	50	49	Clear	153	28	1			
17	75	45	50	49	Clear	150	39	9			
18	75	34	49	48	Clear	150					
19	80	32	49	47	Clear	153					
20	86	35	48	47	Clear	150					
21	89	40	48	47	Clear	157					
22	88	43	50	48	Clear	157	78	5			
23	93	45	50	48	Clear	153	25	2			
24	91	45	49	48	Clear	161	14	2			
25	88	44	50	48	Clear	159	33	6			
26	75	47	50	49	Clear	157					
27	70	52	51	48	Cloudy	159					
28	75	39	50	48	Clear	155	81	28			1
29	83	36	49	48	Clear	157	42	17			1
30	90	38	49	48	Clear	179	11	9			
Totals							514	87			2

*From U. S. Geological Survey records.

TABLE A-6
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
October 1965

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	42	50	48	Clear	208	27	24			
2	84	38	51	50	Clear	208					
3	83	37	50	49	Clear	210					
4	73	40	51	49	Cloudy	210					
5	77	50	50	49	Clear	210	144	76			
6	86	42	50	49	Clear	210	62	60		2	
7	94	50	50	50	Clear	208	44	38			
8	90	42	50	50	Clear	208	24	40			
9	84	44	50	49	Cloudy	210					
10	84	45	50	49	Cloudy	210					
11	86	41	49	49	Clear	208	42	132			
12	86	40	49	49	Clear	205				3	
13	83	41	49	48	Clear	205	69	75			
14	60	42	49	48	Rain	205	38	66		1	
15	64	38	48	48	Cloudy	205	33	59		1	
16	67	29	49	48	Clear	205					
17	74	36	49	47	Clear	200					
18	63	41	48	48	Cloudy	200	110	137		1	
19	77	47	48	48	Clear	200	21	65		1	
20	80	37	48	48	Clear	200	12	44			
21	85	35	48	48	Clear	200	27	39		1	
22	86	35	49	48	Clear	198	38	73			
23	82	38	49	48	Clear	198					
24	85	38	49	48	Clear	198					
25	82	38	48	48	Clear	198	85	133			
26	81	37	48	48	Clear	200	25	59		1	
27	78	37	48	48	Clear	198	29	52		3	
28	78	46	48	48	Cloudy	198	31	63		4	
29	79	43	48	48	Clear	198	22	44		1	
30	80	37	49	48	Clear	195					
31	80	34	48	48	Clear	195					
Totals							953	1,279		19	

*From U. S. Geological Survey records.

TABLE A-7
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
November 1965

Temperature (degrees F.)					Weather	Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped				
Date	Air		Water				King salmon		Silver salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	
1	72	34	49	47	Clear	224	31	67		6	
2	68	35	48	47	Cloudy	239	12	25		4	
3	64	46	47	47	Cloudy	239					
4	70	51	48	47	Clear	239	18	31		3	
5	53	42	48	48	Cloudy	239					
6	63	41	48	47	Showers	242					
7	53	43	48	48	Rain	242					
8	61	46	48	47	Clear	242	15	26	1	21	
9	62	43	48	47	Clear	239					
10	50	41	47	47	Rain	242					
11	50	43	48	48	Rain	245					
12	51	47	48	48	Rain	248	7	4	4	48	
13	50	49	48	48	Rain	251					
14	54	46	48	47	Rain	251					
15	58	47	48	47	Rain	245		1		23	
16	54	48	48	48	Rain	248					
17	57	49	47	47	Rain	251					
18	52	43	47	47	Rain	254			2	2	79
19	54	42	47	47	Rain	254					
20	60	42	47	47	Rain	254					
21	58	42	47	47	Clear	251					
22	49	40	47	47	Cloudy	254	3	1		2	52
23	49	40	47	47	Rain	254					
24	41	37	47	46	Rain	254	1		1		11
25	41	32	46	46	Snow	260					
26	50	34	45	45	Rain	260					
27	48	34	45	45	Cloudy	260					
28	43	35	45	45	Clear	257					
29	46	33	44	44	Cloudy	257					
30	53	35	44	44	Clear	260					
Totals							87	155	3	9	247

* From U. S. Geological records.

TABLE A-8
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
December 1965

Date	Temperature (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.s.)*	Fish trapped				Steelhead trout	
	Air		Water				King salmon		Silver salmon			
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse		
1	47	37	44	44	Clear	239						
2	46	35	45	44	Clear	210						
3	50	36	45	44	Cloudy	210						
4	49	39	45	45	Cloudy	210					1	
5	55	45	45	45	Clear	210						
6	58	42	45	45	Clear	210						
7	58	42	46	45	Clear	210						
8	47	41	46	46	Clear	210						
9	52	40	46	46	Cloudy	210						
10	50	36	46	46	Clear	210						
11	43	35	46	45	Showers	210						
12	49	39	46	45	Cloudy	210						
13	47	33	46	46	Clear	208						
14	45	27	45	45	Clear	208						
15	45	19	45	45	Clear	210						
16	43	18	45	45	Clear	210					7	
17	44	19	44	43	Clear	210						
18	46	19	43	42	Clear	208						
19	47	19	43	42	Clear	208						
20	46	19	42	42	Clear	208						
21	46	19	42	42	Clear	208						
22	46	17	42	41	Clear	210						
23	43	20	41	41	Clear	210						
24	37	31	41	41	Snow	210						
25	42	30	41	41	Snow	210						
26	38	24	41	40	Cloudy	210						
27	45	28	40	40	Snow	210						
28	43	38	41	40	Rain	212						
29	40	32	41	41	Rain	210						
30	39	28	41	41	Snow	210						
31	41	19	41	41	Cloudy	210						
Totals												8

*From U. S. Geological records.

TABLE A-2
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
January 1966

Date	Temperatures (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	35	19	41	41	Clear	210					
2	38	31	42	41	Snow	210					
3	38	33	42	42	Rain	183					
4	33	32	42	42	Snow	172					
5	37	32	42	42	Rain	172					
6	43	34	42	41	Cloudy	166					
7	40	34	42	41	Cloudy	166					
8	49	33	42	41	Clear	168					
9	44	32	42	42	Clear	166					
10	36	30	42	42	Cloudy	168					
11	43	33	42	42	Clear	164					
12	46	30	43	43	Clear	166					
13	47	32	43	43	Clear	166					
14	50	32	43	43	Clear	164					
15	50	34	44	43	Clear	164					
16	50	26	44	43	Clear	161					
17	50	22	43	43	Clear	164					
18	49	26	44	44	Clear	164					
19	49	18	43	43	Clear	177					
20	48	18	43	43	Clear	170					
21	45	20	43	43	Clear	164					
22	49	31	43	43	Snow	161					
23	43	32	42	42	Cloudy	159					
24	45	31	43	43	Cloudy	159					
25	48	31	43	43	Cloudy	161					
26	51	33	43	43	Clear	161					
27	55	24	44	43	Clear	166					
28	51	26	44	43	Clear	164					
29	40	36	44	43	Rain	168					
30	49	34	44	43	Showers	168					
31	44	35	44	43	Clear	168					
Totals							--	--	--	--	--

*From U. S. Geological Survey records.

TABLE A-50
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
February 1966

Date	Temperatures (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	44	35	44	43	Cloudy	168					
2	46	32	44	43	Cloudy	164					
3	42	39	44	44	Rain	168					
4	45	38	44	44	Rain	170					
5	54	39	44	44	Cloudy	168				11	
6	49	33	44	44	Cloudy	170					
7	49	29	44	44	Clear	168					
8	53	27	44	43	Clear	156				20	
9	53	28	44	43	Clear	166					
10	57	35	44	43	Clear	164					
11	56	25	44	43	Clear	164					
12	50	24	44	43	Clear	161				6	
13	56	20	44	43	Clear	161					
14	57	22	44	43	Clear	164					
15	59	27	44	43	Clear	161				7	
16	66	24	44	43	Clear	161					
17	62	25	44	43	Cloudy	159					
18	55	30	44	44	Cloudy	159					
19	46	36	44	43	Rain	159				7	
20	58	38	45	44	Clear	159					
21	62	33	46	44	Cloudy	159					
22	44	42	46	44	Rain	161					
23	46	40	45	44	Cloudy	161					
24	50	35	45	44	Rain	159					
25	43	36	44	44	Cloudy	159				44	
26	46	31	45	44	Cloudy	159					
27	57	34	46	44	Clear	159					
28	54	36	45	45	Clear	159					
Totals										166	

*From U. S. Geological Survey records.

TABLE A-11
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
March 1966

Date	Temperatures (degrees F.)				Weather	Flow of Trinity River at Lewiston (c.f.f.s.)*	Fish trapped				Steelhead trout
	Air		Water				King salmon		Silver salmon		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	
1	42	32	45	45	Clear	161					10
2	44	28	44	44	Cloudy	161					4
3	52	21	45	44	Clear	161					
4	44	24	44	44	Rain	161					
5	42	34	44	44	Cloudy	161					
6	48	38	44	43	Rain	164					
7	51	37	44	44	Rain	164					20
8	50	42	44	44	Rain	164					9
9	49	44	44	44	Rain	161					
10	60	41	45	44	Clear	164					19
11	64	37	46	45	Clear	161					9
12	65	36	47	45	Cloudy	161					
13	63	45	48	45	Cloudy	161					
14	62	42	47	46	Cloudy	161					74
15	50	41	47	47	Rain	161					54
16	45	32	47	46	Snow	161					
17	51	25	47	46	Cloudy	161					36
18	58	34	47	46	Cloudy	161					20
19	51	39	46	46	Cloudy	161					
20	54	27	47	46	Cloudy	159					
21	58	41	47	47	Clear	159					41
22	65	29	49	47	Clear	159					17
23	74	27	49	47	Clear	159					
24	79	31	48	47	Clear	159					21
25	80	48	49	48	Clear	159					22
26	81	35	50	49	Clear	157					
27	82	35	50	49	Clear	159					
28	83	36	51	50	Clear	157					33
29	86	36	51	47	Clear	159					31
30	84	38	51	50	Clear	159					
31	89	40	51	40	Clear	159					20
Totals											440

*From U. S. Geological Survey records.

TABLE A-12
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
April 1966

Date	Temperatures (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	85	41	52	51	Clear	157					17
2	84	37	52	51	Clear	157					
3	83	36	52	51	Clear	157					
4	84	39	51	50	Clear	157					23
5	80	40	51	51	Clear	159					
6	81	41	52	52	Clear	159					14
7	78	44	53	53	Clear	157					7
8	70	50	53	52	Cloudy	159					
9	45	45	52	52	Rain	161					
10	56	45	50	47	Rain	164					
11	54	39	48	48	Rain	164					25
12	63	39	48	47	Rain	161					
13	73	40	48	48	Clear	161					2
14	82	37	49	48	Clear	159					
15	87	43	50	49	Clear	161					1
16	87	44	49	49	Clear	159					
17	77	42	50	48	Clear	159					
18	64	38	49	47	Clear	161					1
19	66	30	47	47	Clear	161					1
20	79	31	47	46	Cloudy	164					
21	70	34	46	45	Clear	164					
22	76	36	46	45	Clear	161					
23	85	36	47	46	Clear	161					
24	85	36	47	46	Clear	159					
25	82	42	48	46	Clear	161					6
26	67	37	47	46	Clear	161					
27	75	32	47	46	Clear	159					
28	78	34	46	46	Clear	161					
29	83	33	47	46	Clear	164					
30	82	36	47	46	Clear	164					
Totals											97

*From U. S. Geological Survey records.

TABLE A-13
Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
May 1966

Date	Temperatures (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	38	49	46	Clear	164					
2	87	41	49	47	Clear	164					
3	92	43	50	47	Cloudy	164				2	
4	85	60	49	47	Cloudy	164					
5	69	51	50	48	Cloudy	164					
6	75	44	49	47	Clear	164				6	
7	84	40	50	46	Clear	166					
8	86	42	52	46	Clear	170					
9	80	51	52	48	Rain	428					
10	81	51	52	49	Clear	1,020				1	
11	78	44	52	50	Clear	1,020					
12	84	41	51	50	Clear	1,010					
13	81	43	52	50	Clear	1,010					
14	74	37	52	50	Clear	1,010				2	
15	79	39	51	50	Cloudy	1,010					
16	79	41	50	49	Clear	998					
17	87	40	52	50	Clear	864				2	
18	94	43	52	51	Clear	820					
19	96	45	51	50	Clear	698					
20	92	48	53	51	Clear	638					
21	82	49	53	52	Clear	638					
22	76	41	52	51	Clear	644					
23	90	39	52	51	Clear	644					
24	94	46	52	51	Clear	644					
25	94	49	53	51	Clear	610					
26	94	49	53	51	Clear	522					
27	87	50	53	51	Rain	440					
28	79	57	52	51	Cloudy	371					
29	72	53	51	50	Cloudy	367					
30	60	50	50	50	Rain	356					
31	67	46	50	50	Clear	221					
Totals											

*U. S. Geological Survey records.

TABLE A-14

Trinity River Salmon and Steelhead Hatchery
Weather, Water, and Fish Data
June 1966

Date	Temperatures (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	65	43	49	49	Cloudy	150					
2	60	44	49	49	Cloudy	148					
3	71	33	48	48	Cloudy	148					
4	84	40	49	47	Clear	146					
5	80	40	49	47	Cloudy	146					
6	69	54	46	44	Rain	148					
7	70	52	46	46	Cloudy	153					
8	84	50	48	47	Clear	153					
9	86	52	48	47	Clear	153					
10	78	54	49	48	Clear	150					
11	83	42	49	49	Clear	153					
12	90	44	50	49	Clear	155					
13	102	49	50	49	Clear	155					
14	104	55	49	49	Clear	157					
15	90	55	50	49	Rain	159					
16	94	52	50	48	Clear	157					
17	96	45	49	48	Clear	155					
18	93	52	49	48	Clear	155					
19	88	50	50	48	Cloudy	155					
20	80	53	49	48	Cloudy	155					
21	79	52	48	48	Clear	157					
22	77	43	50	48	Cloudy	157					
23	78	56	49	48	Clear	157					
24	86	44	49	47	Clear	157					
25	92	50	48	48	Clear	157					
26	92	46	50	46	Clear	157					
27	95	50	49	48	Clear	157					
28	93	54	50	49	Clear	159					
29	90	50	50	49	Clear	159					
30	88	49	50	49	Clear	159					
Totals							--	--	--	--	---
Grand totals							1,554	1,521	3	9	992

*From U. S. Geological Survey records.

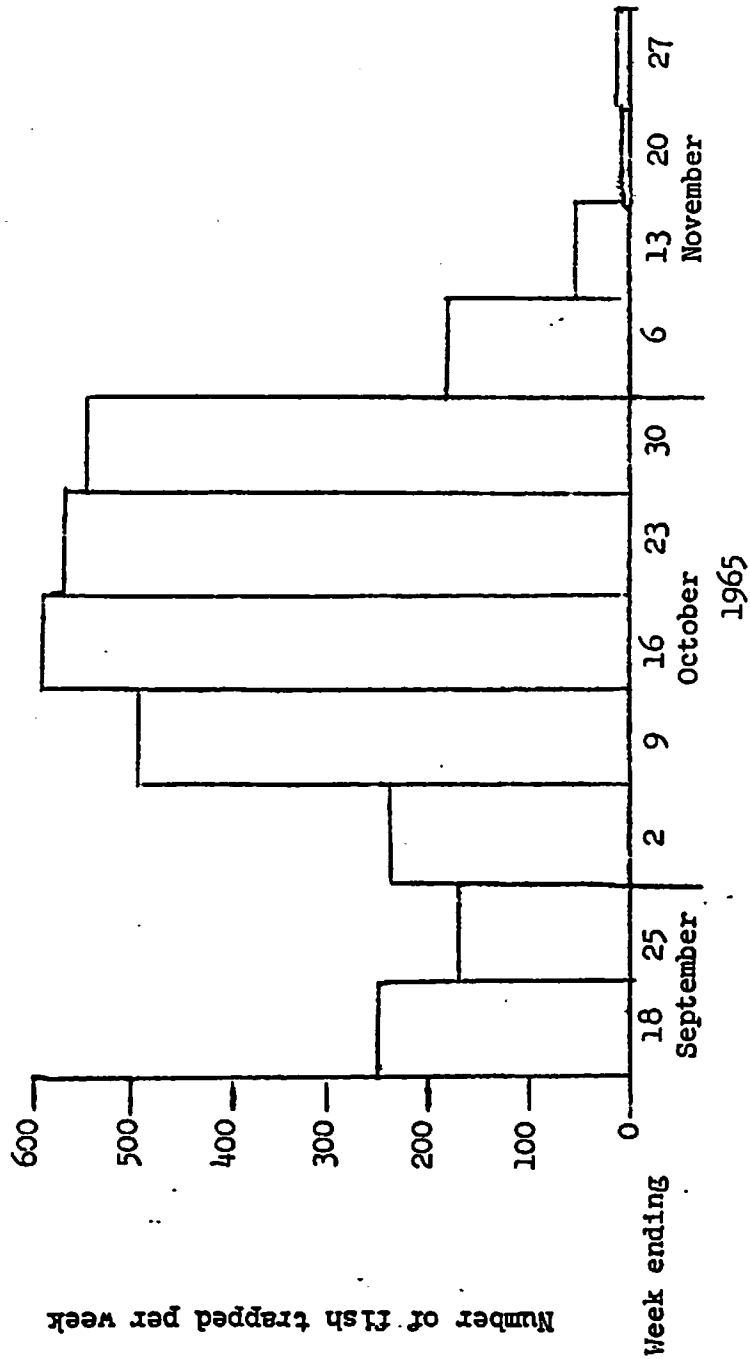


FIGURE A-1. King salmon trapped at Trinity River Fish Hatchery.
Weekly fish count September 13, 1965, to November 24, 1965.

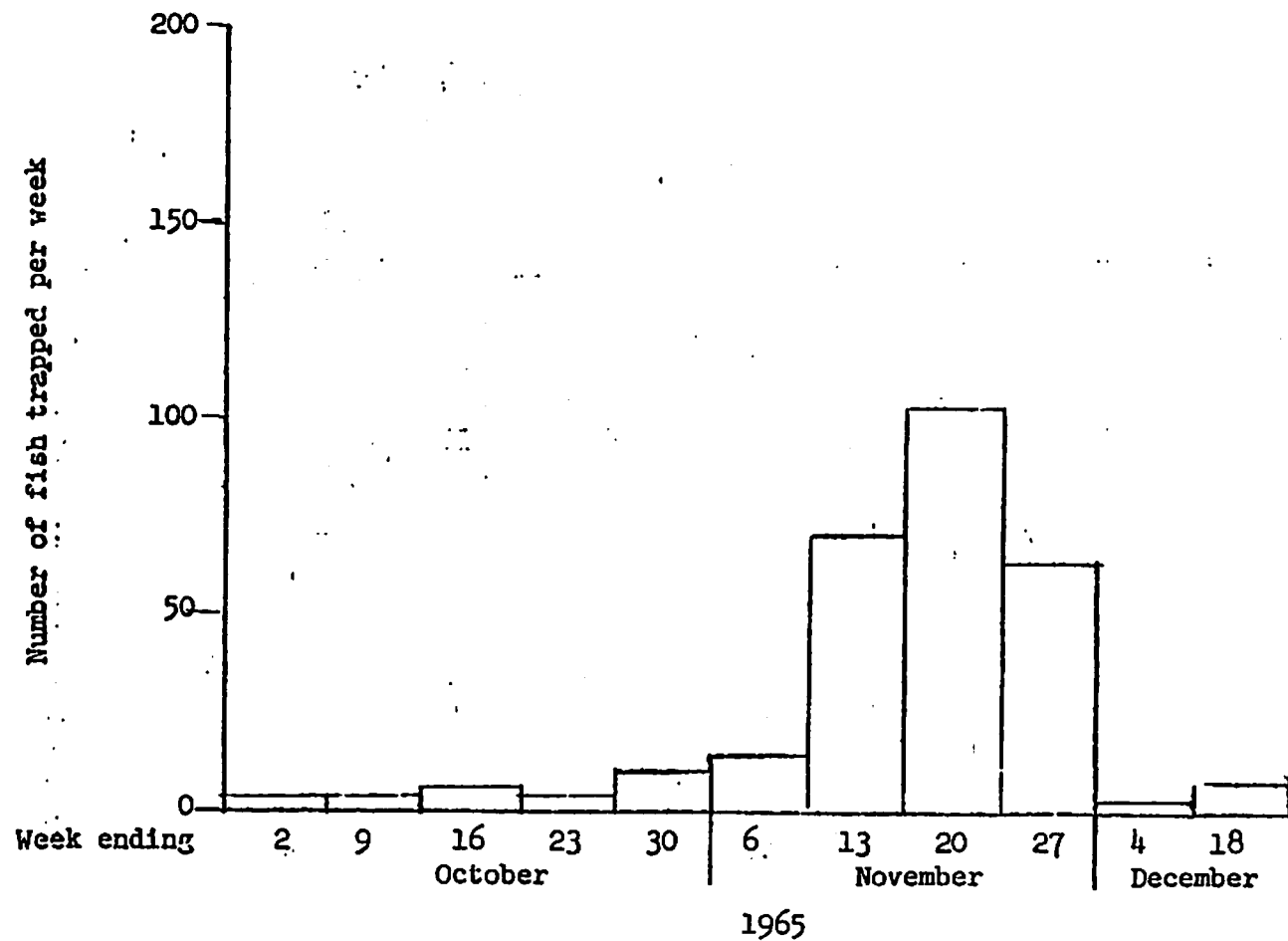


FIGURE A-2. Steelhead trout trapped at Trinity River Fish Hatchery.
Weekly fish count September 28, 1965, to December 15, 1965.

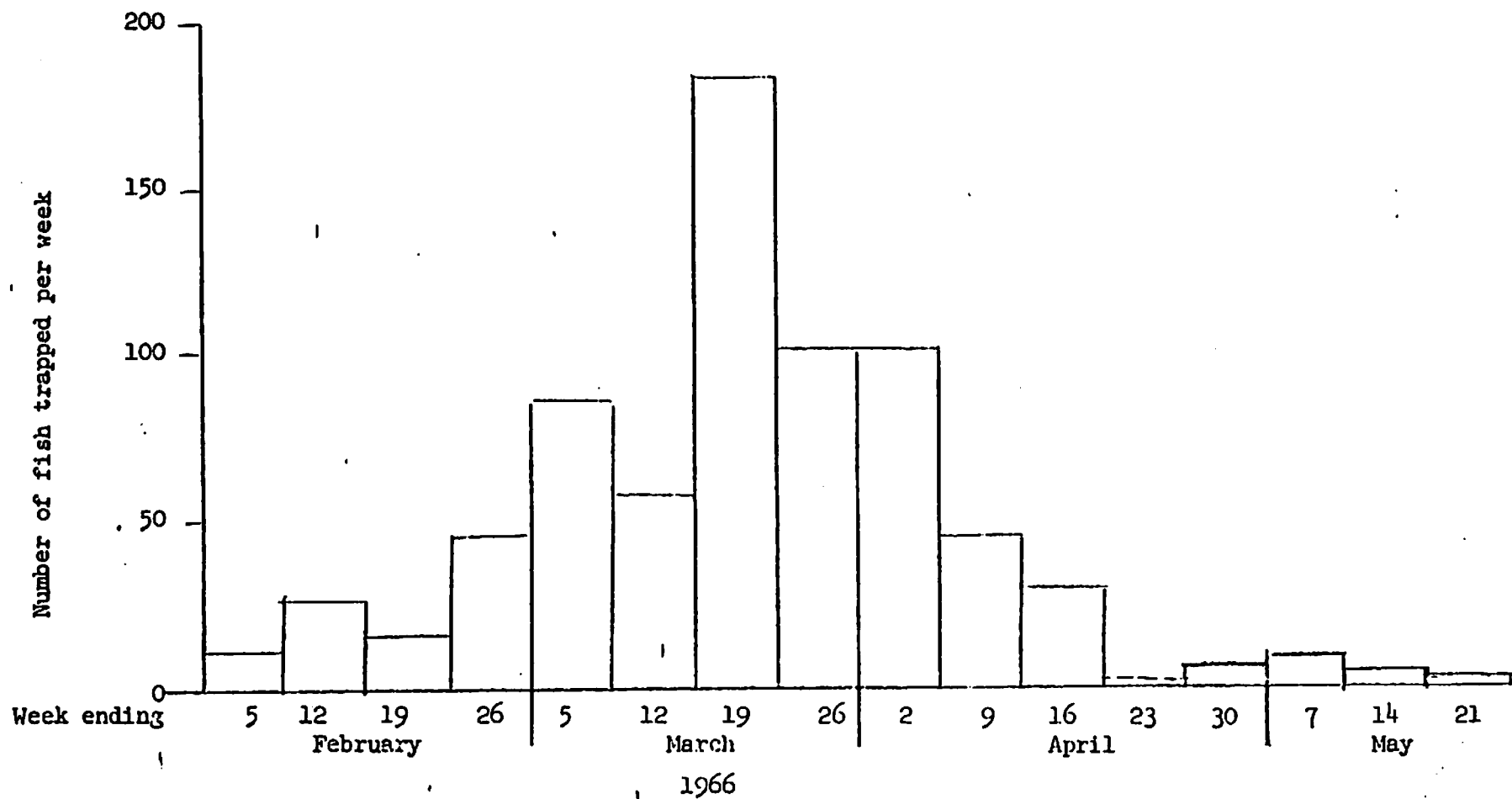


FIGURE A-2 (continued). Steelhead trout trapped at Trinity River Fish Hatchery. Weekly fish count February 3, 1966, to May 16, 1966.