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THE RESOURCES AGENCY OF CALIFORNIA
Department of Fish and Game

ANNUAL REPORT
NIMBUS SALMON AND STEELHEAD HATCHERY
1966-67 FISCAL YEAR^{1/}

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SUMMARY

The first king salmon (Oncorhynchus tshawytscha) of the 1966-67 season arrived at Nimbus Hatchery on October 22, and the last salmon arrived on February 14, 1967. November 17 was the peak day of the run.

A total of 8,105 salmon entered the holding ponds. Another 1,157 went upstream through the weir and were removed from the racks as they died. Of the run entering the holding ponds, 36.8% were males and 63.2% were females.

The 4,337 females which were spawned produced 27,675,300 eggs. When the number of eggs taken exceeded the hatchery's capacity, they were incubated in troughs set up in the nursery ponds.

Between December 27, 1966, and April 3, 1967, 642 steelhead (Salmo gairdnerii gairdnerii) entered the holding ponds.

The 1966 brood year steelhead, both marked and unmarked, were released in the Sacramento River near Clarksburg. A total of 224,090 yearlings were released at this site.

About 69,700 persons visited the hatchery during the fiscal year.

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^{1/}Submitted January, 1968.

INTRODUCTION

This is the twelfth annual report of the Nimbus Salmon and Steelhead Hatchery. The hatchery is operated by the California Department of Fish and Game under contract with the United States Bureau of Reclamation. The report summarizes the number of fish trapped and spawned, eggs and fish produced, and water and air temperatures during the period from July 1, 1966, to June 30, 1967.

KING SALMON MAINTENANCE PROGRAM

The weir racks were installed by the Bureau of Reclamation on August 20, but the first salmon did not appear in the holding ponds until October 20. High releases of water from Folsom Reservoir made it necessary to remove the racks on December 6, 1966, and January 24, 1967. The weir was removed for the season on March 14, 1967.

A total of 9,262 king salmon migrated to the hatchery during the 1966 fall run. Of these, 8,105 entered the holding ponds and 1,157 escaped upstream; either through the weir or during the times of excessive flow when the weir was removed. The latter fish were removed from the racks as they died and drifted downstream.

That portion of the run entering the holding ponds was composed of 2,434 large males, 5,098 large females, 550 grilse, and 23 small females. The latter were not spawned. The run was thus composed of 36.8% males including grilse and 63.2% females. Of the large females which migrated to the holding ponds, 4,337, or 85.1%, were spawned, 657, or 12.9%, died before spawning, and 104, or 2%, were too green when killed to be spawned successfully.

The 4,337 females spawned produced 27,679,300 for an average of 6,382 eggs each.

On December 5, 1966, the incubation capacity of the hatchery was reached and it was necessary to place troughs in the nursery ponds for the additional eggs. About 4,000,000 salmon eggs were incubated in the nursery ponds. The percentage surviving to swimup was comparable to those incubated in the hatchery building.

1964 Brood Year Marked King Salmon

During December, 1965, 78,781 of the 1964 brood year king salmon, reared at Nimbus, were marked by removing the right maxillary and planted in the American River. These fish averaged 8.1 fish per pound. Also, in December, 79,650 1964 brood year king salmon from eggs taken at Nimbus Hatchery, but reared at Moccasin and San Joaquin hatcheries were marked by removing the left maxillary and released into the American River. These fish averaged 1.6 fish per ounce. Both of these groups were part of the Sacramento River Chinook Disease study.

The first year returns of these groups were 150 marked right maxillary and 19 marked left maxillary.

Planting 1966 Brood Year King Salmon

From January 5, 1967, through June 6, 1967, 18,522,875 king salmon fingerlings were released into the American River at the hatchery. As in the past year, most of the fish were released at night to minimize bird predation. Also, the majority of these fish were swimup fry when released.

Other Species of Salmon Encountered

During the season covered by this report, two silver salmon (Oncorhynchus kisutch) and two chum salmon (Oncorhynchus keta) were observed in the holding ponds. Early in the season one sockeye salmon (Oncorhynchus nerka) was removed from the fish racks.

Sacramento River Chinook Disease

Losses of king salmon from Sacramento River Chinook Disease were less than anticipated. Symptoms indicating that S.R.C.D. was present were first noted in the nursery ponds during the week of March 18. Various disease organisms, diet difficulties, and S.R.C.D. combined, were responsible for losses of 20,000 to 25,000 per week for a six week period in a lot of approximately 600,000 king salmon. The S.R.C.D. was believed to be responsible for about 18,000 of the total loss. Among king salmon in the hatchery troughs and raceway ponds, mortality caused by S.R.C.D. was less than among those held in the nursery ponds.

Disposal of Salmon Carcasses

Approximately 78,600 pounds of salmon were picked up by various state and county agencies, charitable organizations, and Indians of California. Also, 16,400 pounds of carcasses unfit for human consumption were taken by a rendering plant.

STEELHEAD MAINTENANCE PROGRAM

Though some steelhead migrated to the holding ponds during the height of the salmon migration, these were returned to the river until December 27. After December 27, those entering the holding ponds were held for spawning. The numbers entering each month were as follows:

<u>Month</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
December	67	65	132
January	141	83	224
February	121	70	191
March	41	52	93
April	--	2	2
Totals	370	272	642

Steelhead Marking Program

As returns from yearling steelhead marked and released into the Sacramento River near Clarksburg were greater than steelhead marked and released into the American River at the hatchery, all yearling steelhead of the 1966 brood year were marked by removing their adipose fin and released into the Sacramento. There were 216,820 marked and released during February and March, 1967.

The accumulative returns to the hatchery from those yearling steelhead marked and released into the Sacramento River is now 958, and those marked and released into the American River is 418.

An unknown number of steelhead bypassed the fish ladder during the period of January 24 to February 8, 1967. The fish racks were not in place at that time because flows exceeded 7,500 cfs.

Planting 1966 Brood Year Steelhead

From July 1, 1966, to June 30, 1967, 87,725 fingerling steelhead were planted in the American River at the hatchery. From February 14, 1967, to April 7, 1967, 216,820 yearlings marked "AD" and 270 unmarked yearlings were planted in the Sacramento River near Clarksburg.

PUBLIC RELATIONS

About 69,700 visited the hatchery during the fiscal year including persons in 60 organized groups.

APPENDIX

APPENDIX

- TABLES A-1 through A-3. Gives the daily air and water temperatures, weather conditions, and river flow during the report period.
- TABLES A-4 through A-10. Gives the daily air and water temperatures, weather conditions, river flow, and number of each species entering the hatchery during the report period.
- TABLES A-11 through A-12. Gives the daily air and water temperatures, weather conditions, and river flow during the report period.
- FIGURE A-1 Shows the number of fall run king salmon entering the hatchery during each week of the season.

TABLE A-1
Nimbus Salmon and Steelhead Hatchery
Weather and Water Data
July, 1966

Date	Temperature				Weather	American River
	Air		Water			flow
	Maximum	Minimum	Maximum	Minimum		at hatchery
						C.F.S.
1	86	58	60	58	Clear	2,499
2	82	55	61	58	"	2,501
3	88	54	60	58	"	2,499
4	95	56	58	58	"	2,498
5	96	70	53	58	Partly cloudy	2,253
6	84	62	58	58	Clear	1,752
7	81	64	59	58	Partly cloudy	1,498
8	86	54	60	58	" "	1,499
9	82	53	60	57	" "	1,499
10	84	65	59	59	Clear	1,501
11	82	58	60	60	Partly cloudy	1,501
12	76	58	61	58	" "	1,501
13	84	60	60	59	Clear	1,501
14	85	52	62	60	Partly cloudy	1,997
15	90	54	61	61	Clear	2,498
16	91	55	64	60	"	2,991
17	93	56	61	60	"	2,996
18	94	60	62	60	"	2,994
19	90	62	61	60	"	2,989
20	95	60	59	58	"	2,994
21	100	62	60	58	"	2,121
22	102	64	61	59	"	1,494
23	100	64	61	60	"	1,496
24	96	62	63	61	"	1,499
25	96	60	63	63	"	1,498
26	98	59	63	61	"	1,501
27	95	57	64	61	"	2,002
28	97	55	64	61	"	1,999
29	92	55	63	61	Partly cloudy	2,000
30	70	58	62	61	Cloudy-rain	2,000
31	96	58	62	61	Partly cloudy	2,000

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TABLE A-2
Nimlus Salmon and Steelhead Hatchery
Weather and Water Data
August, 1966

Date	Temperature				Weather	American River
	Air		Water			flow
	Maximum	Minimum	Maximum	Minimum		at hatchery
						C.F.S.
1	102	68	62	61	Clear	2,192
2	104	70	63	61	Partly cloudy	2,495
3	100	60	63	61	Clear	2,495
4	104	66	64	62	"	2,304
5	100	62	63	62	"	2,001
6	105	62	64	62	"	2,001
7	104	64	63	62	"	2,001
8	102	68	64	62	Partly cloudy	2,495
9	102	65	64	62	Clear	3,002
10	99	66	64	62	"	3,502
11	90	61	65	62	"	3,503
12	96	60	65	62	"	4,001
13	94	61	64	63	"	3,999
14	96	60	64	62	"	4,000
15	102	64	64	63	"	3,999
16	104	68	64	63	Partly cloudy	4,000
17	104	72	64	63	" "	3,963
18	99	64	65	63	Clear	2,862
19	92	62	65	63	"	2,242
20	92	54	66	63	"	1,986
21	91	56	66	63	"	1,998
22	92	53	65	63	"	1,751
23	92	57	65	63	"	1,458
24	94	58	66	64	Partly cloudy	1,000
25	86	50	66	63	" "	992
26	82	56	66	63	Clear	990
27	92	54	67	66	"	989
28	90	61	66	64	"	993
29	90	56	65	64	Partly cloudy	993
30	80	56	65	64	" "	993
31	86	52	65	63	" "	993

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TABLE A-3
Nimbus Salmon and Steelhead Hatchery
Weather and Water Data
September, 1966

Date	Temperature				Weather	American River
	Air		Water			flow
	Maximum	Minimum	Maximum	Minimum		at hatchery
						C.F.S.
1	89	55	65	63	Clear	993
2	94	58	65	64	"	991
3	96	78	66	64	"	991
4	96	62	66	64	"	991
5	98	62	66	64	"	991
6	83	56	65	63	"	990
7	77	53	65	64	Partly cloudy	990
8	82	52	66	63	Clear	990
9	85	56	66	64	Partly cloudy	990
10	83	54	65	64	" "	990
11	78	53	65	62	" "	991
12	76	52	66	63	Clear	992
13	72	55	66	63	Partly cloudy	992
14	76	49	66	64	" "	991
15	83	49	66	64	" "	994
16	98	52	66	64	Clear	992
17	88	57	66	64	Partly cloudy	992
18	76	62	65	64	" " -rain	994
19	82	56	66	63	" "	993
20	84	56	65	64	" "	992
21	86	57	66	64	Clear	991
22	82	58	66	64	"	990
23	88	58	67	64	"	991
24	83	54	66	64	"	992
25	80	57	66	64	"	991
26	82	56	66	64	Partly cloudy	991
27	87	62	69	64	Clear	992
28	95	60	68	65	"	992
29	94	62	67	65	"	1,002
30	83	60	68	64	"	991

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TABLE A-4
Nimbus Salmon and Steelhead Hatchery
Weather, Water, and Species Data
October, 1966

Date	Temperature				Weather	American River	Salmon
	Air		Water			flow	
	Maximum	Minimum	Maximum	Minimum		at hatchery	
						C.F.S.	
1	80	58	68	65	Partly cloudy	991	--
2	70	56	65	64	Cloudy	990	--
3	75	52	66	64	Partly cloudy	990	--
4	78	57	66	63	" "	990	--
5	79	52	66	63	Clear	990	--
6	75	52	65	63	"	990	--
7	63	52	66	63	Partly cloudy	990	--
8	80	52	65	64	" "	990	--
9	84	52	65	64	Clear	970	--
10	86	54	65	64	"	760	--
11	75	56	64	62	Partly cloudy	761	--
12	70	54	65	62	" "	761	--
13	66	44	64	62	Clear	761	--
14	70	40	64	62	"	762	--
15	70	41	60	60	"	761	--
16	76	52	63	59	"	762	--
17	74	42	58	53	"	762	--
18	76	42	57	57	"	762	--
19	78	42	57	54	Partly cloudy	749	--
20	76	56	56	54	" "	763	--
21	65	40	57	53	" "	762	--
22	74	40	57	55	Clear	762	--
23	78	47	56	54	"	734	--
24	82	43	57	54	"	498	--
25	82	52	56	54	Partly cloudy	498	--
26	72	50	56	54	" "	499	--
27	74	45	57	53	" "	500	--
28	70	42	57	54	" "	500	--
29	76	44	57	55	Clear	500	206
30	76	45	57	54	"	579	--
31	76	46	57	54	"	1,501	--

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TABLE A-5
Nimbus Salmon and Steelhead Hatchery
Weather, Water, and Species Data
November, 1966

Date	Temperature				Weather	American River	Salmon
	Air		Water			flow	
	Maximum	Minimum	Maximum	Minimum		at hatchery C.F.S.	
1	79	45	58	55	Clear	1,501	77
2	78	47	56	56	Partly cloudy	1,501	--
3	74	51	55	54	" "	1,501	583
4	70	45	54	52	Clear	1,501	--
5	64	44	54	51	Partly cloudy, a.m. fog	1,504	322
6	52	50	52	51	Cloudy-rain	1,505	--
7	56	49	55	52	Cloudy	1,506	198
8	61	44	56	54	Clear	1,505	210
9	61	37	55	54	Partly cloudy	1,503	76
10	57	41	54	53	" "	1,501	133
11	58	48	53	52	" "	1,499	--
12	54	49	53	53	Clear	1,493	97
13	56	48	53	52	Partly cloudy	1,495	38
14	50	46	54	53	" " -rain	1,495	--
15	54	54	54	54	Cloudy-rain	1,497	157
16	53	50	54	53	Partly cloudy	1,501	--
17	57	48	55	54	" "	1,746	862
18	60	46	55	54	" "	1,996	622
19	62	52	55	54	Cloudy-rain	1,995	77
20	62	52	54	54	Partly cloudy-rain	1,996	577
21	57	44	54	54	Cloudy-rain	2,375	206
22	51	38	54	53	Partly cloudy	3,494	758
23	49	32	55	53	Clear-a.m. fog	3,995	520
24	51	32	55	53	Clear	3,998	--
25	53	32	55	54	"	4,003	220
26	54	34	55	55	Partly cloudy	4,001	96
27	55	36	54	54	Cloudy	4,002	204
28	53	46	54	54	Cloudy-rain	4,000	227
29	58	52	54	54	Cloudy	3,866	240
30	62	50	54	54	"	3,501	216

TABLE A-6
Nimluc Salmon and Steelhead Hatchery
Weather, Water, and Species Data
December, 1966

Date	Temperature				American River flow at hatchery			Salmon
	Air		Water		Weather	C.F.S.		
	Maximum	Minimum	Maximum	Minimum				
1	53	53	54	54	Cloudy-rain	3,502	136	
2	53	50	54	54	" "	4,088	88	
3	58	44	54	53	Partly cloudy	4,895	162	
4	52	43	53	52	Cloudy-rain	4,995	101	
5	46	44	53	52	" "	5,529	49	
6	47	44	54	53	Partly cloudy-rain	8,219	86	
7	52	42	55	54	" "	13,960	85	
8	48	43	53	52	" "	24,995	--	
9	50	44	54	52	Cloudy-rain	20,519	44	
10	58	44	52	50	Partly cloudy	8,133	3	
11	49	46	50	49	Clear-a.m. fog	7,343	17	
12	52	43	50	49	Partly cloudy- a.m. fog	4,741	--	
13	51	45	50	49	Cloudy	3,940	10	
14	52	47	51	50	Partly cloudy	3,502	--	
15	49	44	50	50	Cloudy	3,500	--	
16	46	43	50	50	Partly cloudy- a.m. fog	3,501	39	
17	46	44	50	50	Partly cloudy	3,499	--	
18	44	40	49	48	Cloudy	3,503	--	
19	42	40	49	40	Fog	2,994	34	
20	40	40	49	49	"	2,498	--	
21	43	40	49	49	"	2,278	30	
22	44	40	49	48	"	1,998	--	
23	44	34	49	48	"	1,998	33	
24	47	38	48	48	"	1,999	--	
25	44	36	48	48	Cloudy-a.m. fog	1,999	--	
26	50	30	48	47	Partly cloudy	1,997	--	
27	49	26	48	47	Clear	1,997	114	
28	53	28	48	47	Partly cloudy	1,997	--	
29	45	30	48	47	" "	1,989	--	
30	55	32	48	47	Clear	2,000	15	
31	47	31	48	47	Partly cloudy	2,002	--	

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TABLE A-7

Nimbus Salmon and Steelhead Hatchery
Weather, Water, and Species Data
January, 1967

Date	Temperature				Weather	American River	Salmon	Steelhead
	Air		Water			flow		
	Maximum	Minimum	Maximum	Minimum		at hatchery C.F.S.		
1	47	32	48	47	Partly cloudy-a.m. fog	1,988	--	--
2	36	29	47	47	Partly cloudy	1,994	--	--
3	44	30	47	47	Fog	1,993	13	7
4	40	36	47	47	"	2,000	--	--
5	46	38	47	46	Partly cloudy-a.m. fog	2,000	--	--
6	46	26	47	46	Clear	2,000	4	7
7	58	31	47	46	Partly cloudy	1,999	--	--
8	50	32	47	45	" "	1,998	--	--
9	53	31	47	46	" "	1,937	--	--
10	57	36	47	46	" "	1,798	8	3
11	58	33	47	47	Cloudy	1,712	--	--
12	57	37	48	47	Partly cloudy	1,498	--	--
13	57	36	48	47	" "	1,499	9	--
14	56	35	47	46	" "	1,501	--	--
15	56	36	47	46	" " -a.m. fog	1,501	--	--
16	62	36	48	46	" " " "	1,501	--	--
17	54	34	46	46	" " " "	1,500	8	--
18	46	36	46	45	" " " "	1,500	--	--
19	50	40	45	45	Cloudy	1,501	--	--
20	46	44	45	45	Cloudy-rain	1,500	--	--
21	48	44	45	45	" "	1,502	--	--
22	46	38	46	45	Partly cloudy	2,753	--	--
23	46	29	46	45	" "	6,282	13	31
24	50	40	46	46	Cloudy-rain	7,475	--	--
25	50	36	47	45	Partly cloudy	7,473	--	--
26	46	46	48	46	Cloudy-rain	7,900	--	--
27	58	47	47	46	Cloudy	10,384	6	59
28	52	50	47	46	Cloudy-rain	20,030	--	--
29	56	51	47	46	Rain	22,668	--	--
30	56	48	46	46	"	31,401	--	--
31	54	48	47	46	Partly cloudy	36,030	7	122

TABLE A-8

Nimbus Salmon and Steelhead Hatchery
Weather, Water, and Species Data
February, 1967

Date	Temperature				Weather	American River	Salmon	Steelhead
	Air		Water			flow		
	Maximum	Minimum	Maximum	Minimum		at hatchery		
						C.F.S.		
1	54	40	48	47	Partly cloudy	--	--	--
2	54	38	48	47	Clear -a.m. fog	13,025	--	--
3	54	38	47	46	" " "	10,106	--	--
4	54	41	46	46	Cloudy	8,175	--	--
5	54	43	47	45	Partly cloudy-a.m. fog	3,175	--	--
6	49	38	46	46	Cloudy-fog	7,763	5	66
7	49	38	46	46	Fog	7,424	--	--
8	49	38	46	46	"	6,507	--	--
9	44	39	46	46	"	5,503	--	--
10	65	39	48	46	Partly cloudy-a.m. fog	4,997	1	48
11	52	40	47	47	Fog	5,000	--	--
12	62	42	47	46	Cloudy-a.m. fog	4,990	--	--
13	64	41	47	46	Partly cloudy	4,991	--	--
14	52	35	48	46	Clear	4,990	3	27
15	51	34	46	46	Cloudy	4,503	--	--
16	54	33	47	45	Clear	3,992	--	--
17	58	36	48	46	Partly cloudy	3,748	--	16
18	80	36	48	47	Clear	3,503	--	--
19	60	36	49	47	Partly cloudy	3,509	--	--
20	59	36	48	46	Clear	3,502	--	--
21	60	31	49	47	"	3,248	--	20
22	62	36	49	47	"	2,991	--	--
23	63	36	48	47	Partly cloudy	2,989	--	--
24	58	44	48	48	Cloudy-rain	2,996	--	11
25	54	44	47	47	Partly cloudy-rain	2,996	--	--
26	55	33	47	46	" "	2,999	--	--
27	62	40	48	46	" "	3,001	--	--
28	66	38	48	47	" "	2,996	--	3

TABLE A-9

Nimbus Salmon and Steelhead Hatchery
Weather, Water, and Species Data
March, 1967

Date	Temperature				Weather	American River	Salmon
	Air		Water			flow at hatchery	
	Maximum	Minimum	Maximum	Minimum		C.F.S.	
1	66	40	49	47	Partly cloudy	2,756	--
2	63	38	49	47	Clear	2,493	--
3	57	38	48	47	Partly cloudy	2,417	--
4	57	36	49	47	Clear	1,999	--
5	59	32	48	47	Clear	1,987	--
6	62	44	48	47	"	1,824	28
7	63	44	49	48	Partly cloudy	1,486	--
8	66	39	50	47	" "	1,502	--
9	60	41	48	47	" "	1,501	--
10	55	42	49	47	Cloudy-rain	1,469	21
11	50	40	48	48	" "	1,474	--
12	48	40	48	47	" "	1,500	--
13	49	38	46	46	" "	2,166	--
14	53	36	48	46	Partly cloudy	5,336	--
15	65	40	48	46	" " -rain	7,500	18
16	62	50	50	49	Cloudy-rain	10,717	--
17	62	45	50	48	Partly cloudy	25,070	--
18	63	49	49	48	" "	27,370	--
19	62	40	48	47	" "	19,975	--
20	68	50	49	47	Cloudy-rain	19,299	--
21	68	46	50	47	Partly cloudy	11,502	--
22	68	47	48	47	" "	8,000	20
23	52	65	48	49	" "	8,000	--
24	60	37	49	47	Clear	8,000	--
25	60	40	49	48	Partly cloudy	8,000	--
26	60	44	49	47	Cloudy	8,000	--
27	52	39	49	47	Partly cloudy	7,646	--
28	54	47	48	48	Cloudy-rain	7,500	6
29	56	33	49	47	Partly cloudy	7,500	--
30	52	39	48	47	Cloudy-rain	7,500	--
31	54	40	47	47	" "	7,500	--

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TABLE A-10
Nimbus Salmon and Steelhead Hatchery
Weather, Water, and Species Data
April, 1967

Date	Temperature				Weather	American River	Steelhead
	Air		Water			flow	
	Maximum	Minimum	Maximum	Minimum		at hatchery	
						C.F.S.	
1	58	34	49	47	Partly cloudy	7,500	--
2	60	40	49	48	" "	7,500	--
3	62	38	48	47	" "	7,500	2
4	57	46	48	47	Cloudy-rain	7,500	--
5	58	42	47	46	" "	7,500	--
6	57	46	47	46	" "	7,500	--
7	60	52	50	48	Cloudy	7,500	--
8	62	42	50	49	Partly cloudy	7,500	--
9	62	40	49	47	" "	7,500	--
10	60	54	48	47	Cloudy-rain	7,500	--
11	56	51	47	47	Partly cloudy	7,500	--
12	64	49	49	48	" "	7,500	--
13	58	49	48	48	Cloudy	7,500	--
14	60	46	48	47	Partly cloudy	7,485	--
15	54	42	48	47	" "	7,500	--
16	60	38	48	47	" "	7,480	--
17	58	51	48	48	Cloudy-rain	7,460	--
18	58	38	48	47	" "	7,485	--
19	55	40	48	47	" "	7,485	--
20	56	38	48	47	Partly cloudy	7,485	--
21	53	48	48	48	Cloudy-rain	7,485	--
22	59	38	49	48	Partly cloudy	7,485	--
23	59	44	48	47	Cloudy-rain	7,485	--
24	62	46	49	47	" "	7,485	--
25	62	40	49	48	Partly cloudy	7,485	--
26	62	40	48	48	" "	7,485	--
27	60	46	49	48	" "	7,490	--
28	60	36	49	48	" "	7,490	--
29	64	35	49	48	" "	7,490	--
30	62	37	49	48	" "	7,490	--

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TABLE A-11
Nimbus Salmon and Steelhead Hatchery
Weather and Water Data :
May, 1967

Data	Temperature				Weather	American River
	Air		Water			flow
	Maximum	Minimum	Maximum	Minimum		at hatchery
						C.F.S.
1	69	38	50	48	Partly cloudy	7,490
2	70	43	50	49	Clear	7,490
3	72	53	50	49	"	7,490
4	72	54	50	50	Partly cloudy	7,490
5	72	52	50	49	" "	7,500
6	78	43	51	49	Clear	7,500
7	84	49	51	50	"	7,500
8	85	54	51	50	"	7,500
9	56	54	50	49	Cloudy-rain	7,500
10	64	50	50	49	Partly cloudy	7,500
11	69	50	51	49	" "	7,500
12	68	42	53	50	Clear	7,500
13	78	44	54	50	"	7,500
14	84	46	53	50	"	7,500
15	88	50	55	50	"	7,500
16	92	56	53	61	"	7,500
17	94	58	52	51	"	7,500
18	94	66	53	51	Partly cloudy	7,500
19	92	68	53	51	Clear	7,500
20	95	60	53	51	"	7,500
21	96	60	53	51	"	7,500
22	98	61	54	51	"	7,500
23	94	61	55	53	"	7,500
24	92	53	56	54	"	7,500
25	84	52	58	54	"	7,500
26	82	50	53	51	"	7,750
27	82	52	53	51	"	8,000
28	82	53	55	51	Partly cloudy	8,000
29	76	50	56	51	" "	8,000
30	77	58	57	52	" "	8,000
31	76	50	54	52	" " -rain	8,000

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TABLE A-12
Nimbus Salmon and Steelhead Hatchery
Weather and Water Data
June, 1967

Date	Temperature				Weather	American River
	Air		Water			flow
	Maximum	Minimum	Maximum	Minimum		at hatchery
						C.F.S.
1	64	49	52	51	Cloudy	8,000
2	64	51	54	51	" -rain	8,000
3	78	52	53	52	Clear	8,000
4	83	60	56	52	Partly cloudy	8,000
5	59	52	54	52	Cloudy-rain	8,000
6	73	51	57	51	Partly cloudy	3,000
7	82	50	55	53	" "	8,000
8	84	50	57	53	" "	3,000
9	80	48	55	53	" "	8,000
10	84	50	54	53	" "	8,000
11	84	51	56	52	" "	8,000
12	73	58	57	52	" "	8,000
13	80	56	54	52	" "	8,000
14	88	64	54	52	Clear	8,000
15	90	60	55	53	"	8,000
16	98	68	55	53	Partly cloudy	8,000
17	101	62	56	54	" "	8,500
18	81	57	54	53	" "	8,500
19	84	55	55	52	" "	8,500
20	90	54	55	53	" "	8,500
21	90	56	55	54	" "	8,510
22	92	58	56	54	Clear	8,500
23	92	59	58	54	"	8,500
24	96	59	57	54	"	8,500
25	98	60	56	54	"	8,500
26	94	56	56	54	Partly cloudy	8,500
27	94	58	57	54	Clear	8,500
28	100	65	57	54	"	8,500
29	102	64	57	55	"	8,500
30	104	65	58	56	"	8,500

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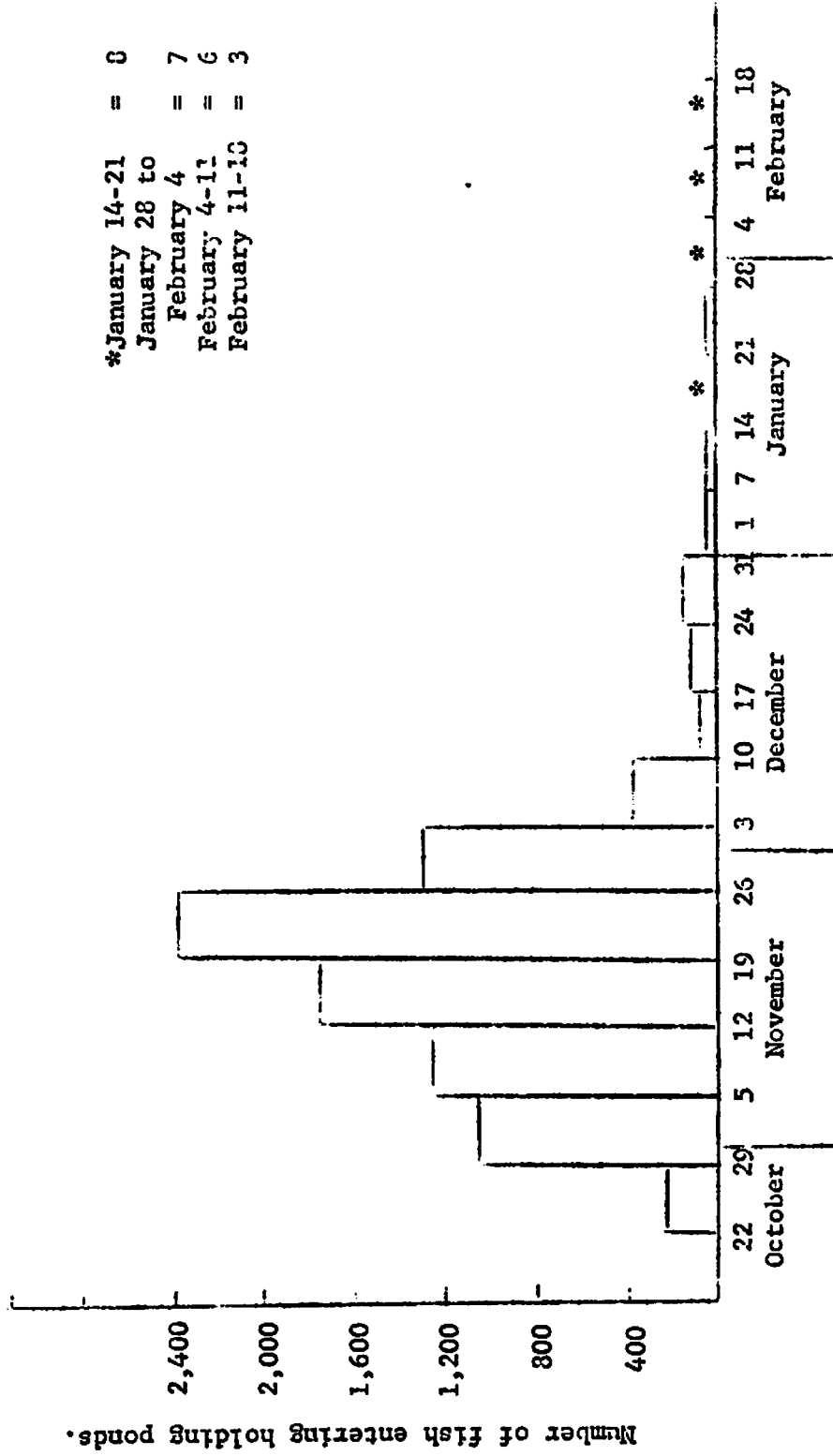


FIGURE A-1. Nimbus Salmon and Steelhead Hatchery fall run of king salmon - 1966-67