

REF 90207

ANNUAL REPORT  
IRON GATE SALMON AND STEELHEAD HATCHERY <sup>1/</sup>  
1981-82

by

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ABSTRACT

This report describes the operation of the hatchery from July 1, 1981 through June 30, 1982. Tables present daily records of water temperatures and weather conditions, daily tabulation of salmonids entering the facility, and total numbers of salmonids reared and released.

There were 2,055 fall-run adult chinook salmon, Oncorhynchus tshawytscha, trapped. An additional 250 adult female chinook were taken from Bogus Creek and Shasta River racks to provide adequate fish for the Klamath River rearing ponds. The 1,148 females spawned produced 3,479,506 eggs. No spring-run chinook salmon were taken. Nine hundred-four adult coho salmon, O. kisutch, were trapped and 423 females spawned. They produced 1,107,395 eggs. A total of 2,261 (1,903 fall-run and 358 spring-run) steelhead, Salmo gairdneri, were trapped and the 633 females spawned produced 1,356,350 eggs.

There were 885,066 fingerling and 1,023,000 yearling chinook salmon, 121,856 yearling coho salmon, and 314,530 yearling steelhead planted in FY 1981-82. No fish were reared in Bogus Pond in 1981-82 FY.

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<sup>1/</sup> Anadromous Fisheries Branch Administrative Report No. 84-1  
Submitted July 1982.

## INTRODUCTION

This report covers the 21st year of operation of the trapping facilities at Iron Gate Hatchery. These facilities were completed by the Pacific Power and Light Company in February 1962, and have been operated by the Department of Fish and Game during the spring and fall of each year.

The hatchery was constructed by the Pacific Power and Light Company to compensate for spawning and nursery areas blocked by the Iron Gate Project. This is the 17th report since the hatchery was completed in February 1976. The Department of Fish and Game, under agreement with the Pacific Power and Light Company, began operation of the hatchery in March 1966. The trapping facilities and hatchery are located on the Klamath River 8 miles east of Hornbrook, Siskiyou County.

This report summarizes the numbers of fish trapped and spawned, production of eggs and fish, and water and weather conditions from July 1, 1981 through June 30, 1982.

Bogus Rearing Pond is located near the mouth of Bogus Creek which enters the Klamath River immediately downstream from Iron Gate Hatchery. It was constructed in 1972 and is usually used to rear wild steelhead which are rescued from drying streams in the Klamath River system in the late spring and early summer. This report contains a summary of the Bogus Pond production from its initial year through 1981-82.

## PRODUCTION SUMMARY

No spring-run chinook salmon were trapped in 1981. Fall-run chinook salmon were taken from September 16 to November 19, 1981 (Figure 1). Coho salmon started entering the trap on October 15 and continued until December 30. Steelhead trout were trapped from September 25, 1981 to April 1, 1982 (Table 1).

## CHINOOK SALMON MAINTENANCE PROGRAM

### History of the 1981 Run

#### Spring Run, 1981 Brood Year

No spring-run chinook salmon appeared at the trap in 1981.

#### Fall Run, 1981 Brood Year

A total of 2,595 fall-run chinook salmon was trapped: 904 males, 1,151 females, and 540 grilse (<56 cm or 22 inches FL). The 1,148 females spawned (including 250 from Bogus Creek and Shasta River racks) produced 3,479,506 eggs, for an average of 3,031 eggs per female. Prespawning mortality was 253 females. Seven lots of eggs were taken with an average fertility of 92%. Approximately 1,138,000 chinook salmon fingerling were on hand as of June 30, 1982.

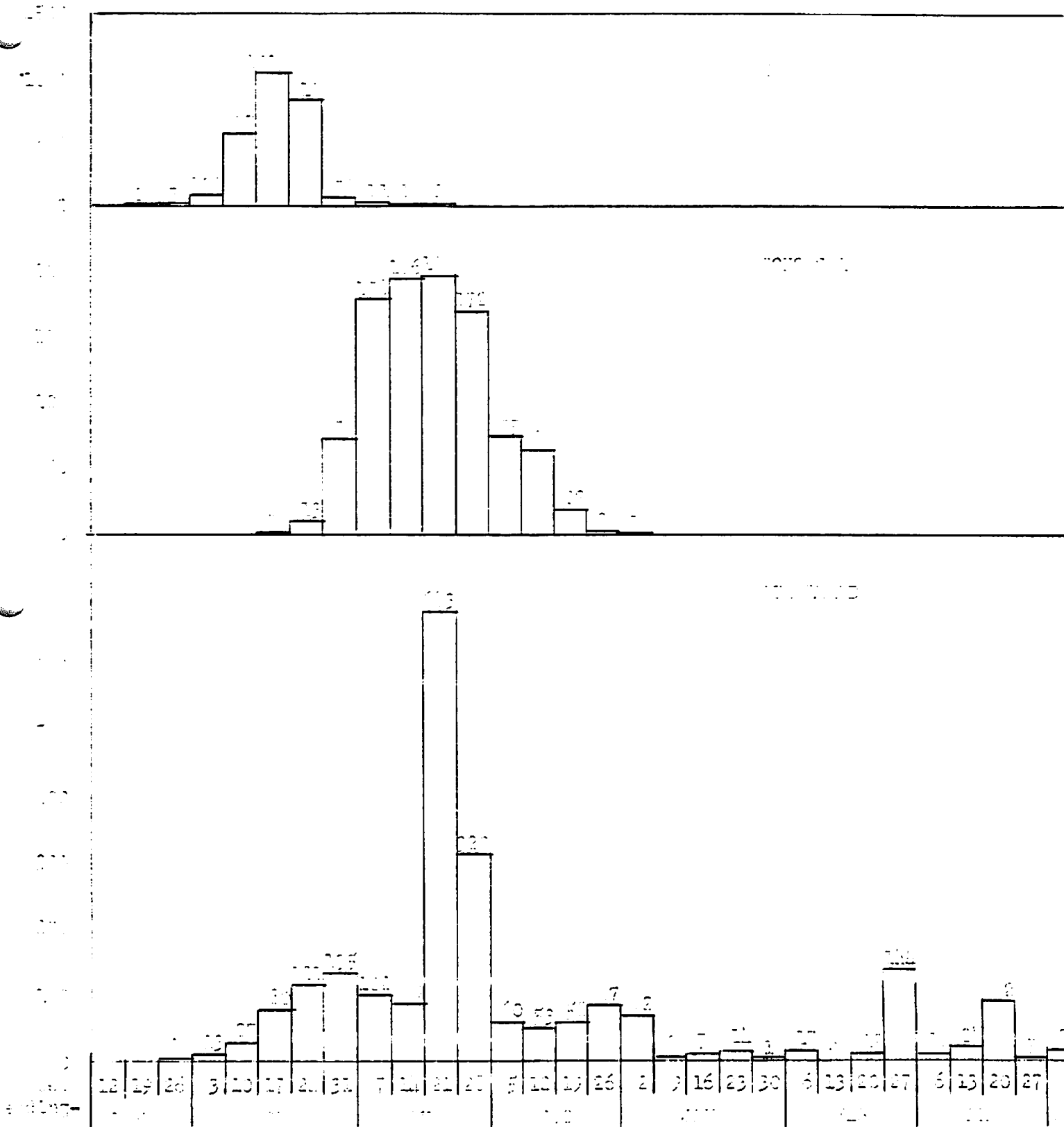


FIGURE 3. Monthly production of outdoor culture, 1951-53, and monthly production of indoor culture, 1951-53, at the University of California, Berkeley, 1951-53 period. Includes grilse.

TABLE 1. Production Summary, Iron Gate Salmon and Steelhead Hatchery, 1981-82

	Adults trapped	Females spawned	Number eggs taken	Number fingerlings planted	Number yearlings planted	Total pounds planted	Number fingerlings transferred	Total pounds transferred	Green eggs shipped	Eyed eggs shipped	Fish on hand 6/30/82
<u>Chinook salmon, spring-run</u>											
1980 BY											
1981 BY		0									
<u>Chinook salmon, fall-run</u>											
1980 BY					1,023,000	113,667					
1981 BY	2,055	1,148 <sup>a/</sup>	3,479,506	885,066		10,058	200,152	1,551			1,138,000
<u>Coho salmon</u>											
1980 BY					124,706	10,244					
1981 BY	904	423	1,107,395						617,800	146,106	107,000
<u>Steelhead</u>											
1981 BY					314,530	23,383					
1982 BY	2,261	633	1,356,350						483,290		409,400

<sup>a/</sup> Includes 250 females from Bogus Creek and Shasta River racks.

Planting 1980-81 Brood Year Chinook Salmon

There were 1,023,000 yearlings planted from October 26 to October 30, 1981 and 885,066 fingerlings planted from June 23 to June 29, 1982 (Table 2). Size at planting ranged from 9/lb (yearlings) to 92/lb (fingerlings). No chinook salmon eggs were shipped from the hatchery. From June 2 through June 14, 1982, 200,152 fingerlings were transferred to Klamath River rearing ponds.

TABLE 2. Chinook Salmon Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1981-82

Race and brood year	Date released	Average size/lb	Number released	Release site	Mark (Coded wire tag #)
Fall run, 1980	10/26-30/81	9	621,479	IGH	-
	10/26-30/81	9	100,621	IGH	AD(6-59-6)
	10/26-30/81	9	300,900	IGH	LV
Total yearlings			1,023,000		
Fall run, 1981	Transferred to Klamath River rearing ponds:				
	06/02-03/82	160	7,000	Thompson Ck. Pond	-
	06/02-03/82	112	20,000	Thompson Ck. Pond	-
	06/02-03/82	136	13,000	Thompson Ck. Pond	LP
	06/03-04/82	160	27,040	Indian Creek Pond	-
	06/03-04/82	136	13,000	Indian Creek Pond	LP
	06/07/82	179	20,048	Redcap Creek Pond	-
	06/10/82	133	7,000	Beaver Creek Pond	-
	06/10/82	102	13,000	Beaver Creek Pond	LP
	06/11/82	112	7,000	Redcap Creek Pond	-
	06/11/82	128	13,000	Redcap Creek Pond	LP
	06/11/82	176	20,064	Beaver Creek Pond	-
	06/14/82	133	20,000	Camp Creek Pond	-
	06/14/82	102	13,000	Camp Creek Pond	LP
	06/14/82	133	7,000	Camp Creek Pond	-
	Planted:				
	06/23-29/82	76	191,216	IGH	AD(6-59-7)
	06/23-29/82	92	187,000	IGH	LV
	06/23-29/82	92	506,850	IGH	-
Total fingerlings			1,085,218		

Marked Chinook Salmon Recovered

During 1981-82, 83 marked chinook salmon were trapped (Table 3). Seventy were Iron Gate marks and 13 (AD) of undetermined origin.

TABLE 3. Marked Chinook Salmon Recovered, Iron Gate Salmon and Steelhead Hatchery, 1981-82 a/

Mark (Coded wire tag #)	Number trapped	Brood year	Race	Number released	Date released	Mean FL (mm)	Average size/lb	Release site
AD(6-59-1)	48	1978	FRKS	191,000 <sup>b/</sup>	11/23/79	-	9	IGH
AD(6-59-2)	6	1979	FRKS	91,000 <sup>c/</sup>	11/17-21/80	141	11	IGH
AD(6-59-3)	16	1979	FRKS	189,420 <sup>d/</sup>	06/16-19/80	77	77	IGH
AD(?)	13	-	-	-	-	-	-	-

a/ Information supplied by Ivan Paulsen, Fisheries Biologist, Yreka.

b/ Number indicates corrected number of fish planted after quality control check. Total number tagged was 200,000.

c/ Number indicates corrected number of fish planted after quality control check. Total number tagged was 100,841.

d/ Number indicates corrected number of fish planted after quality control check. Total number tagged was 207,397.

COHO SALMON MAINTENANCE PROGRAM

History of the 1981 Run

The first coho salmon entered the trap on October 15, 1981, and the last on December 30, 1981. A total of 997 fish was trapped: 402 males, 502 females, and 93 grilse (<56 cm or 22 inches FL). The 423 females spawned produced 1,107,395 eggs for an average of 2,618 eggs per female. Green eggs were shipped to the following installations: 120,000 to Darrah Springs Hatchery; 74,400 to Warm Springs Hatchery; and 423,400 to Mad River Hatchery. Eyed coho eggs were shipped to: 10,800 to Humboldt State University; 104,756 to Mad River Hatchery; and 30,550 to Six Rivers National Forest. From February 4, 1982 through June 9, 1982, 2,850 yearling coho salmon were supplied for the smoltification study at the University of California at Berkeley. Approximately 107,000 fingerlings were held for release as yearlings in 1983.

Planting 1980 Brood Year Coho Salmon

There were 121,856 coho salmon planted during the 1981-82 season (Table 4).

TABLE 4. Coho Salmon Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1981-82

Date	Average size/lb	Number	Release site	Mark (Coded wire tag #)
2/16/82	14.5	25,514	IGH	AD(6-59-48)
3/25/82	14	25,842	IGH	AD(6-59-49)
4/08/82	11	25,000	IGH	AD(6-59-50)
4/23/82	11	25,500	IGH	AD(6-59-51)
5/14/82	10	20,000	IGH	-
Total		121,856		

Marked Coho Salmon Recovered

During 1981-82, 491 marked coho salmon were trapped (Table 5). Of these 420 were Iron Gate marks, 10 were Oregon tags, and 61 (AD) were of undetermined origin.

TABLE 5. Marked Coho Salmon Recovered, Iron Gate Salmon and Steelhead Hatchery, 1981-82 <sup>a/</sup>

Mark (Coded wire tag #)	Number trapped	Brood year	Race	Number <sup>b/</sup> released	Date released	Mean FL (mm)	Average size/lb	Release site
AD(6-59-41)	366	1978	FRSS	48,399 <sup>c/</sup>	04/09/80	149	9	IGH
AD(6-59-44)	19	1979	FRSS	24,347 <sup>d/</sup>	02/27/81	117	27	IGH
AD(6-59-45)	12	1979	FRSS	23,481 <sup>e/</sup>	04/06/81	125	17	IGH
AD(6-59-46)	19	1979	FRSS	22,705 <sup>f/</sup>	04/20/81	138	17	IGH
AD(6-59-47)	4	1979	FRSS	23,654 <sup>g/</sup>	05/04/81	146	16	IGH
AD(?)	61	-	-	-	-	-	-	-

Oregon tagged and planted; no planting information available on the following:

AD(7-20-1)	3	-	-	-	-	-	-	-
AD(7-20-2)	5	-	-	-	-	-	-	-
AD(7-20-6)	1	-	-	-	-	-	-	-
AD(7-23-27)	1	-	-	-	-	-	-	-

<sup>a/</sup> Information supplied by Ivan Paulsen, Fisheries Biologist, Yreka.

<sup>b/</sup> Number indicates corrected number of fish planted after quality control check.

<sup>c/</sup> Total number tagged was 54,536.

<sup>d/</sup> Total number tagged was 25,169.

<sup>e/</sup> Total number tagged was 24,978.

<sup>f/</sup> Total number tagged was 25,239.

<sup>g/</sup> Total number tagged was 25,657.

STEELHEAD MAINTENANCE PROGRAM

History of the 1981-82 Run

Between September 25 and December 31, 1981, 1,903 steelhead entered the trap and were held for later spawning. An additional 358 steelhead were trapped between January 5 and April 1, 1982. The two groups were held and spawned separately.

The 492 fall-trapped females spawned produced 1,053,156 eggs, an average of 2,141 eggs per female. The 141 spring-trapped females spawned produced 303,194 eggs for an average of 2,150 eggs per female. Approximately 483,290 eyed eggs were shipped to various installations: 401,230 to Trinity River Hatchery, 20,000 to NorWest Steelheaders, 60,060 to Six Rivers National Forest, and 2,000 to Simpson Timber Co.

Approximately 409,400 steelhead fingerlings from the 1982 brood year were on hand June 30, 1982.

Planting 1981 Brood Year Steelhead

We planted 114,800 small steelhead yearlings and 199,730 larger yearlings in 1981-82 (Table 7). The smaller yearlings were surplus grade-offs not needed to fulfill planting commitments.

TABLE 7. Juvenile Steelhead Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1981-82

Strain	Brood year	Date released	Average size/lb	Number released	Release site	Mark brand
KR	1981	2/16/82	56	114,800	Iron Gate Lake Mirror Cove	-
KR	1981	4/15/82	10.5	66,000	IGH	RV-"T"
KR	1981	5/14/82	10	66,750	IGH	RV-"O"
KR	1981	6/15/82	8	66,980	IGH	RV-"H"
Total				314,530		

Marked Steelhead Trapped

A total of 1,300 marked steelhead was trapped this season (Table 6). Of these, 1,288 were Iron Gate marks, 9 were Trinity River Hatchery marks, and 3 (dorsal) were of undetermined origin.



TABLE 6. Marked Steelhead Recovered, Iron Gate Salmon and Steelhead Hatchery, 1981-82 <sup>a/</sup>

Mark brand	Number trapped	Brood year	Race	Number released	Date released	Mean FL (mm)	Average size/lb	Release site
<u>Fall run</u>								
LV-RV	3	1977	IGH	200,000 <sup>b/</sup>	04/14/78	-	-	IGH
LP	6	1978	IGH	324,774	03/22/79	175	-	TRH
AD-LV	1	1978	TRH	30,418	04/04/79	198	-	TRH
D-AD	5	1978	IGH	10,033	04/16/79	127	-	IGH
RV	20	1978	IGH	119,264	04/16/79	147	13	IGH
LV	48	1978	IGH	216,850	04/16/79	119	24	IGH
AD-"T" <sup>c/</sup>	372	1979	IGH	59,842	04/15/80	155	10	IGH
AD-"H" <sup>d/</sup>	420	1979	IGH	59,000	05/19/80	173	7.5	IGH
AD-"O" <sup>e/</sup>	259	1979	IGH	61,000	06/25/80	193	5.9	IGH
Dor	3	-	-	-	-	-	-	-
<u>Spring run</u>								
LV-RV	3	1977	IGH	200,000 <sup>b/</sup>	04/14/78	-	-	IGH
LP	1	1978	IGH	324,774	03/22/79	175	-	TRH
RP	1	1978	IGHXTRH	67,570	04/04/79	183	-	TRH
RV	3	1978	IGH	119,264	04/16/79	147	13	IGH
LV	6	1978	IGH	216,850	04/16/79	119	24	IGH
AD-"T" <sup>c/</sup>	53	1979	IGH	59,842	04/15/80	155	10	IGH
AD-"H" <sup>d/</sup>	60	1979	IGH	59,000	05/19/80	173	7.5	IGH
AD-"O" <sup>e/</sup>	36	1979	IGH	61,000	06/25/80	193	5.9	IGH

a/ Information supplied by Ivan Paulsen, Fisheries Biologist, Yreka.

b/ 100,000 at 17/lb with 117 mean FL; 100,000 at 37/lb.

c/ Total AD-"T" x 0.354 (frequency percentage).

d/ Total AD-"H" x 0.400 (frequency percentage).

e/ Total AD-"O" x 0.246 (frequency percentage).

#### Adult Steelhead Planted

There were 682 adult steelhead (fish surplus to hatchery needs) planted in seven Siskiyou County Streams (Table 8).

TABLE 8. Adult Steelhead Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1981-82 <sup>a/</sup>

<u>Date</u>	<u>Stream</u>	<u>Tributary</u>	<u>Number</u>
1/20/82	Etna Creek	Scott River	100
1/21/82	St. Clair Creek	S. Fork Salmon River	100
1/25/82	Seiad Creek	Klamath River	100
1/27/82	Coon Creek	Klamath River	100
2/04/82	Know Nothing Creek	Salmon River	100
2/10/82	Merrill Creek	Salmon River	100
2/18/82	Walker Creek	Klamath River	82
<hr/>			
Total			682

<sup>a/</sup> Data provided by Dave Rogers, Fish Biologist, Yreka Screen Shop.

#### BOGUS REARING POND <sup>1/</sup>

Releases of yearling steelhead reared in Bogus Pond since 1972 have ranged from 10,850 to 38,580 (Table 9). As of June 30, 1982, we have 92,536 rescued steelhead in Bogus Pond.

#### PUBLIC RELATIONS

During the 1981-82 fiscal year, 3,789 people visited the hatchery, including 552 people in organized groups.

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<sup>1/</sup> Data provided by Robert P. Caddell, Fish Habitat Supervisor, Yreka Screen Shop.

TABLE 9. Summary of Bogus Rearing Pond Steelhead Production 1972-73 through 1981-82<sup>a/</sup>

Season	Number of fry stocked	Number of yearlings released	Location	Mark
1972-73	196,553	17,929	Klamath R. @ Ager Bridge	-
		7,860	Shasta R. @ Anderson Grade	-
		5,408	Klamath R. @ Iron Gate Hatch.	-
Total		31,197		
1973-74	129,712	21,000	Bogus Creek	-
		3,060	Kidder Creek	-
		3,060	Scott River	-
		2,970	Mill Creek	-
Total		30,090		
1974-75	85,395	6,032	Mill Creek	-
		5,900	McAdams Creek	-
		2,775	Kidder Creek	-
		2,500	Klamath River	-
Total		17,207		
1975-76	131,200	3,300	Kidder Creek	-
		2,800	Mill Creek	-
		2,750	McAdams Creek	-
		2,000	Bogus Creek	-
Total		10,850		
1976-77	119,352	14,144	Klamath R. @ Iron Gate Hatch.	Ad-D
1977-78	Pond used to rear coho salmon. No estimate of numbers.			
1978-79	123,868	11,810	Klamath R. @ Happy Camp	
1979-80	Pond used for chinook salmon. Total loss.			
1980-81	183,000	38,580	Klamath R. @ Iron Gate Hatch.	LV-"X"
1981-82	No fish were reared in Bogus Pond.			

<sup>a/</sup> Information supplied by Robert P. Caddell, Fish Habitat Supervisor, and Ivan Paulsen, Fisheries Biologist, Yreka.

APPENDIX TABLE 1. Summary of Chinook Salmon Runs, Iron Gate Salmon and Steelhead Hatchery

Season	Fall-trapped spring run*		Fall run				Spring-trapped spring run*		
	Adults	Grilse	Males	Females	Total adults	Grilse	Total fall run	Adults	Grilse
1962-63	+						1,339		
1963-64					1,723	448	2,171		
1964-65			837	1,651	2,488	110	2,598		
1965-66			141	224	365	313	678		
1966-67			1,129	1,610	2,739	325	3,064		
1967-68			850	1,275	2,125	562	2,687		
1968-69			946	1,690	2,636	72	2,708	50	6
1969-70	8	3	518	436	954	1,914	2,868	51	0
1970-71	2	0	2,889	7,395	10,284	219	10,503	10	0
1771-72	16	0	4,412	6,031	10,443	326	10,769	80	0
1972-73	97	4	1,126	1,897	3,023	476	3,499	49	0
1973-74	18	5	3,273	4,135	7,408	1,294	8,702	4	0
1974-75	19	8	4,024	5,371	9,395	410	9,805	0	0
1975-76	25	28	3,131	4,571	7,702	3,425	11,127	0	0
1976-77	13	0	4,604	7,991	12,595	1,130	13,725	0	0
1977-78	0	0	1,514	2,799	4,313	520	4,833	0	0
1978-79	17	0	3,027	3,918	6,945	925	7,870	0	0
1979-80	0	0	1,003	1,298	2,301	257	2,558	0	0
1980-81	0	0	948	1,464	2,412	451	2,863	0	0
1981-82	0	0	904	1,151	2,055	540	2,595	0	0

\* Fall-trapped spring-run chinook salmon are the same brood year as the spring-trapped spring-run salmon of the preceding reporting period. Spring run not differentiated from fall run prior to 1968-69.

+ Blanks indicate data not available.

APPENDIX TABLE 2. Summary of Coho Salmon and Steelhead Trout Runs  
Iron Gate Salmon and Steelhead Hatchery

Season	Coho salmon					Steelhead*		Total
	Males	Females	Adults	Grilse	Total	Fall-trapped early run	Spring-trapped late run	
1963-64	81	95	176	14	190			1,542
1964-65	0	0	0	0	0			1,065
1965-66	2	0	2	0	2			227
1966-67	2	2	4	0	4			299
1967-68	27	24	51	28	79			984
1968-69	14	10	24	333	357			370
1969-70	84	118	202	749	951	381	813	1,194
1970-71	716	671	1,387	236	1,623	292	2,073	2,365
1971-72	74	52	126	21	147	174	3,583	3,757
1972-73	38	18	56	35	91	226	1,060	1,286
1973-74	201	212	413	428	841	665	1,200	1,865
1974-75	193	263	456	41	497	1,062	2,165	3,227
1975-76	45	37	82	478	560	423	1,100	1,523
1976-77	581	795	1,376	381	1,757	695	1,246	1,941
1977-78	92	159	251	375	626	3,197	1,214	4,411
1978-79	263	236	499	250	749	812	1,267	2,079
1979-80	213	282	495	1,906	2,401	505	1,152	1,657
1980-81	580	1,220	1,800	251	2,051	359	888	1,247
1981-82	402	502	904	93	997	1,903	358	2,261

\* Fall-trapped steelhead not differentiated from spring-trapped prior to 1969-70.

APPENDIX TABLE 3. Fork Length (to nearest cm) of Measured Steelhead Iron Gate Salmon and Steelhead Hatchery, 1981-82 a/

Length	Number trapped			
	Fall trap		Spring trap	
	Males	Females	Males	Females
33		1		
34				
35				
36				
37				
38				
39				1
40		3		1
41	1	1		1
42	1	9		3
43	1	11		6
44	3	11		9
45	6	18	3	7
46	9	35	4	16
47	12	23	1	16
48	5	26	8	13
49	12	15	3	12
50	17	8	4	7
51	11	6		5
52	9	7	4	2
53	2	2	2	
54	3	3	3	
55	1	2		
56				1
57	1	3	1	
58	1	1		
59				
60			1	
Average	49	47	49.7	46.8

a/ Information supplied by Ivan Paulsen, Fisheries Biologist, Yreka.

APPENDIX TABLE 4. Iron Gate Salmon and Steelhead Hatchery Weather, Water, and Fish Date, July 1, 1981 through June 30, 1982

July	Temperature (°F)		Weather	Fish trapped
	Maximum	Minimum		
1	55	50	City clouds	Steelhead
2	55	52	rainy	Steelhead
3	54	51	rainy	Steelhead
4	54	52	rainy	Steelhead
5	55	52	overcast	Steelhead
6	54	50	partly cloudy	Steelhead
7	55	50	rainy	Steelhead
8	55	56	rainy	Steelhead
9	54	55	rainy	Steelhead
10	55	52	rainy	Steelhead
11	55	52	rainy	Steelhead
12	54	50	partly cloudy	Steelhead
13	54	50	rainy	Steelhead
14	54	50	rainy	Steelhead
15	55	52	rainy	Steelhead
16	55	52	partly cloudy	Steelhead
17	55	52	rainy	Steelhead
18	54	52	rainy	Steelhead
19	53	52	rainy	Steelhead
20	54	52	rainy	Steelhead
21	54	53	rainy	Steelhead
22	54	52	rainy	Steelhead
23	54	52	rainy	Steelhead
24	54	52	rainy	Steelhead
25	54	52	rainy	Steelhead
26	55	52	rainy	Steelhead
27	55	51	rainy	Steelhead
28	55	52	rainy	Steelhead
29	55	52	rainy	Steelhead
30	55	52	rainy	Steelhead
31	55	52	rainy	Steelhead
Totals				
Cumulative totals				

Appendix Table 4. (continued)

August	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	72	63	84	63	cloudy					
2	77	66	88	68	cloudy					
3	84	75	92	72	cloudy					
4	87	79	96	78	cloudy					
5	85	78	92	77	cloudy					
6	91	83	99	81	cloudy					
7	93	85	102	87	cloudy					
8	94	86	107	88	cloudy					
9	94	87	109	90	cloudy - 1. in.					
10	97	90	109	91	cloudy					
11	97	90	104	96	cloudy					
12	95	84	101	93	cloudy					
13	97	81	99	92	cloudy					
14	97	81	94	93	cloudy					
15	97	87	94	90	cloudy					
16	96	85	96	87	cloudy					
17	97	81	94	81	cloudy					
18	98	87	97	90	cloudy - 1. in.					
19	97	87	97	94	partly cloudy					
20	97	85	94	91	cloudy					
21	98	87	96	95	cloudy					
22	99	90	98	97	cloudy					
23	99	90	94	96	cloudy					
24	94	87	92	91	cloudy					
25	99	89	94	93	cloudy					
26	99	89	94	90	cloudy					
27	99	88	94	90	cloudy					
28	98	88	90	91	partly cloudy					
29	partly cloudy	"	86	91	partly cloudy					
30	"	"	87	93	cloudy					
31	"	"	87	91	cloudy					

Totals

Cumulative totals



Appendix Table 4. (continued)

September	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16						1				
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
Totals						51	4			7
Cumulative totals						51	4			7

Appendix Table 4. (continued)

October	Temperature (°F)				Weather	Fish trapped						
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	Adults	Grilse	
1			73	38	Sale	17	3					
2			79	42	light rain	37	2					
3			61	30	dry cloudy							
4			62	28	dry cloudy							
5			63	32	dry cloudy	58	7					
6			67	36	rain	67	8					
7						117	12					
8			70	36	cloudy	33	18					
9			70	44	rain	172	21					
10			69	32	rain							
11			54	24	dry cloudy							
12												
13			62	38	cloudy	311	11					
14			70	28	dry cloudy	196	69					
15			52	27	sunny	187	61					
16			70	26	sunny	157	37					
17			74	39	sunny							
18			76	36	cloudy							
19			71	39	cloudy	11						
20			71	28	cloudy	11						
21			70	29	cloudy	23						
22			73	28	sunny	77						
23			76	21	sunny	14						
24			71	22	cloudy							
25			77	28	cloudy							
26			77	17	sunny							
27			81	17	sunny	12						
28			66	22	cloudy							
29												
30						11						
31												
Totals						2,001	525	68	20	372		
Cumulative totals						2,052	529	68	20	379		

Appendix Table 4. (continued)

November	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	Out of Order									
2										
3			61	27	sunny	1	4	91	16	87
4			63	27	cloudy					
5			63	26	high clouds					
6			61	37	ptly cloudy	1	3	16	3	47
7			64	30	ptly cloudy					
8			53	29	sunny					
9			52	26	sunny			70	11	27
10			60	26	sunny					
11			60	26	cloudy, mist					
12			63	32	rainy	1		98	17	59
13			62	32	overcast					
14			50	42	rainy					
15			48	46	rainy					
16			48	40	rainy			59	7	109
17			52	38	partly cl.			36	1	103
18			46	25	overcast		1	20	1	120
19							1	19	1	85
20			60	30	cloudy			23		107
21			44	42	rain					
22			48	38	cloudy					
23			45	37	rain			70		102
24			50	39	rain			54		77
25			42	26	sunny			11		77
26										
27			43	28	sunny			43	1	7
28			44	28	windy					
29			47	22	sunny - clear					
30			36	19	overcast			31		37
<b>Totals</b>						<b>3</b>	<b>11</b>	<b>717</b>	<b>71</b>	<b>1,242</b>
<b>Cumulative totals</b>						<b>2,055</b>	<b>540</b>	<b>785</b>	<b>91</b>	<b>1,621</b>

Appendix Table 4. (continued)

December	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	Out of Order		40	31	cloudy			12		6
2			47	30	cloudy			11	1	2
3			42	30	cloudy					1
4								7		1
5			50	20	light rain					
6			50	40	rain					
7			52	27	cloudy			13	1	10
8			51	27	sunny			7		1
9			40	40	rain					
10			46	32	pty cloudy			9		24
11			45	28	cloudy			5		10
12			41	30	rain					
13			42	24	rain					
14			41	37	rain			12		22
15			44	22	pty cloudy			4		2
16			44	18	sunny					
17			46	22	rain					
18			40	20	rain			7		11
19										
20										
21										
22			41	31	cloudy			3		7
23										
24										
25			46	22	rain, clouds					
26			42	25	rain					
27			33	26	cloudy					
28			42	29	rain					
29			40	27	rain					
30								1		2
31										
<b>Totals</b>								119	2	282
<b>Cumulative totals</b>						2,055	540	904	93	1,903

Appendix Table 4. (continued)

January	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	Out of order									
2										
3			40	35	snow					
4			36	18	snow					
5			37	16	sunny					
6			23	10	sunny					
7			27	7	sunny					
8										
9			17	14	sunny					
10			12	11	sunny					
11			15	17	partly cloudy					
12			15	17	sunny					
13			14	14	sunny					
14			12	14	sunny					
15			18	18	sunny					
16			16	18	clear					
17			32	23	snow					
18			29	21	snow					
19			27	24	cloudy					
20			24	25	snow					
21			37	24						
22			17	23	cloudy					
23			16	20	cloudy					
24			25	20	partly cloudy					
25			21	22	rain					
26			17	22	cloudy					
27			12	20	snow					
28			10	17	sunny					
29			17	15	sunny					
30			11	20	sunny					
31										
<b>Totals</b>									28	
<b>Cumulative totals</b>						2,055	540	904	93	1,931

Appendix Table 4. (continued)

February	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1			50	15	sunny					1
2			53	19	sunny					
3			51	19	sunny					
4			57	21	cloudy					
5			55	20	partly cloudy					
6			54	19	partly cloudy					
7			52	18	partly cloudy					
8			52	18	partly cloudy					
9			50	16	sunny					
10			56	20	sunny					
11			52	18	cloudy					
12			52	18	cloudy					
13			50	16	rain					
14			50	16	rain					
15			53	19	rain					
16			47	13	rain					1
17			44	10	overcast					
18			43	9	rain					
19			42	8	overcast					
20			42	8	overcast					
21			43	9	rain					
22			43	9	rain					
23			43	9	rain					
24			43	9	rain					
25			44	10	overcast					
26			46	12	partly cloudy					
27			44	10	rain					
28			46	12	partly cloudy					
29			44	10	rain					
30			44	10	rain					
Totals										187
Cumulative totals						2,055	540	904	93	2,118

Appendix Table 4. (continued)

March	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1			40	21	rain					
2	51.0 - 67.0		46	3	rain					
3			46	3	rain					
4			44	20	overcast					
5			47	21	rain					
6			41	15	overcast					
7			51	21	rain					
8			52	19	overcast					
9			53	21	overcast					
10			42	24	rain					
11			37	35	rain, wind					
12			47	21	overcast					
13			48	27	overcast					
14			40	29	rain					
15			50	30	rain					
16										
17										
18			48	21	rain					
19			40	22	overcast					
20			51	21	overcast					
21			44	21	overcast					
22			47	22	rain					
23			60	21	rain					
24			47	24	rain					
25			42	21	rain					
26			47	21	rain					
27			47	1	rain					
28			47	1	rain					
29			47	1	rain					
30			47	1	rain					
31			41	1	rain					
32			41	1	rain					
33			41	1	rain					
34			41	1	rain					
35			41	1	rain					
36			41	1	rain					
37			41	1	rain					
38			41	1	rain					
39			41	1	rain					
40			41	1	rain					
41			41	1	rain					
42			41	1	rain					
43			41	1	rain					
44			41	1	rain					
45			41	1	rain					
46			41	1	rain					
47			41	1	rain					
48			41	1	rain					
49			41	1	rain					
50			41	1	rain					
51			41	1	rain					
52			41	1	rain					
53			41	1	rain					
54			41	1	rain					
55			41	1	rain					
56			41	1	rain					
57			41	1	rain					
58			41	1	rain					
59			41	1	rain					
60			41	1	rain					
61			41	1	rain					
62			41	1	rain					
63			41	1	rain					
64			41	1	rain					
65			41	1	rain					
66			41	1	rain					
67			41	1	rain					
68			41	1	rain					
69			41	1	rain					
70			41	1	rain					
71			41	1	rain					
72			41	1	rain					
73			41	1	rain					
74			41	1	rain					
75			41	1	rain					
76			41	1	rain					
77			41	1	rain					
78			41	1	rain					
79			41	1	rain					
80			41	1	rain					
81			41	1	rain					
82			41	1	rain					
83			41	1	rain					
84			41	1	rain					
85			41	1	rain					
86			41	1	rain					
87			41	1	rain					
88			41	1	rain					
89			41	1	rain					
90			41	1	rain					
91			41	1	rain					
92			41	1	rain					
93			41	1	rain					
94			41	1	rain					
95			41	1	rain					
96			41	1	rain					
97			41	1	rain					
98			41	1	rain					
99			41	1	rain					
100			41	1	rain					
Totals										123
Cumulative totals						2,055	540	904	93	2,414

Appendix Table 4. (continued)

April	Temperature ( <sup>o</sup> F)				Weather	Fish trapped				Steelhead trout
	Water		Air			Chinook salmon		Coho salmon		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	Out of cover		50	19	rain					10
2			60	29	cloudy, drizzle					
3			55	24	partly cloudy					
4			55	24	partly cloudy					
5			55	25	partly cloudy					
6			65	35	partly cloudy					
7			65	35	partly cloudy					
8			65	35	partly cloudy					
9			65	35	partly cloudy					
10			64	36	rain					
11			60	32	windy, rain					
12			60	31	windy, rain					
13			57	30	windy, rain					
14			56	29	windy, rain					
15			60	32	cloudy					
16			60	32	cloudy					
17			62	34	cloudy					
18			61	33	cloudy					
19			60	32	cloudy					
20			61	33	cloudy					
21			62	34	cloudy					
22			62	34	cloudy					
23			62	34	cloudy					
24			62	34	cloudy					
25			62	34	cloudy					
26			62	34	cloudy					
27			62	34	cloudy					
28			62	34	cloudy					
29			62	34	cloudy					
30			62	34	cloudy					
31			62	34	cloudy					
Totals										20
Cumulative totals						2,055	540	904	93	2,261



Appendix Table 4. (continued)

May	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1			71	36	high clouds					
2			74	32	rainy					
3			73	28	cloudy					
4			69	29	cloudy					
5			80	34	rainy					
6			77	36	cloudy					
7			72	29	clouds					
8			74	37	overcast, windy					
9			67	17	high clouds					
10			63	27	high clouds					
11			64	26	rainy					
12			70	32	rainy					
13			74	32	cloudy					
14			73	18	cloudy					
15			71	33	rainy					
16			69	31	rainy					
17			67	17	overcast					
18			62	21	cloudy					
19			75	33	rainy					
20			69	31	rainy					
21			70	19	rainy					
22			73	31	high clouds					
23			73	19	high clouds					
24			68	27	cloudy					
25			66	19	rainy					
26			65	18	cloudy, drizzle					
27			75	34	cloudy					
28			74	31	cloudy					
29			65	30	rainy					
30			67	18	rainy					
31			67	15	cloudy, drizzle					
32			67	15	cloudy, drizzle					

Totals 2,055 540 904 93 2,261

Cumulative totals

Appendix Table 4. (continued)

June	Temperature (°F)				Weather	Fish trapped					
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout	
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse		
1			74		part cloudy						
2			71		rainy						
3		4			partly cloudy						
4		11			cloudy						
5		11			cloudy						
6		11			cloudy						
7		11			partly cloudy						
8		11			partly cloudy						
9		11			cloudy						
10		11			cloudy						
11		16			cloudy						
12		16			partly cloudy						
13		16			partly cloudy						
14		16			partly cloudy						
15		16			partly cloudy						
16		16			partly cloudy						
17		16			partly cloudy						
18		16			partly cloudy						
19		16			partly cloudy						
20		16			partly cloudy						
21		16			partly cloudy						
22		16			partly cloudy						
23		16			partly cloudy						
24		16			partly cloudy						
25		16			partly cloudy						
26		16			partly cloudy						
27		16			partly cloudy						
28		16			partly cloudy						
29		16			partly cloudy						
30		16			partly cloudy						
31		16			partly cloudy						

Totals  
 Cumulative 2,055 540 904 93 2,261