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State of California  
The Resources Agency

DEPARTMENT OF FISH AND GAME

ANNUAL REPORT  
IRON GATE SALMON AND STEELHEAD HATCHERY  
1982-83

by

Curtis A. Hiser  
Region I, Inland Fisheries

Anadromous Fisheries Branch  
Administrative Report # 85-02  
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ABSTRACT

This report describes the operation of the hatchery from July 1, 1982 through June 30, 1983. Tables present daily records of water temperatures and weather conditions, daily numbers of salmonids entering the hatchery, and total numbers of salmonids reared and released.

There were 8,353 fall-run adult chinook salmon, Oncorhynchus tshawytscha, trapped which produced 10,724,310 eggs. No spring-run chinook salmon were taken. The 1,133 adult coho salmon, O. kisutch, produced 844,745 eggs; and 2,703 (1,267 fall-run and 1,436 spring-run) steelhead, Salmo gairdneri, produced 1,820,990 eggs.

About 1,000,530 fingerling and 1,002,003 yearling chinook salmon; 393,130 fingerling and 80,672 yearling coho salmon; and 60,020 fingerling and 85,320 yearling steelhead were planted and/or shipped in FY 1982-83.

The production of steelhead from Bogus Rearing Pond ranged from 10,850 in 1976 to 38,580 in 1981; 22,200 steelhead were planted from Bogus Pond in 1983.

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<sup>a/</sup> Anadromous Fisheries Branch Administrative Report No. 85-02  
Submitted July, 1983.

## INTRODUCTION

This report covers the 22nd 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 18th report since the hatchery was completed in February 1966. 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, 1982 through June 30, 1983. Historical records are provided in appendix tables.

Bogus Rearing Pond is located near the mouth of Bogus Creek, which is 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 1982-83.

## CHINOOK SALMON MAINTENANCE PROGRAM

### History of the 1982 Run

#### Spring Run, 1982 Brood Year

No spring-run chinook salmon appeared at the trap in 1982.

#### Fall Run, 1982 Brood Year

A total of 10,186 fall-run chinook salmon was trapped: 3,805 males, 4,548 females, and 1,833 grilse (< 56 cm or 22 inches FL) (Figure 1). There were 3,435 females spawned producing 10,724,310 eggs, for an average of 3,122 eggs per female (Table 1). Prespawning mortality was 1,113 females (24.5%). Sixteen lots of eggs were taken with an average fertility of 85%. There were 3,789,736 eyed eggs shipped from the hatchery: 1,215,120 to Mad River Hatchery, 2,527,600 to Trinity River Hatchery, 39,960 to Six River National Forest. A small lot of 7,056 was shipped to Dr. E. Gordon Grau at the Hawaiian Institute of Marine Biology, Kaneohe, Hawaii, for use in smoltification studies. Approximately 1,160,000 chinook salmon fingerlings were on hand as of June 30, 1983.

#### Distribution of 1981 Brood Year Chinook Salmon

There were 1,002,003 yearlings planted from November 15 to November 18, 1982, which averaged 9.5/lb (Table 2). Approximately 400 salmon were sacrificed by hatchery personnel for smoltification studies in cooperation with the University of California at Berkeley.

TABLE 1. Production Summary, 1982-83

	Adults trapped	Eggs taken or received	Eggs transferred	Fingerlings planted and transferred	Yearlings planted	Total pounds planted and transferred
<u>Chinook salmon</u>						
1981 BY					1,002,003	105,474
1982 BY	8,353	10,724,310	3,789,736	1,000,530		11,641
<u>Coho salmon</u>						
1981 BY					80,672	6,244
1982 BY	1,133	844,745	96,986	393,130		1,352
<u>Steelhead</u>						
1982 BY				20,020	85,320	6,467
1983 BY	2,703	1,820,990		40,000		48

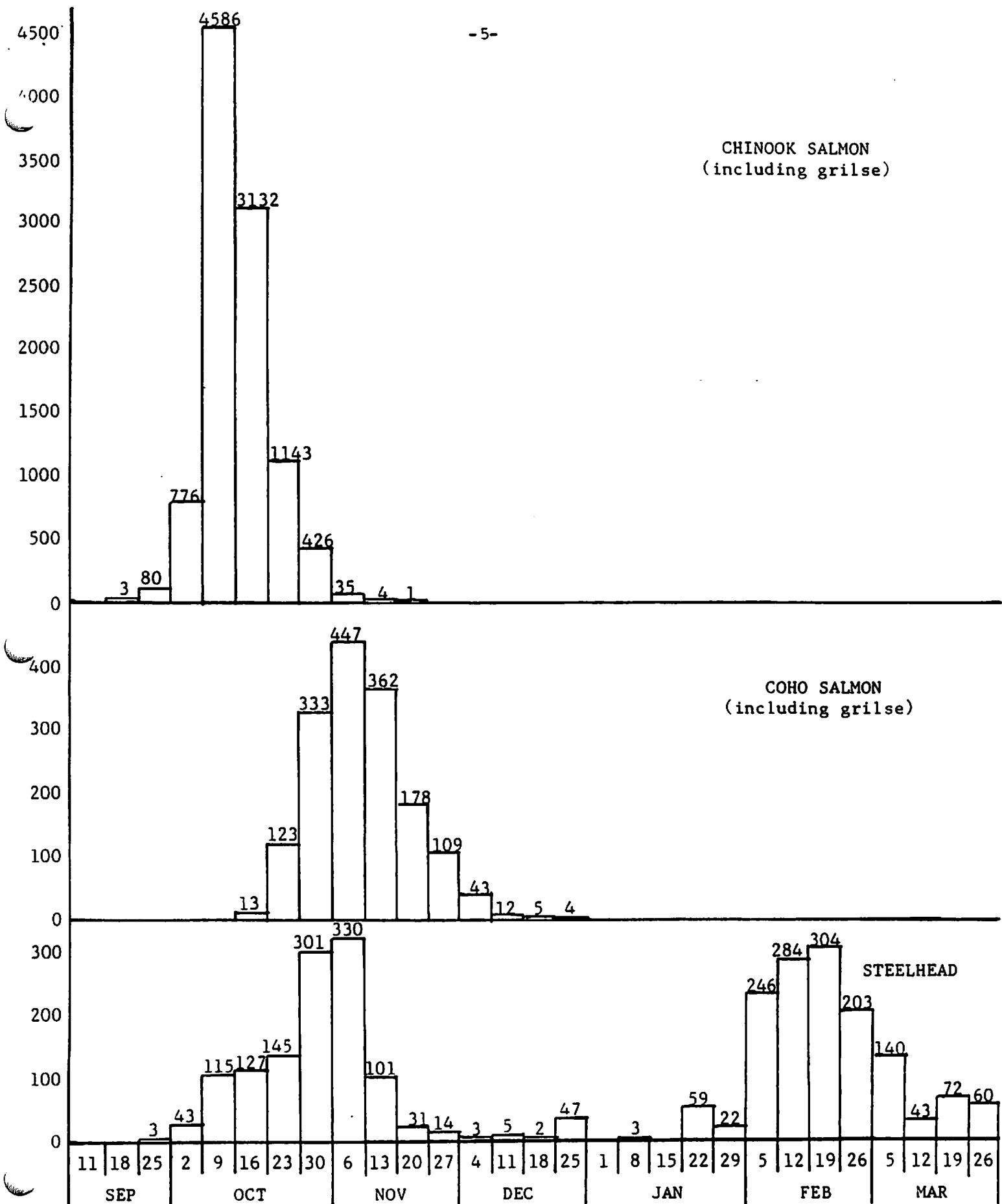


FIGURE 1. Weekly numbers of chinook salmon, coho salmon, and steelhead trapped at Iron Gate Salmon and Steelhead Hatchery, 1982-83 season.

# Distribution of 1982 Brood Year Chinook Salmon

There were 782,530 fingerling salmon planted from June 9 to June 28, 1983 which ranged in size from 66 to 114 per pound (Table 2). From June 6 through June 29, 1983, 218,000 fingerling salmon were transferred to the Klamath River Rearing Ponds (Table 2).



TABLE 2. Iron Gate Hatchery Chinook Salmon Distribution Data, 1982-83

Race and broodyear	Date released	Average size/lb	Number released	Release site	Mark (Coded wire tag #)
Fall-run, 1981	11/15-18/82	9.5	93,141	IGH	Ad(6-59-4)
	11/15-18/82	9.5	36,762	IGH	Ad(6-59-18)
	11/15-18/82	9.5	35,917	IGH	Ad(6-59-19)
	11/15-18/82	9.5	300,000	IGH	LV
	11/15-18/82	9.5	536,183	IGH	-
Total yearlings			1,002,003		
Fall-run, 1982	Transferred to Klamath River Rearing Ponds:				
	6/6/83	114	13,000	Camp Creek	LP
	6/6/83	140	27,000	Camp Creek	-
	6/7/83	114	13,000	Red Cap Creek	LP
	6/7/83	130	27,000	Red Cap Creek	-
	6/8/83	114	13,000	Indian Creek	LP
	6/8/83	127	27,000	Indian Creek	-
	6/9/83	114	13,000	Thompson Creek	LP
	6/9/83	127	27,000	Thompson Creek	-
	6/10/83	114	2,640	Pecwan Creek	LP
	6/10/83	127	5,360	Pecwan Creek	-
	6/10/83	114	3,300	Perch Creek	LP
	6/10/83	127	6,700	Perch Creek	-
	6/29/83	108	13,000	Beaver Creek	LP
	6/29/83	108	27,000	Beaver Creek	-
	Planted:				
	6/9-15/83	114	56,000	S. F. Salmon R.	Ad(6-59-20)
	6/23/83	75	100,000	Klamath Glen	Ad(6-59-10)
	6/27-28/83	66	200,000	IGH	Ad(6-59-9)
	6/27-28/83	90	133,800	IGH	LV
	6/27-28/83	83	292,730	IGH	-
Total fingerlings			1,000,530		

Marked Chinook Salmon Recovered

Of the 1,374 marked chinook salmon trapped during 1982-83 (Table 3), 1,020 were Iron Gate marks, 18 were from the Klamath River Rearing Ponds, 3 from Trinity River Hatchery, 2 from Cole Rivers Hatchery in Oregon and 331 (Ad) were of undetermined origin.

TABLE 3. Marked Chinook Salmon Recovered at Iron Gate Hatchery, 1982-83<sup>a/</sup>

Mark (Coded wire tag #)	Number trapped	Release date						
		Brood year	Race	Number released	Date released	Mean FL (mm)	Average size/lb	Release site
Ad(6-59-1)	280	1978	FRKS	191,000	11/23/79	-	9	IGH
Ad(6-59-2)	124	1979	FRKS	91,000	11/17-21/80	141	11	IGH
Ad(6-59-3)	169	1979	FRKS	189,420	6/16-19/80	77	77	IGH
Ad(6-59-5)	55	1980	FRKS	202,900	6/81	83	70	IGH
Ad(6-59-6)	12	1980	FRKS	100,621	10/26-30/81	172	9	IGH
Ad(6-59-12)	3	1980	FRKS	36,761	6/8/81 <sup>b/</sup>	-	100	Beaver Ck.
Ad(6-59-13)	1	1980	FRKS	5,000 <sup>c/</sup>	10/26/83	-	7.3	Thompson Ck.
Ad(6-59-14)	1	1980	FRKS	22,000	10/9/81	-	9	Red Cap Ck.
Ad(6-59-15)	2	1980	FRKS	39,086	5/29/81 <sup>b/</sup>	-	100	Camp Ck.
Ad(6-59-16)	7	1980	FRKS	14,625	10/27/81	-	6.5	Indian Ck.
Ad(6-59-17)	4	1980	FRKS	10,788	10/28/81	-	8.7	Camp Ck.
Ad(6-59-18)	2	1981	FRKS	36,762 <sup>d/</sup>	11/15-18/82	-	9.5	IGH
Ad(6-61-15)	1	1978	FRKS	156,080	3/11-12/80	165	9	TRH
Ad(6-61-17)	1	1979	FRKS	193,897	6/26/80	78.7	86	TRH
Ad(6-61-20)	1	1979	FRKS	82,982	3/4-5/81	-	7.4	TRH
Ad(7-18-53)	2	1978	-	24,394	3/80	-	6.8	CRH
Ad(?)	331	-	-	-	-	-	-	-
LV	378	-	FRKS	1,441,993	Combined annual releases		-	IGH

- <sup>a/</sup> Information supplied by Ivan Paulsen, Fishery Biologist, and Iron Gate files.  
<sup>b/</sup> Escaped from ponds.  
<sup>c/</sup> Original number tagged in May 1982.  
<sup>d/</sup> Oregon Moist Pellet group of feed experiment.

## COHO SALMON MAINTENANCE PROGRAM

### History of the 1982 Run

The first coho salmon entered the trap on October 11, 1982, and the last on December 22, 1982 (Figure 1). A total of 1,629 fish was trapped: 499 males, 634 females, and 496 grilse (56 cm or 22 inches FL). The 356 females spawned produced 844,745 eggs, for an average of 2,373 eggs per female. There were 25,066 eyed eggs shipped to Dr. E. Gordon Grau at the Hawaiian Institute of Marine Biology in Kaneohe, Hawaii, 31,920 were shipped to Humboldt Fishermen's Marketing Association, and 40,000 were transferred to the Six Rivers National Forest. From July 1, 1982, through June 30, 1983, 7,500 fingerling and yearling coho were supplied to the University of California at Berkeley for smoltification studies. An additional 800 coho salmon were sacrificed at Iron Gate by hatchery personnel for blood plasma sampling in cooperation with the University. There were 40,000 coho fingerlings planted by the U.S. Forest Service in Bluff Creek, and 353,130 fingerlings were transferred to Mad River Hatchery. Approximately 150,000 fingerlings were held for release as yearlings in 1984.

### Planting 1981-82 Brood Year Coho Salmon

There were 120,672 coho salmon planted during the 1982-83 season (Table 4).

TABLE 4. Iron Gate Hatchery Coho Salmon Planting Data, 1982-83

Date	Average size/lb	Number	Brood year	Release site	Mark (Coded wire tag #)
2/4/83	14	20,257	1981	IGH	Ad(6-59-52)
3/14/83	14	20,000	1981	IGH	Ad(6-59-53)
3/28/83	12	20,015	1981	IGH	Ad(6-59-54)
4/13/83	12	20,400	1981	IGH	Ad(6-59-55)
Total yearlings		80,672			
5/18-19/83	643	40,000	1982	Bluff Creek	-
Transferred to Mad River Hatchery:					
6/7/83	284	227,200	1982	MRH	-
6/17/83	257	125,930	1982	MRH	-
Total fingerlings		393,130			

Marked Coho Salmon Recovered

Of the 1,203 marked coho salmon recovered in the trap (Table 5), 601 were of Iron Gate origin and 602 (Ad) were of undetermined origin.

TABLE 5. Marked Coho Salmon Recovered, 1982-83<sup>a/</sup>

Marked (Coded wire tag #)	Number trapped	Release data						
		Brood year	Race	Number released	Date released	Mean FL (mm)	Average size/lb	Release site
Ad(6-59-44)	63	1979	FRSS	24,347	2/27/81	117	27	IGH
Ad(6-59-45)	100	1979	FRSS	23,481	4/6/81	125	17	IGH
Ad(6-59-46)	100	1979	FRSS	22,705	4/20/81	138	17	IGH
Ad(6-59-47)	80	1979	FRSS	23,654	5/4/81	146	16	IGH
Ad(6-59-48)	10	1980	FRSS	25,514	2/16/82	132	14.5	IGH
Ad(6-59-49)	41	1980	FRSS	25,842	3/25/82	135	14	IGH
Ad(6-59-50)	99	1980	FRSS	25,000	4/8/82	152	11	IGH
Ad(6-59-51)	108	1980	FRSS	25,500	4/23/82	154	11	IGH
Ad(?)	602	-	-	-	-	-	-	-

<sup>a/</sup> Information supplied by Ivan Paulsen, Fishery Biologist, Yreka, and Iron Gate files.

## STEELHEAD TROUT MAINTENANCE PROGRAM

### History of the 1982-83 Run

Between September 20 and December 31, 1982, 1,267 steelhead entered the trap and were held for later spawning. An additional 1,436 steelhead were trapped between January 5 and March 23, 1983 (Table 1).

The 228 fall-trapped females spawned produced 503,990 eggs, for an average of 2,210 eggs per female. The 572 spring-trapped females spawned produced 1,317,000 eggs, for an average of 2,302 per female. Thus there were 1,820,990 eggs taken from 800 females. There were 40,075 eyed eggs shipped to NorWest Steelheaders and 60,720 eyed eggs delivered to Six Rivers National Forest. Approximately 1,000 steelhead were shipped to the University of California at Berkeley for use in smoltification studies. In addition, 720 steelhead were sacrificed by hatchery personnel for plasma sampling in coordination with the University for the smoltification studies.

Approximately 1,274,193 steelhead fingerlings from the 1983 broodyear were on hand June 30, 1983.

# Planting 1982 Broodyear Steelhead

We planted 85,320 steelhead yearlings in 1982-83 (Table 6). There were 20,020 fingerlings of the 1982 BY planted by U. S. Forest Service, United States Forest Service personnel also planted 40,000 fingerlings of the 1983 brood year.

TABLE 6. Iron Gate Hatchery Juvenile Steelhead Planting Data, 1982-83

Strain	Brood year	Date released	Average size/lb	Number released	Release site	Mark Brand
KR	1982	8/25/82	385	20,020	Bluff Creek	-
KR	1982	5/12/83	14	25,270 <sup>a/</sup>	IGH	Freeze Brand "bar" R/side
KR	1982	5/12/83	11	25,050 <sup>b/</sup>	IGH	Freeze Brand "bar" L/side
KR	1982	5/12/83	15	35,000	IGH	-
KR	1983	5/26-27/83	829	40,000	Bluff Creek	-
Total				145,340		

<sup>a/</sup> Smoltification Study - Control feed group.

<sup>b/</sup> Smoltification Study - Thyroid Hormone feed group.



Marked Steelhead Trapped

A total of 1,829 marked steelhead were trapped this season (Table 7). Of these, 580 were Iron Gate marks; 5 were Trinity River Hatchery marks; and 430 (Ad "?"), 812 (LV "?"), and 1 (Dor) were of undetermined origin.

TABLE 7. Marked Steelhead Recovered at Iron Gate Hatchery, 1982-83 Fall Run <sup>a/</sup>

Mark Brand	Number trapped	Brood year	Race	Release data				
				Number released	Date released	Mean FL (mm)	Average size/lb	Release site
Ad-"T"	17	1979	IGH	59,842	4/15/80	155	10	IGH
Ad-"H"	32	1979	IGH	59,000	5/19/80	173	7.5	IGH
Ad-"O"	23	1979	IGH	61,000	6/25/80	193	5.9	IGH
Ad-"?" <sup>b/</sup>	199	-	-	-	-	-	-	-
LV-"H"	32	1980	IGH	66,000	4/15/81	150	10	IGH
LV-"O"	8	1980	IGH	66,000	5/15/81	149	13	IGH
LV-"X"	3	1980	Rescued SH	38,580	-	145	-	IGH
LV-"?"	441	-	-	-	-	-	-	-
LP	1	1978	IGH	324,774	3/22/79	175	-	TRH
RV	1	1978	IGH	119,264	4/16/79	147	13	IGH
Dor-Ad	1	1976	Rescued SH	14,144	-	-	-	IGH
Dor	1	-	-	-	-	-	-	-
Ad-RP	1	-	-	-	-	-	-	-

TABLE 7 (con't.). Marked Steelhead Recovered, 1982-83 Spring Run<sup>a/</sup>

Release Data									
Mark	Number	Brood	Year	Race	Number	Date	Mean	Average Release	Brand
	trapped	year			released	released	FL (mm)	size/lb site	
Ad-"T"	33	1979	IGH	59,842	4/15/80	155	10	IGH	
Ad-"H"	69	1979	IGH	59,000	5/19/80	173	7.5	IGH	
Ad-"O"	63	1979	IGH	61,000	6/25/80	193	5.9	IGH	
Ad-"2"b/	231	-	-	-	-	-	-	-	
LV-"H"	184	1980	IGH	66,000	4/15/81	150	10	IGH	
LV-"O"	63	1980	IGH	66,000	5/15/81	149	13	IGH	
LV-"T"	5	1980	IGH	66,000	6/15/81	149	17	IGH	
LV-"X"	42	1980 Rescued	SH	38,580	-	145	-	IGH	
LV-"2"	371	-	-	-	-	-	-	-	
RV	3	1978	IGH	119,264	4/16/79	147	13	IGH	
LP	4	1978	IGH	324,774	3/22/79	175	-	TRH	
LVRV	1	1977	IGH	200,000	4/14/78	117	17	IGH	

a/ Information supplied by Ivan Paulsen, Fishery Biologist, and Iron Gate files.  
b/ Indicates freeze branded letter not distinguishable.

Adult Steelhead Planted

We planted 276 adult steelhead (fish not needed to meet hatchery needs) in six Siskiyou County streams (Table 8).

TABLE 8. Adult Steelhead Planting Data, 1982-83 1/

Date	Stream	Tributary	Number
2/25/83	Knownothing Creek	S. Fork Salmon River	75
3/3/83	Canyon Creek	Scott River	53
3/3/83	Middle Creek	Scott River	15
3/10/83	Walker Creek	Klamath River	35
3/10/83	Seiad Creek	Klamath River	35
3/14/83	Mill Creek	Indian Creek-- Klamath River	63
Total			276

1/ Data provided by Dave Rogers, Fishery Biologist, Yreka Screen Shop.

#### BOGUS REARING POND

Releases of yearling steelhead reared in Bogus Pond since 1972 have ranged from 10,850 - 38,580 (Table 9). As of June 30, 1982, we have 142,000 rescued steelhead in Bogus Pond.

#### PUBLIC RELATIONS

During the 1982-83 fiscal year, 3,974 people visited the hatchery, including 269 people in organized groups.

TABLE 9. Summary of Bogus Rearing Pond Steelhead Production  
1972-73 through 1982-83<sup>a/</sup>

Season	Number of fry stocked	Number of yearlings released	Location	Mark
1972-73	196,553	17,929	Klamath R. @ Ager Br.	-
		7,860	Shasta R. @ Anderson Grade Br.	-
		5,408	Klamath R. @ Iron Gate Hatchery	-
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 Hatchery	Ad-D
1977-78	Pond used to rear silver salmon. No estimate of numbers.			
1978-79	123,868	11,810	Klamath R. @ Happy Camp	-
1979-80	Pond used for king salmon. Total loss.			
1980-81	183,000	38,580	Klamath R. @ Iron Gate	OV-"X"
1981-82	No fish were reared in Bogus Pond.			
1982-83	92,536	22,200	Klamath R. @ Iron Gate	-

<sup>a/</sup> Information supplied by Robert P. Caddell, Fish Habitat Supervisor; Ivan Paulsen, Fishery Biologist; and Iron Gate records.

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

Season	Fall-trapped Spring run*		Fall run				Spring-trapped Spring run*	
	Adults	Grilse	Males	Females	Adults	Grilse	Adults	Grilse
1962-63	+							
1963-64					1,723	448		
1964-65			837	1,651	2,488	110		
1965-66			141	224	365	313		
1966-67			1,129	1,610	2,739	325		
1967-68			850	1,275	2,125	562		
1968-69			946	1,690	2,636	72	50	6
1969-70	8	3	518	436	954	1,914	51	0
1970-71	2	0	2,889	7,395	10,284	219	10	0
1971-72	16	0	4,412	6,031	10,443	326	80	0
1972-73	97	4	1,126	1,897	3,023	476	49	0
1973-74	18	5	3,273	4,135	7,408	1,294	4	0
1974-75	19	8	4,024	5,371	9,395	410	0	0
1975-76	25	28	3,131	4,571	7,702	3,425	0	0
1976-77	13	0	4,604	7,991	12,595	1,130	0	0
1977-78	0	0	1,514	2,799	4,313	520	0	0
1978-79	17	0	3,027	3,918	6,945	925	0	0
1979-80	0	0	1,003	1,298	2,301	257	0	0
1980-81	0	0	948	1,464	2,412	451	0	0
1981-82	0	0	904	1,151	2,055	540	0	0
1982-83	0	0	3,805	4,548	8,353	1,833	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 to Iron Gate Salmon and Steelhead Hatchery.

Season	Coho salmon					Steelhead*		
	Males	Females	Adults	Grilse	Total	Fall-trapped early run	Spring-trapped late run	Total
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
1982-83	499	634	1,133	496	1,629	1,267	1,436	2,703

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

APPENDIX TABLE 3. Fork Length (to nearest cm) of Steelhead Measured at Iron Gate Salmon and Steelhead Hatchery. 1/

Length	Number trapped			
	Fall trapped		Spring trapped	
	Males	Females	Males	Females
40		1	1	1
41		1		6
42		3	1	11
43		1	6	11
44		5	6	26
45		4	8	39
46	2	7	13	43
47		8	14	46
48	2	7	18	35
49	2	16	17	42
50	6	20	30	45
51	2	24	28	32
52	5	12	16	50
53	3	11	20	38
54	4	9	24	24
55	1	12	16	23
56	4	7	14	16
57	1	4	11	22
58	2	5	5	18
59	4	1	3	9
60	1	2	13	3
61	1	1	4	
62	1		6	2
63			5	1
64	4		2	1
65			5	
66				
67			2	
68	1			
69				
70			1	
Average	54.7	50.9	52.4	50.0

1/ Information supplied by Ivan Paulsen, Fishery Biologist, Yreka.



APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

July	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	55	50	78	48	thunder clouds					
2	55	50	78	44	showers					
3	55	49	73	45	overcast					
4	55	49	73	44	pty cloudy					
5	55	49	82	46	high clouds					
6	54	49	70	48	showers					
7	55	49	84	42	high clouds					
8	54	48	84	48	high clouds					
9	54	49	88	48	clear					
10	54	49	88	54	clear					
11	54	49	88	50	high clouds					
12	54	49	78	52	windy, high clouds					
13	55	49	74	46	windy, clear					
14	55	50	72	40	windy, clear					
15	55	49	80	40	clear					
16	55	49	84	47	clear					
17	54	49	86	49	clear					
18	54	49	86	50	clear					
19	54	47	92	52	clear					
20	54	48	90	52	clear					
21	54	49	84	50	clear					
22	54	48	86	47	clear					
23	54	48	88	50	clear					
24	54	48	94	50	clear					
25	54	48	94	50	clear					
26	54	46	96	51	clear					
27	54	46	98	57	clear					
28	53	47	99	58	clear					
29	53	47	89	60	windy, clear					
30	54	47	82	54	windy, clear					
31	55	50	70	48	windy, clear					
TOTALS										

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APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

August	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	55	49	80	42	high clouds, windy					
2	55	49	84	40	high clouds					
3	55	49	80	46	clear					
4	55	49	82	44	clear					
5	55	49	88	46	clear					
6	55	49	94	48	clear					
7	53	48	86	58	overcast					
8	52	47	94	63	overcast					
9	52	48	86	52	high clouds, windy					
10	54	48	80	50	high clouds, windy					
11	53	49	80	50	clear, windy					
12	55	48	87	42	clear					
13	54	46	90	42	clear					
14	54	47	86	44	clear					
15	54	48	88	44	clear					
16	55	48	82	43	clear					
17	55	48	87	44	clear					
18	54	48	88	47	clear					
19	54	48	88	52	thunder clouds					
20	54	47	91	52	clear					
21	54	48	98	52	clear					
22	54	47	96	54	clear					
23	54	47	94	54	clear					
24	54	46	97	52	clear					
25	54	47	93	52	clear					
26	54	47	87	48	clear					
27	54	47	84	44	high clouds					
28	54	47	84	44	high clouds					
29	53	49	80	54	showers					
30	54	47	79	45	clear					
31	55	48	83	44	clear					

TOTALS

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APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

September	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	55	47	89	44	clear					
2	55	48	87	44	cloudy					
3	53	48	82	59	showers					
4	55	48	78	40	clear					
5	55	48	86	42	clear					
6	54	49	80	46	high clouds					
7	55	48	88	44	high clouds					
8	54	45	90	49	clear					
9	54	49	90	44	high clouds					
10	55	51	79	40	clear					
11	56	49	70	34	clear					
12	53	50	68	54	cloudy					
13	55	50	70	40	clear	3				
14	55	50	71	39	clear					
15	55	49	64	47	pty cloudy					
16	55	51	68	34	pty cloudy					
17	55	50	70	36	pty cloudy					
18	54	51	62	45	rain					
19	55	51	62	36	cloudy					
20	55	51	63	40	clear	34	1			3
21	56	50	68	35	clear					
22	56	48	79	42	clear	22	1			
23	56	48	81	42	clear					
24	54	49	78	46	pty cloudy	22				
25	55	50	78	32	clear					
26	55	50	76	34	clear	110	14			
27	53	52	59	43	cloudy	126	9			7
28	52	50	60	43	cloudy	171	19			24
29	52	51	59	31	cloudy	210	8			8
30	51	50	68	30	clear					
TOTALS						698	52			42

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APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

October	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	56	50	68	32	clear	105	4			4
2	54	51	71	30	overcast					
3	51	50	70	39	overcast	497	25			17
4	56	50	68	43	cloudy	511	39			16
5	54	51	69	29	clear	614	28			17
6	55	53	69	39	rain	561	51			16
7	56	51	58	37	rain	1080	154			27
8	55	49	66	34	clear	885	141			22
9	55	50	68	32	clear					
10	55	48	74	35	clear					
11	54	48	78	39	clear	808	132	3		23
12	51	50	79	32	clear	417	70	1		24
13	56	50	79	39	clear	560	136			25
14	56	51	70	36	cloudy	562	201	2	2	34
15	51	50	73	37	clear	171	75	2	3	21
16	56	51	70	38	clear					
17	56	52	71	35	pty cloudy					
18	54	51	70	34	rain	268	172	7	27	19
19	56	52	66	32	rain	163	124	3	15	40
20	54	51	66	48	rain	136	88	3	22	34
21	54	50	66	50	cloudy					
22	55	51	62	45	cloudy	85	107	17	29	52
23	55	51	67	38	clear					
24	55	50	64	36	cloudy	87	51	23	17	24
25	55	51	50	35	cloudy	63	90	21	34	94
26	55	50	47	23	overcast	40	45	39	38	69
27	55	50	46	22	overcast					
28	58	52	52	24	rain					
29	56	55	44	38	rain	19	17	63	53	50
30	56	52	54	40	pty cloudy	4	10	27	18	64
31	57	52	55	26	clear					
TOTALS						7,636	1,760	211	258	692
CUMULATIVE TOTALS						8,334	1,812	211	258	734

APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

November	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	trout
1	57	52	54	26	clear					
2	59	52	58	22	clear	12	18	139	83	219
3	58	51	62	24	clear					
4	56	52	62	36	cloudy					
5	55	54	44	27	cloudy	2	3	167	58	111
6	59	53	44	20	clear					
7	57	54	48	24	clear					
8	57	54	47	22	clear					
9	58	54	44	20	clear	2		170	32	72
10	58	53	52	26	clear					
11	58	53	50	17	clear					
12	58	54	46	24	clear	2		143	17	29
13	58	54	48	16	clear					
14	59	54	46	17	clear					
15	59	52	45	14	clear					
16	59	56	40	31	cloudy					
17	57	55	45	32	rain					
18	56	54	45	38	cloudy, rain					
19	57	54	45	30	cloudy	1		160	18	31
20	57	54	45	31	cloudy					
21	58	55	46	24	cloudy					
22	56	54	50	35	clear					
23	59	54	68	18	clear					
24	58	56	44	20	cloudy			87	22	14
25	57	54	51	31	cloudy					
26	48	34	50	30	cloudy					
27	47	33	52	32	clear					
28	46	32	50	34	cloudy					
29	57	54	46	34	cloudy					
30	57	56	48	35	cloudy					
TOTALS						19	21	866	230	476
CUMULATIVE TOTALS						8,353	1,833	1,077	488	1,210

APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

December	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	trout
1	57	55	48	36	cloudy			40	3	3
2	57	56	47	32	snow, cloudy					
3	56	55	50	40	cloudy					
4	56	54	50	42	cloudy					
5	56	54	50	35	cloudy, rain					
6	57	54	48	34	clear					
7	56	55	46	34	clear					
8	59	54	50	32	clear			8	4	5
9	59	54	51	32	clear					
10	59	54	52	33	clear					
11	58	54	51	32	clear					
12	58	56	50	32	rain					
13	58	55	50	38	clear, pty cloudy					
14	57	55	46	41	cloudy					
15	57	55	45	38	rain			4	1	2
16	57	56	48	36	rain					
17	57	56	44	36	rain					
18	58	55	48	35	cloudy					
19	57	55	49	38	cloudy					
20	57	56	42	24	rain					
21	57	56	42	40	rain					
22	57	55	40	38	snow, rain			4		47
23	57	55	42	32	snow					
24	57	55	38	20	clear					
25	57	55	40	31	cloudy					
26	57	55	44	out of	cloudy					
27	57	55	46	order	cloudy					
28	42	38	44	"	clear					
29	42	38	44	"	clear					
30	43	39	46	"	clear					
31	43	39	44	"	clear					
TOTALS								56	8	57
CUMULATIVE TOTALS						8,353	1,833	1,133	496	1,267

APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

January	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	43	39	44	out of	clear					
2	41	38	48	order	cloudy					
3	41	38	46	"	cloudy					
4	40	37	47	"	cloudy					
5	40	37	44	"	cloudy					3
6	40	34	47	"	cloudy					
7	38	35	54	"	clear					
8	38	36	52	"	clear					
9	40	36	53	18	clear					
10	42	35	52	15	clear					
11	42	36	45	15	clear					
12	41	36	42	12	clear					
13	41	35	46	12	clear					
14	40	35	45	11	clear					
15	40	38	46	20	rain					
16	40	38	40	32	rain					
17	39	36	43	33	cloudy					
18	40	36	48	36	rain					
19	40	36	49	28	rain					59
20	40	35	48	22	snow, pty cloudy					
21	40	35	48	30	rain					
22										
23										
24	38	35	50	26	clear					
25	39	37	46	28	windy, cloudy					
26	39	37	48	38	rain					22
27	39	35	48	32	pty cloudy					
28										
29	38	35	48	20	cloudy					
30	40	39	42	23	rain					
31	40	35	50	22	clear					
TOTALS										84
CUMULATIVE TOTALS						8,353	1,833	1,113	496	1,351

APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

February	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	40	35	50	19	high clouds					
2	40	35	48	20	high clouds					246
3	40	35	46	22	clear					
4	41	35	52	15	clear					
5	39	35	50	25	pty cloudy					
6	38	37	50	34	rain					
7	40	37	41	22	afternoon rain					
8	39	37	48	31	afternoon rain					
9	39	38	45	33	rain					284
10	39	37	44	30	rain					
11	38	36	53	34	cloudy					
12	38	36	50	38	rain					
13	38	35	54	37	pty cloudy					
14	38	36	50	29	rain					
15	38	36	49	34	rain					304
16	39	36	48	26	cloudy					
17	39	36	44	22	rain					
18	38	36	54	31	lt. rain					
19	38	36	46	27	overcast					
20	39	36	48	30	overcast					
21	39	35	54	32	rain					
22	39	35	56	32	overcast					
23	37	36	50	32	cloudy					203
24	39	34	54	38	pty cloudy					
25	38	36	42	33	rain					
26	39	35	49	28	pty cloudy					
27	39	37	48	30	rain					
28	39	37	50	25	cloudy					
TOTALS										1,037
CUMULATIVE TOTALS						8,353	1,833	1,133	496	2,388



APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

March	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	44	Thermograph broken	54	36	cloudy					
2			52	34	scattered showers					140
3			56	30	pty cloudy					
4			52	38	overcast					
5			50	34	cloudy					
6			53	34	cloudy					
7			57	34	cloudy					
8			59	39	overcast					
9			62	41	pty cloudy					43
10			60	38	pty cloudy					
11	46		56	34	overcast					
12			52	39	rain					
13			50	38	scattered showers					
14			48	33	cloudy					
15			55	25	clear					
16			54	29	cloudy, drizzle					72
17			58	33	pty cloudy					
18			56	28	pty cloudy					
19			58	26	clear					
20			50	34	cloudy, lt. rain					
21			54	37	cloudy					
22			46	34	rain					
23			47	33	rain					60
24			49	30	rain					
25			49	28	cloudy					
26			50	27	cloudy					
27			51	30	pty cloudy					
28			52	28	cloudy					
29			50	40	rain					
30			51	40	rain					
31			54	35	pty cloudy					
TOTALS										315
CUMULATIVE TOTALS						8,353	1,866	1,133	496	2,703

APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

April	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1	Thermograph		52	27	rain					
2	broken		48	34	rain, snow					
3			46	30	cloudy					
4					clear					
5					clear					
6			63	27	clear					
7			64	27	clear					
8			68	28	clear					
9			56	39	overcast					
10			51	21	pty cloudy					
11	45		50	27	cloudy					
12	45		49	22	pty cloudy					
13	45		56	19	pty cloudy					
14	45		60	22	pty cloudy					
15	45		65	25	pty cloudy					
16	45		72	24	pty cloudy					
17	45		74	34	overcast					
18	45		69	35	rain, pty cloudy					
19										
20	45		64	39	scattered showers					
21	45		70	41	pty cloudy					
22	45		54	41	cloudy, windy					
23			48	42	rain, windy					
24			48	44	rain, pty cloudy					
25	47		53	29	scattered showers					
26	47		60	30	cloudy					
27	47		58	32	scattered showers					
28	47		57	31	scattered showers					
29	47		64	39	pty cloudy					
30	47		46	38	rain					

TOTALS

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APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

May	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	trout
1	48		55	41	scattered clouds					
2	49		67	36	scattered clouds					
3	49		66	34	clear					
4	49		70	34	scattered clouds					
5	49		68	38	cloudy, rain					
6										
7	49		60	36	cloudy					
8	50		52	32	rain					
9	49		48	32	cloudy					
10	50		56	24	clear					
11	50		64	26	clear					
12	51		66	27	clear					
13	51		70	28	clear					
14	51		62	35	overcast, rain					
15										
16	51		64	30	clear					
17	51		72	33	clear					
18	51		71	46	clear					
19	51		77	40	clear, windy					
20	51		86	44	clear					
21	52		82	42	clear					
22										
23	51		90	40	clear					
24	50		92	48	clear					
25	52	49	94	50	clear					
26	52	49	94	44	clear					
27	52	49	96	48	clear					
28	52	48	98	46	clear					
29	52	50	100	56	clear					
30	52	50	90	42	clear					
31	52	50			cloudy					
TOTALS										

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APPENDIX TABLE 4  
Iron Gate Salmon and Steelhead Hatchery  
Weather, Water, and Fish Data  
July 1, 1982 through June 30, 1983

June	Temperature (°F)				Weather	Fish trapped				
	Water		Air			Chinook salmon		Coho salmon		Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adult	Grilse	
1					cloudy					
2	52	50	64	41	cloudy					
3	51	49	72	38	clear					
4	52	50	75	37	clear					
5	52	50	77	38	clear					
6			86	40	clear					
7	53	50	90	40	clear					
8	52	50	90	41	clear					
9	52	50	82	42	scattered clouds					
10	51	50	84	44	rain					
11	52	50	60	39	scattered clouds					
12	51	50	74	34	clear					
13	51	50	76	36	clear					
14	51	50	86	45	cloudy					
15	51	50	76	40	clear					
16	52	50	88	40	clear					
17	51	50	92	44	clear					
18	52	50	70	34	scattered clouds					
19	52	50	65	36	scattered clouds					
20	52	50	84	34	clear					
21	52	50	82	34	clear					
22	52	50	82	42	clear					
23	52	50	81	40	clear					
24	52	50	78	34	clear					
25	52	50	81	39	scattered clouds					
26										
27										
28	52	50	80	43	hazy					
29	52	50	75	41	scattered clouds					
30	52	50	72	40	overcast					
TOTALS										

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