

ANNUAL REPORT
TRINITY RIVER SALMON AND STEELHEAD HATCHERY
1978-79^{1/}

by

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ABSTRACT

This report describes the operation of Trinity River Salmon and Steelhead Hatchery from July 1, 1978 through June 30, 1979. Tables present daily records of water temperatures and weather conditions, daily numbers of salmon and steelhead entering the hatchery, total number of salmonids reared and released, and a summary of annual salmonid runs to Trinity Hatchery from its opening through the current year.

There were 11,192 chinook salmon, Oncorhynchus tshawytscha, trapped, which produced 10,132,000 eggs. The 3,655 coho salmon, O. kisutch, trapped produced 1,723,000 eggs. The 683 steelhead, Salmo gairdneri gairdneri, trapped produced 887,000 eggs.

We planted 4,413,883 fingerling and 592,137 yearling chinook salmon, 219,614 yearling coho salmon, and 228,030 fingerling and 460,150 yearling steelhead.

^{1/} Anadromous Fisheries Branch Administrative Report No. 80-14.
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INTRODUCTION

This is the 21st annual report covering operation of the Trinity River Salmon and Steelhead Hatchery, located near Lewiston, Trinity County. 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. Operation and maintenance costs are paid by the Bureau.

This report describes operation of the hatchery from July 1, 1978 through June 30, 1979. Copies of previous annual reports are available upon request from the Anadromous Fisheries Branch, Rancho Cordova, CA 95670.

PRODUCTION SUMMARY

The ladder was opened and chinook salmon entered the hatchery beginning September 1 (Appendix Table 2). Although the run continued through December 21, most of the fish had been trapped by the end of November. Coho salmon were trapped from September 28, 1978 through January 2, 1979. Steelhead entered the hatchery from November 2, 1978 through April 16, 1979. The relationship between these three runs over time are shown in Figure 1 (Appendix). Several small brown trout entered the hatchery trap from September through December but were not spawned because they did not appear to be anadromous.

The hatchery produced and planted 4,413,883 fingerling chinook salmon and 228,030 steelhead during 1978-79 (Table 1). During this same period 592,137 yearling chinook, 219,614 yearling coho and 460,150 yearling steelhead were planted. As of June 30, 1979 1,250,000 chinook salmon, 445,000 coho salmon and 927,000 steelhead fingerlings remained at the hatchery.

TABLE 1. Production Summary, Trinity River Hatchery, 1978-79

Species	Number trapped	Number females spawned	Eggs taken or received	Number			On hand June 30, 1979
				fingerlings planted	yearlings or brood stock planted	Total pounds planted	
Chinook salmon	11,192	4,196	10,132,000	4,413,883	592,137	123,391	1,250,000
Coho salmon	3,655	914	1,723,000	0	219,614	22,413	445,000
Steelhead	683	327	1,053,500*	228,030	460,150	77,019	927,000
TOTALS	15,530	5,437	12,908,500	4,641,913	1,271,901	222,823	2,622,000

* 635,000 Trinity; 252,000 Trinity River, Iron Gate strain; 166,500 received from Iron Gate Hatchery (Appendix Table 3).

HATCHERY OPERATION

All fish were reared on a diet of Oregon Moist Pellet (OMP). A total of 460,000 lb of feed produced 222,823 lb of fish during FY 1978-79 yielding a feed conversion rate (pounds of feed required to produce 1 lb of fish) of 2.06.

The hatchery had 13,047 visitors in 1978-79. Guided tours were provided for several of the larger groups, most of which were from local schools.

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1978 Run

Chinook salmon first appeared in the upper river on June 18 and small numbers continued arriving throughout the summer. The ladder was opened September 1 and spawning operations begun.

Spring Run

Between September 1 and October 5, 1978, 3,899 chinook salmon, thought to be mostly spring-run, were trapped. This number included 1,858 males, 1,898 females, and 143 grilse (males <22 in. FL). The 1,171 females which were spawned produced 3,175,000 eggs, an average of 2,711/female. Egg size averaged 83/oz.

Fall Run

There were 7,293 chinook salmon trapped from October 6 to December 21: 2,816 males, 3,233 females, and 1,244 grilse. All were assumed to be fall-run. The 3,025 females spawned produced 6,957,000 eggs, an average of 2,300/female. Egg size averaged 91/oz.

Marked Chinook Salmon Returns

A total of 917 chinook salmon marked Ad and tagged with coded wire tags was trapped at the hatchery during the 1978 season. From these, a total of 835 coded wire tags was recovered (Table 2).

TABLE 2. Marked Chinook Salmon Recoveries, Trinity River Hatchery, 1978-79

Mark and tag	Number recovered	Brood year	Strain	Date planted	Number /lb.	Location	Number planted
Ad-CWT(6-61-1)	816	1976	Klamath-fall run	11/23/77	8.4	TRH	175,330
Ad-CWT(6-61-6)	19	1976	Trinity-spring run	11/23/77	7.0	TRH	58,000

* Actual number marked 56,840.

Planting 1977 Broodyear Chinook Salmon

We planted 592,137 1977 BY chinook salmon yearlings at the hatchery in 1978-79 (Table 3).

TABLE 3. Yearling Trinity River Strain Chinook Salmon Planted, Trinity River Hatchery, 1978-79

Date	Race	Number/lb	Total released*	Number marked ⁺	Mark
9/29/78	spring	9.0	100,000	95,230	Ad-CWT(6-61-4)
10/17/78	fall	12.0	100,200	96,493	Ad-CWT(6-61-5)
10/31/78	fall	11.0	93,857	91,522	Ad-CWT(6-61-5)
11/ 1/78	fall	11.0	71,500		
3/ 1/79	fall	7.0	100,500		
3/ 1/79	fall	7.6	104,230		
3/ 1/79	fall	7.1	21,850	193,910	Ad-CWT(6-61-7)
TOTALS			592,137	477,155	

* Hatchery estimate based on weight counts.

+ Actual count corrected for poor fin clips and tag shedding.

A total of 390,400 1977 BY chinook salmon was planted last fiscal year as fingerlings. From the 2,450,000 fall- and spring-run eggs in 1977, 982,537 fish (40%) were eventually planted.

Planting 1978 Broodyear Chinook Salmon

We planted 4,413,883 1978 BY chinook salmon fingerlings in various locations (Table 4).

A total of 769,220 of the chinook salmon fingerlings was marked Ad and tagged with coded wire tags.

Approximately 800,000 fall-run and 400,000 spring-run fingerlings were held at the hatchery for later release as yearlings.

COHO SALMON MAINTENANCE PROGRAM

History of the 1978 Run

Coho salmon entered the hatchery from September 28, 1978 through January 2, 1979. The 3,655 fish trapped included 580 males, 995 females, and 2,080 grilse (males <22 in. FL). The 914 females spawned from October 31 through December 28 produced 1,723,000 eggs, an average of 1,885/female. Egg size averaged 93/oz.

Marked Coho Salmon Returns

A total of 1,458 marked coho salmon returned to the hatchery (Table 5).

TABLE 4. Fingerling Chinook Salmon Planted, Trinity River Hatchery, 1978-79

Date	Race	Number /lb.	Release site	Total released*	Number marked ⁺	Mark
5/18/79	Spring	63	Hatchery	148,050		
5/18/79	Spring	81	Hatchery	155,520		
5/23/79	Spring	81	Hatchery	249,075		
5/24/79	Spring	81	Hatchery	157,950		
5/25/79	Spring	53	Hatchery	84,800		
5/29/79	Fall	104	Hatchery	213,200		
5/29/79	Fall	70	Hatchery	160,000		
5/29/79	Spring	55	Hatchery	195,000	170,800	Ad-CWT (6-61-12)
6/ 1/79	Fall	98	Hatchery	542,000		
6/ 4/79	Fall	66	Hatchery	108,900		
6/ 5/79	Fall	100	Hatchery	540,000		
6/ 7/79	Fall	60	Hatchery	206,000	190,800	Ad-CWT (6-61-8)
6/ 8/79	Fall	126	Hatchery	497,700		
6/12/79	Fall	138	Hatchery	227,700		
6/13/79	Spring	43	Hoopa	60,200		
6/14/79	Spring	43	Hoopa	64,500	192,800	Ad-CWT (6-61-11)
6/15/79	Spring	43	Hoopa	59,125		
6/17/79	Fall	63	Hatchery	154,350		
6/18/79	Fall	57	Hoopa	184,395	187,800	Ad-CWT (6-61-10)
6/19/79	Spring	59	Ten Mile River	106,200		
6/21/79	Spring	65	Ten Mile River	130,000		
6/26/79	Spring	47	Ten Mile River	84,600		
6/28/79	Spring	47	Van Arsdale Station	5,000		
6/28/79	Spring	47	Ten Mile River	79,618		
TOTAL				4,413,883		

1/ Hatchery estimate based on weight counts.

2/ Actual count corrected for poor fin clips and tag shedding.

3/ Reared in pond facility by Salmon Restoration Assn. of Calif., Inc. until mid-October 1979 when 38,950 seined and planted back into the Trinity River. The fish remaining in the pond were released into the Ten Mile River when elevated river flows worked out the pond barriers releasing the fish downstream.

4/ Located on the Eel River 40 km northeast of Ukiah.

TABLE 5. Marked Coho Salmon Recoveries, Trinity River Hatchery, 1978-79

Mark and tag	Number recovered	Brood year	Strain	Date planted	Number /lb	Location	Number planted
Ad-CWT (6-61-50)	459	1976	Trinity	3/2/78	11.0	TRH	96,800
LV-RV	999	1976	Trinity	3/2/78	3.7	TRH	26,600

Planting 1977 Broodyear Coho Salmon

All 1977 BY coho salmon were planted at the hatchery (Table 6).

TABLE 6. Coho Salmon Yearlings Planted, Trinity River Hatchery, 1978-79

Date	Number /lb	Total released*	Number marked ⁺	Mark
3/2/79	5.6	55,614		Ad-CWT(6-61-52)
3/2/79	14.4	120,080	78,800	Ad-CWT(6-61-51)
3/2/79	10.6	43,920		None
TOTAL			219,614	

* Hatchery estimate based on weight counts.

+ Actual count corrected for tag shedding or poor fin clips.

STEELHEAD MAINTENANCE PROGRAM

History of the 1978-79 Steelhead Run

The adult steelhead run at Trinity River Hatchery consisted of 683 fish: 322 males and 361 females. From January 29 through April 9, 327 females were spawned, producing 887,000 eggs, an average of 2,713/female. Egg size averaged 206/oz. We also received 166,500 BY winter-run steelhead eggs from Iron Gate Hatchery.

Marked Steelhead Returns

Of the 683 steelhead trapped at Trinity River Hatchery during the 1978-79 season, 627 (92%) were marked (Table 7). All returning marked fish were originally reared at Trinity River Hatchery.

Steelhead Planted

We planted 688,180 steelhead in FY 1978-79 (Table 8).

BROWN TROUT MAINTENANCE PROGRAM

History of the 1978 Brown Trout Run

As was the case the previous year, a few small brown trout averaging 10 to 12 in. FL entered the trap from September through December. Since the fish did not appear to have been to the ocean, they were not spawned. All of the brown trout trapped at the hatchery were returned to the Trinity River.

Brown Trout Planting

No brown trout were planted during the 1978-79 season.

TABLE 7. Marked Steelhead Recoveries, Trinity River Hatchery, 1978-79

Mark	Number trapped	Mean fork length in inches (range)	Probable origin				Number
			Brood year	Strain	Date planted	Location	
Ad-LV	1	23.5	1975	Iron Gate	4/23/76	TR*	46,221
Ad-LV-RP	30	23.0 (14.5-27.0)	1975	Trinity River	3/21/77	TRH	21,000
Ad-RV	8	20.0 (15.0-24.0)	1975	Iron Gate	4-5/77	TR ⁺	118,966
Ad-RV-LP	92	20.5 (18.0-23.0)	1975	Iron Gate	3/21/77	TRH	43,658
Ad-LP	2	24.5 (20.5-28.5)	1975	Iron Gate	4/ 1/76	TR*	13,750
LV	7	24.5 (15.0-28.0)	1974	Trinity River	4/23/76	TR*	38,509
LV-RP	299	22.5 (13.0-27.5)	1976	Trinity River	4/77	TRH	175,230
RV	5	26.5 (23.5-31.0)	1975	Trinity River	4-5/77	TR ⁺	115,607
RV-LP	181	19.0 (15.5-25.0)	1976	Iron Gate	4/77	TRH	129,587
RP ^a /	1	24.5					
RM ^a /	1	26.5					

* Various locations (Bedell 1978a).

+ Various locations (Bedell 1978b).

^a/ Unknown origin.

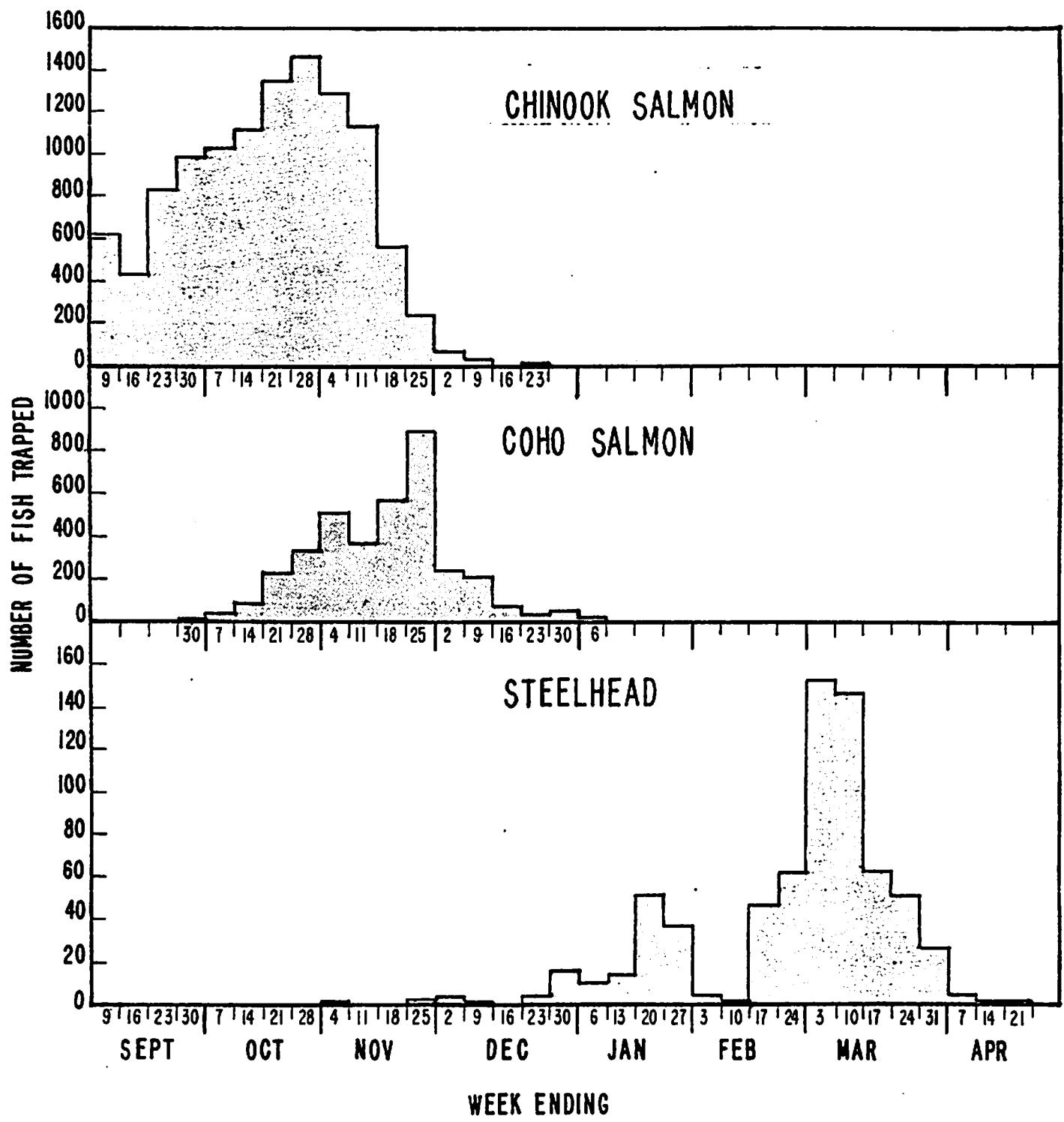
TABLE 8. Steelhead Planted, Trinity River Hatchery, 1978-79

Strain	Brood year	Date released	Number /lb	Mark	Release site	Number released
Iron Gate	1977	9/12/78	5.0	None	Lewiston Lake	2,700
Trinity	1977	9/12/78	1.5	None	Lewiston Lake	1,000
Iron Gate	1978	12/19/78	33.0	None	Lewiston Lake	82,500
Iron Gate	1978	12/20/78	27.0	None	Lewiston Lake	24,525
Iron Gate	1978	12/21/78	29.0	None	Lewiston Lake	83,230
Iron Gate	1978	1/ 3/79	32.0	None	Lewiston Lake	16,000
Trinity	1978	1/16/79	33.0	None	Lewiston Lake	13,200
Iron Gate	1978	1/18/79	49.0	None	Lewiston Lake	8,575
Trinity	1978	2/28/79	4.0	Ad-RV	Hatchery	5,912
Trinity	1978	2/28/79	7.0	Ad-RV	Hatchery	1,631
Trinity	1978	3/19/79	3.6	Ad-RV	Hatchery	1,906
Trinity	1978	3/19/79	6.7	Ad-RV	Hatchery	5,304
Iron Gate	1978	3/22/79	6.0	LP	Hatchery	112,608
Iron Gate	1978	3/22/79	7.0	LP	Hatchery	128,053
Iron Gate	1978	3/22/79	9.7	LP	Hatchery	102,000
Trinity	1978	4/ 4/79	2.9	Ad-LV	Hatchery	8,914
Trinity	1978	4/ 4/79	6.3	Ad-LV	Hatchery	21,989
Iron Gate	1978	4/ 4/79	7.0	RP	Hatchery	34,040
Iron Gate	1978	4/ 4/79	5.3	RP	Hatchery	34,093
TOTAL						688,180

REFERENCES

Bedell, G. W. 1978a. Annual report Trinity River Salmon and Steelhead Hatchery 1975-76. Calif. Dep. Fish and Game, Anad. Fish. Br. Admin. Rep. 78-1. 22 p.

Bedell, G. W. 1978b. Annual report Trinity River Salmon and Steelhead Hatchery 1976-77. Calif. Dep. Fish and Game, Anad. Fish. Br. Admin. Rep. 78-2. 22 p.



APPENDIX FIGURE 1. Salmon and steelhead trapped at Trinity River Hatchery.
Weekly counts during 1978-79 season.

APPENDIX TABLE 1. Summary of Fish Runs to Trinity River
Salmon and Steelhead Hatchery

	Chinook salmon			Coho salmon			Steelhead	Brown trout
	Males	Females	Grilse	Males	Females	Grilse		
1958-59	1,269	1,744	878	240	343	33	2,880	80
1959-60	1,716	2,833	2,701	49	44	26	2,071	52
1960-61	1,493	1,287	4,130	84	54	70	3,526	82
1961-62	885	1,613	2,899	158	160	37	3,243	35
1962-63	1,308	1,608	6,535	7	0	9	1,687	49
1963-64	1,569	2,627	2,539	32	40	11	894	34
1964-65	1,974	3,042	1,287	23	25	2	6,941	145
1965-66	477	1,077	1,521	2	1	9	992	100
1966-67	1,052	1,002	2,786	45	173	807	135	152
1967-68	1,620	1,250	1,746	287	519	59	232	231
1968-69	1,797	2,102	873	3	1	34	554	170
1969-70	624	832	1,130	153	132	1,711	241	70
1970-71	773	725	2,946	1,410	1,396	341	67	23
1971-72	3,648	4,645	928	28	11	8	242	7
1972-73	5,217	5,825	339	28	30	2,612	271	111
1973-74	2,483	1,152	1,577	3,808	3,787	486	162	39
1974-75	4,547	2,840	677	33	22	40	372	32
1975-76	2,958	3,405	860	68	109	2,060	175	24
1976-77	2,845	1,901	2,878	1,171	1,414	223	13	49
1977-78	1,841	1,318	2,562	381	317	1,230	285	0 ^{a/}
1978-79	4,674	5,131	1,387	580	995	2,080	683	0

^{a/} Began selecting for anadromous brown trout in 1977-78.

APPENDIX TABLE 2. Trinity River Salmon and Steelhead Hatchery Weather, Water Flow, and Counts of Fish Trapped during Spawning Operations, July 1, 1978 through June 30, 1979

July	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Water				Chinook salmon	Coho salmon	Adults	Grilse		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse				
1	80	50	57	56	clear-cloudy	289						
2	78	50	56	55	partly cloudy	288						
3	82	45	55	55	clear	293						
4	84	56	56	55	partly cloudy	290						
5	90	48	58	57	clear	288						
6	97	50	56	55	clear	292						
7	90	60	55	55	partly cloudy	294						
8	99	58	57	56	fog-clear	288						
9	100	56	55	55	clear	329						
10	89	49	57	56	clear	564						
11	84	52	57	56	clear	616						
12	87	49	57	57	clear	635						
13	94	50	58	56	clear	633						
14	97	53	57	56	clear	554						
15	90	54	57	56	clear	423						
16	100	49	57	56	clear	324						
17	98	50	57	54	clear	294						
18	102	52	58	56	clear	294						
19	101	57	58	57	clear	293						
20	100	51	58	57	clear	293						
21	103	58	58	58	clear	294						
22	106	55	60	58	clear	292						
23	100	59	59	58	clear	487						
24	102	57	60	58	clear	709						
25	102	60	60	59	partly cloudy	746						
26	97	58	60	56	partly cloudy	742						
27	97	57	58	57	clear	746						
28	94	53	56	55	clear	636						
29	100	50	56	56	clear	482						
30	102	52	56	55	clear	407						
31	103	56	58	57	clear	308						

*From USGS records.

Appendix Table 2 (Continued)

August	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Water				Chinook salmon	Coho salmon				
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	Steelhead	
1	105	56	56	56	clear	287						
2	106	53	57	57	clear	287						
3	106	58	57	55	clear	286						
4	107	64	57	57	cloudy	287						
5	108	60	57	56	clear	289						
6	111	60	56	56	clear	288						
7	110	60	57	56	clear	287						
8	113	62	57	57	clear	287						
9	109	61	57	56	clear	287						
10	102	56	57	56	clear	288						
11	98	53	57	56	clear	289						
12	85	52	56	56	clear	289						
13	85	45	55	54	clear	290						
14	93	45	55	52	clear	291						
15	90	52	55	52	clear	290						
16	83	49	51	51	clear	290						
17	85	42	52	52	clear	290						
18	92	42	51	51	clear	291						
19	90	42	51	51	clear	291						
20	90	42	52	50	clear	292						
21	62	51	54	54	rain	292						
22	76	48	52	52	fog-clear	293						
23	78	44	53	52	partly cloudy	294						
24	76	45	53	52	cloudy	293						
25	69	54	53	52	rain	294						
26	85	41	54	53	partly cloudy	295						
27	91	47	54	53	clear	295						
28	98	54	54	52	clear	296						
29	98	52	54	54	clear	296						
30	91	61	54	53	cloudy	297						
31	92	49	54	54	clear	297						

*From USGS records.

Appendix Table 2 (Continued)

September	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped		
	Air		Water				Chinook salmon Adults	Chinook salmon Grilse	Coho salmon Adults
	Maximum	Minimum	Maximum	Minimum			Grilse		Grilse
1	94	48	54	54	clear	297			
2	90	52	54	54	clear	296			
3	84	48	52	52	partly cloudy	296			
4	75	58	52	52	partly cloudy	295			
5	60	52	51	50	rain	295	534	13	
6	70	49	51	50	partly cloudy	295			
7	72	46	50	50	partly cloudy	296	90	1	
8	72	48	50	50	cloudy	295			
9	62	43	51	50	rain	297			
10	68	51	50	49	cloudy	295			
11	75	43	50	49	clear	302	163	12	
12	80	44	50	49	fog-clear	297			
13	79	44	51	50	cloudy-rain	287			
14	82	46	51	50	fog-clear	282	223	19	
15	86	44	53	50	fog-clear	288			
16	86	46	52	50	fog-clear	292			
17	67	40	51	50	clear	303			
18	70	36	51	50	clear	314	451	11	
19	74	32	51	50	clear	315			
20	82	34	51	49	clear	311			
21	81	40	50	48	partly cloudy	311	355	11	
22	84	38	51	48	clear	310			
23	94	42	52	49	clear	311			
24	94	45	54	51	clear	311			
25	90	45	52	50	fog-haze	313	528	17	
26	87	47	54	51	clear	309			
27	88	45	52	50	clear	308			
28	89	42	53	50	clear	309	429	20	2
29	94	44	53	50	fog-clear	369			
30	94	44	52	50	clear	368			
TOTALS						2,773	104		2

*From USGS records.

Appendix Table 2 (Continued)

-14-

October	Temperature (°F)			Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped			
	Air		Water			Chinook salmon Adults Grilse	Coho salmon Adults Grilse	Steelhead	
	Maximum	Minimum	Maximum Minimum						
1	90	43	52	clear	305	540	15	12	
2	94	38	52	clear	304	443	24	1	
3	94	38	53	clear	304	306	1	3	
4	94	40	53	clear	304	306	44		
5	89	41	53	clear	308	306			
6	84	42	52	clear	306	306			
7	88	39	51	clear	306	304			
8	80	38	52	clear	304	306			
9	88	37	52	clear	306	307			
10	86	38	52	clear	307	305			
11	91	38	53	clear	305	416	84	3	
12	92	40	53	clear	305	307		46	
13	95	39	53	clear	306	305			
14	90	40	53	clear	305	547	129	8	
15	84	42	52	partly cloudy	305	303		66	
16	80	41	52	fog-clear	303	303			
17	87	39	52	fog-clear	303	303			
18	90	38	52	clear	303	536	135	10	
19	76	37	52	clear	303	303		167	
20	80	38	52	fog-clear	290	345			
21	78	40	50	clear	345	326			
22	84	40	51	fog-clear	326	299			
23	89	32	51	clear	299	634	160	20	
24	84	36	51	clear	300	301		98	
25	83	34	51	clear	301	301			
26	81	33	51	clear	301	543	152	39	
27	81	33	50	clear	301	302		186	
28	78	31	50	fog-clear	302	299			
29	78	31	48	fog-clear	299	300			
30	66	24	49	clear	300	566	130	74	
31	77	26	48	clear	301	301		167	
TOTALS					4,764	903	160	789	

*From USGS records.

Appendix Table 2 (Continued)

November	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air Maximum	Air Minimum	Water Maximum	Water Minimum			Chinook salmon Adults	Chinook salmon Grilse	Coho salmon Adults	Coho salmon Grilse	Steelhead
1	72	28	48	46	clear	299					
2	73	27	48	46	clear	301	497	118	87	179	1
3	76	28	47	46	clear	300					
4	40	32	47	45	cloudy	303					
5	72	37	47	46	fog-clear	303					
6	76	30	47	46	fog-clear	303	486	114	82	152	
7	77	30	47	45	fog-clear	302					
8	77	29	47	45	fog-clear	303	488	41	54	87	
9	61	33	46	45	fog-clear	303					
10	50	32	45	45	clear	303					
11	50	30	44	43	partly cloudy	303					
12	34	20	43	43	cloudy-snow	303					
13	48	28	43	42	cloudy	301	323	42	195	212	1
14	55	28	44	42	fog-clear	301					
15	52	22	44	42	fog-cloudy	302					
16	50	35	44	43	fog-cloudy	303	153	30	81	106	
17	47	35	44	44	fog-cloudy	303					
18	58	37	45	44	fog-clear	309					
19	42	35	45	44	rain	310					
20	53	36	45	44	fog-rain	311	129	16	206	273	2
21	46	36	45	44	rainy	310					
22	56	36	45	44	cloudy	305					
23	43	34	45	45	fog	303					
24	53	35	44	44	fog	302	99	8	219	168	
25	48	33	45	44	fog-clear	301					
26	43	31	45	44	fog-clear	300					
27	48	30	45	44	fog-cloudy	302	42	6	98	50	1
28	52	32	45	44	fog-cloudy	303					
29	65	40	46	45	fog-cloudy	305	29	3	65	16	
30	58	38	46	45	fog-cloudy	304					
TOTALS							2,246	378	1,087	1,243	6

*From USGS records.

Appendix Table 2 (Continued)

December	Temperature (°F)			Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped		
	Air		Water			Chinook salmon	Coho salmon	Adults Grilse
	Maximum	Minimum	Maximum			Adults Grilse	Adults Grilse	Steelhead
1	58	31	46	45	fog-clear	303		
2	58	28	45	45	fog-clear	303		
3	53	29	45	44	fog-clear	303		
4	58	30	45	44	partly cloudy	303		
5	50	25	45	44	fog-cloudy	303		
6	46	18	44	44	fog-clear	303		
7	44	15	44	43	clear	306		
8	43	19	44	43	partly cloudy	306		
9	41	20	44	44	cloudy-clear	306		
10	48	27	45	44	partly cloudy	303		
11	48	38	45	44	cloudy-rain	304		
12	54	30	45	45	fog	303		
13	54	26	45	44	cloudy	303		
14	46	29	45	44	cloudy	304		
15	40	27	45	44	fog-cloudy	306		
16	44	25	45	44	fog-clear	304		
17	43	29	45	44	rain-snow	303		
18	47	30	45	44	cloudy	299		
19	44	25	45	44	cloudy-clear	300		
20	46	20	45	44	partly cloudy	299		
21	50	23	45	44	cloudy	299		
22	44	26	45	45	fog-clear	299		
23	45	28	45	45	fog-clear	299		
24	40	31	45	45	fog	300		
25	45	28	45	45	fog-clear	300		
26	50	28	45	45	fog-clear	303		
27	44	28	46	45	rain-cloudy	303		
28	49	30	45	45	fog-clear	306		
29	45	22	45	44	clear	306		
30	46	16	45	44	fog-clear	303		
31	47	14	44	44	fog-clear	303		
TOTALS						22	2	18
						324	46	
								9
							6	4

*From USGS records.

Appendix Table 2 (Continued)

January	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air Maximum	Air Minimum	Water Maximum	Water Minimum			Chinook salmon Adults	Chinook salmon Grilse	Coho salmon Adults	Coho salmon Grilse	Steelhead
1	48	16	44	43	clear	300					
2	45	24	44	43	cloudy	299			4		9
3	45	24	44	43	cloudy	299					
4	48	33	44	43	cloudy	297					
5	57	30	44	43	cloudy	297					
6	51	26	44	43	fog-cloudy	296					
7	44	32	43	43	cloudy-rain	297					
8	45	35	44	43	rainy	297					1
9	50	38	44	44	fog-cloudy	299					
10	47	40	44	44	rain	306					
11	65	41	45	44	rain-cloudy	309					11
12	57	35	45	44	cloudy	299					
13	48	34	45	44	cloudy-rain	296					
14	46	36	44	44	cloudy-rain	296					
15	48	33	45	44	rain-cloudy	294					26
16	54	34	45	44	cloudy	297					
17	45	32	45	44	cloudy	295					
18	40	31	44	44	cloudy	296					25
19	51	34	45	44	fog-clear	300					
20	50	30	44	44	fog-clear	298					
21	56	32	45	44	fog-clear	299					
22	56	30	45	44	fog-clear	298					26
23	57	23	45	43	fog-clear	299					
24	53	26	44	43	clear-cloudy	300					
25	48	21	44	43	fog-clear	299					8
26	53	26	44	43	partly cloudy	298					
27	50	23	43	42	fog-cloudy	299					
28	46	19	43	42	clear	305					
29	46	13	43	42	clear	305					
30	40	29	42	42	cloudy-snow	306					
31	44	27	42	42	cloudy	307					
TOTALS							4				109

*From USGS records.

Appendix Table 2 (Continued)

February	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Water				Chinook salmon	Coho salmon	Adults	Grilse		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse				
1	45	23	42	42	cloudy	307						
2	54	21	42	41	fog-clear	306						
3	57	19	42	41	partly cloudy	306						
4	62	24	43	41	fog-clear	307						
5	63	27	43	41	clear	308						
6	63	30	43	42	fog-clear	309						
7	63	27	44	42	partly cloudy	308						
8	60	30	44	42	fog-clear	308				1		
9	58	40	44	43	fog-cloudy	310						
10	50	36	44	44	rain-cloudy	314						
11	54	43	45	44	rain-cloudy	315						
12	49	40	46	45	rain	316						
13	45	39	46	45	rain	318						
14	50	36	45	45	cloudy	319						
15	39	27	45	44	snow-rain	455				15		
16	52	30	44	44	cloudy-rain	334				19		
17	48	32	45	44	fog-cloudy	298				12		
18	49	31	44	43	snow-rain	302						
19	54	34	45	44	partly cloudy	299						
20	54	35	45	44	rain	302				38		
21	54	32	44	44	rain-cloudy	301				15		
22	51	31	44	43	snow-cloudy	297				7		
23	50	30	44	43	snow-cloudy	298				2		
24	51	38	44	44	partly cloudy	298						
25	54	37	45	44	cloudy	296						
26	58	35	45	44	cloudy	298				18		
27	57	30	45	45	fog-cloudy	298				8		
28	46	38	45	45	rain-cloudy	334				24		
TOTALS										159		

*From USGS records.

Appendix Table 2 (Continued)

March	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air		Water				Chinook salmon	Coho salmon	Steelhead		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults		
1	54	27	45	44	clear	598			2		
2	48	29	45	44	cloudy-rain	348			37		
3	45	32	45	44	snow-rain	301			63		
4	59	40	46	45	fog-cloudy	299.			37		
5	70	43	48	46	cloudy	299			16		
6	77	41	50	48	fog-clear	298			22		
7	73	42	51	49	fog-clear	329			13		
8	80	38	53	42	fog-clear	502			18		
9	79	32	50	48	fog-clear	342			28		
10	78	32	50	49	clear	297			12		
11	74	40	51	50	cloudy	298			7		
12	78	40	51	50	fog-clear	298			6		
13	79	36	52	50	partly cloudy	298			13		
14	57	48	51	50	fog-cloudy	298			6		
15	51	44	51	51	rain	300			3		
16	49	33	50	50	cloudy-rain	299			17		
17	60	36	50	50	partly cloudy	443			11		
18	52	40	51	50	cloudy	296			10		
19	67	37	52	50	partly cloudy	296			11		
20	69	30	52	51	partly cloudy	296			4		
21	65	33	51	51	cloudy-rain	298			3		
22	54	41	51	51	fog-cloudy	303			7		
23	70	36	52	51	fog-clear	301			9		
24	71	47	53	50	fog-cloudy	301			5		
25	70	40	52	50	fog-cloudy	300			6		
26	54	37	51	51	drizzles	510			5		
27	52	42	51	50	rain	314			5		
28	58	39	51	50	cloudy	310			7		
29	63	35	51	49	cloudy-clear	306			2		
30	62	29	51	50	clear	305					
31	66	32	52	51	partly cloudy	302					
TOTALS									385		

*From USGS records.

Appendix Table 2 (Continued)

-20-

April	Temperature (°F)			Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped			
	Air		Water			Chinook salmon	Coho salmon	Adults Grilse	Steelhead
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Steelhead	
1	66	28	53	51	partly cloudy	300			
2	67	32	53	52	partly cloudy	301			
3	74	32	55	52	fog-clear	302			
4	79	36	56	52	fog-clear	302			
5	73	39	55	53	fog-clear	302			
6	63	40	55	54	cloudy-rain	306			
7	73	35	55	54	fog-clear	306			
8	74	37	55	54	fog-cloudy	305			
9	57	35	55	55	partly cloudy	305			
10	57	29	54	53	cloudy-rain	306			
11	65	45	53	53	cloudy	305			
12	72	35	55	53	clear-cloudy	306			
13	73	43	56	54	clear	307			
14	74	33	57	54	clear-cloudy	308			
15	74	33	57	54	clear-cloudy	308			
16	62	43	55	54	rain-cloudy	309			
17	59	35	55	54	cloudy	307			
18	61	27	54	54	clear	307			
19	68	28	56	54	fog-clear	307			
20	73	33	55	54	haze-clear	306			
21	70	37	56	54	clear-cloudy	306			
22	56	52	55	54	rain-showers	307			
23	55	41	55	54	rain-cloudy	308			
24	63	38	56	54	cloudy	300			
25	73	36	58	55	cloudy-clear	300			
26	60	47	56	56	rain	300			
27	62	44	56	56	cloudy	299			
28	77	44	57	55	partly cloudy	303			
29	75	42	57	56	cloudy-hazy	308			
30	71	43	57	56	clear-rain	302			
TOTALS									6

*From USGS records.

Appendix Table 2 (Continued)

May	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped		
	Air		Water				Chinook salmon Adults Grilse	Coho salmon Adults Grilse	Steelhead
	Maximum	Minimum	Maximum	Minimum					
1	71	44	56	56	drizzles	304			
2	82	40	56	56	fog-clear	306			
3	76	41	61	57	clear	303			
4	68	47	57	56	haze-clear	305			
5	58	46	56	55	rain	309			
6	53	37	55	54	rain	307			
7	56	37	54	54	cloudy-windy	312			
8	63	32	54	54	partly cloudy	309			
9	69	34	56	54	partly cloudy	308			
10	79	34	58	55	fog-clear	308			
11	79	34	58	55	fog-clear	307			
12	92	41	58	55	clear	306			
13	92	44	58	56	clear	305			
14	88	45	59	58	clear	306			
15	85	45	59	58	clear	307			
16	89	45	59	58	clear	308			
17	89	45	59	57	clear	309			
18	95	45	61	57	clear	307			
19	99	47	60	57	clear	308			
20	94	48	59	57	clear	311			
21	82	57	59	57	cloudy-clear	311			
22	79	44	59	58	cloudy	310			
23	83	51	58	56	cloudy	309			
24	88	43	60	57	clear	308			
25	97	45	58	55	clear	312			
26	90	48	58	57	clear	313			
27	80	48	56	55	clear	313			
28	71	39	57	56	clear	313			
29	78	37	60	57	clear	309			
30	84	36	55	54	clear	314			
31	88	39	55	54	clear	314			

TOTALS

*From USGS records.

Appendix Table 2 (Continued)

June	Temperature (°F)				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air Maximum	Air Minimum	Water Maximum	Water Minimum			Chinook salmon Adults	Chinook salmon Grilse	Coho salmon Adults	Coho salmon Grilse	Steelhead
1	94	42	56	53	clear	312					
2	98	44	56	54	clear	314					
3	100	51	57	54	clear	315					
4	95	50	56	55	clear	315					
5	95	49	56	55	clear	315					
6	86	45	57	56	clear	313					
7	81	41	59	56	clear	312					
8	88	40	57	54	clear	313					
9	90	44	56	55	partly cloudy	312					
10	92	47	57	55	clear	308					
11	92	47	57	55	clear	308					
12	93	45	57	55	clear	312					
13	83	42	56	54	clear	312					
14	80	37	56	53	clear	312					
15	73	42	56	54	clear	309					
16	71	38	57	53	clear-rain	311					
17	70	42	58	53	partly cloudy	308					
18	82	37	56	53	clear	307					
19	86	44	56	54	clear	310					
20	85	45	56	54	clear	305					
21	86	46	56	54	cloudy-clear	305					
22	89	43	57	54	clear	306					
23	96	50	57	55	clear	307					
24	98	49	55	54	clear	307					
25	93	51	57	54	clear	307					
26	91	49	56	55	clear	310					
27	99	49	57	55	clear	311					
28	92	47	57	55	clear	311					
29	83	45	56	54	clear	311					
30	80	45	57	54	clear	310					

TOTALS

*From USGS records.

APPENDIX TABLE 3. Eggs Shipped and Received at Trinity River Hatchery

Shipped	Number	Date	Destination
Chinook salmon eggs Fall run, 1978 broodyear Trinity River strain	1,305,000	12/14/78	Mad River Hatchery
"	200,000	1/ 5/79	Fish and Wildlife Service Hoopa, California
Coho salmon eggs 1978 broodyear Trinity River strain	100,000	1/ 5/79	Mad River Hatchery
"	606,639	1/18/79	Crystal Lake Hatchery
"	198,925	2/ 6/79	Mad River Hatchery
Total shipped	2,410,564		
Received	Number	Date	Origin
Steelhead eggs (1979 Broodyear) Winter-run Klamath River strain	166,500	4/16/79	Iron Gate Hatchery
Total received	166,500		