

ANNUAL REPORT
TRINITY RIVER SALMON AND STEELHEAD HATCHERY
1979-80^{1/}

by

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ABSTRACT

This report describes the operation of Trinity River Salmon and Steelhead Hatchery from July 1, 1979 through June 30, 1980. Tables present daily records of water temperatures and weather conditions, daily numbers of salmon and steelhead entering the hatchery, total numbers of fish spawned, numbers of salmonid eggs produced, received, reared, and planted.

There were 4,070 chinook salmon, Oncorhynchus tshawytscha, trapped. These fish produced 3,217,000 eggs. The 4,041 coho salmon, O. kisutch, trapped produced 2,183,000 eggs. The 382 steelhead, Salmo gairdneri, gairdneri, trapped produced 417,000 eggs.

We planted 826,532 fingerling and 1,187,744 yearling chinook salmon, 342,000 fingerling and 267,396 yearling coho salmon, and 65,750 fingerling and 319,461 yearling steelhead.

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INTRODUCTION

This is the 22nd 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 (USBR) to compensate for spawning areas blocked by the Trinity River project. The California Department of Fish and Game (CF&G) began operation of the permanent installation on May 15, 1963. Operation and maintenance costs are paid by USBR.

This report describes operation of the hatchery from July 1, 1979 through June 30, 1980. Copies of previous annual reports are available upon request from the Anadromous Fisheries Branch, Rancho Cordova.

PRODUCTION SUMMARY

The ladder was opened and chinook salmon began entering the hatchery August 31 and continued through November 23 (Appendix Table 1). The total number of each species returning during 1979-80 is compared to returns in previous years (Appendix Table 2). Coho salmon were trapped from October 1 through December 31. Steelhead entered the hatchery from November 5, 1979 through April 14, 1980. Several small brown trout entered the hatchery from September through December but were not spawned because they did not exhibit anadromous characteristics.

The hatchery produced and planted 826,532 fingerling chinook salmon, 342,000 fingerling coho salmon, and 65,750 steelhead during 1979-80 (Table 1). During this same period 1,187,744 yearling chinook, 267,396 yearling coho and 319,461 yearling steelhead were planted.

As of June 30, 1980 1,084,672 chinook salmon, 800,000 coho salmon and 969,600 steelhead fingerlings remained at the hatchery.

TABLE 1. Production Summary, Trinity River Hatchery, 1979-80

Species	Number trapped	Number females spawned	Eggs taken or received	Number fingerlings planted	Number yearlings or brood stock planted	Total pounds planted	On hand June 30 1980
Chinook salmon	4,070	1,123	3,217,000	826,532	1,187,744	188,781	1,084,672
Coho salmon	4,041	924	2,183,000	342,000	267,396	27,695	800,000
Steelhead	382	167	892,767 ^{a/}	65,750	319,461	40,403	969,600
TOTALS	8,493	2,214	6,292,767	1,234,282	1,774,601	256,879	2,854,272

^{a/} 167,000 Trinity; 250,000 Trinity River Iron Gate strain; 475,767 transferred from Iron Gate Hatchery.

HATCHERY OPERATION

All fish were reared on a diet of Oregon Moist Pellet (OMP). A total of 409,000 lb of feed produced 186,879 lb of fish during fiscal year 1979-80, yielding a conversion rate (pounds of feed required to produce 1 lb of fish) of 2.19.

The presence of IHN or cold water virus was confirmed by the Department's virologist. This is the first occurrence of this disease since the Trinity River Hatchery went into production. Losses from the disease affected less than 10% of the chinook salmon on hand.

The hatchery had 12,521 visitors in 1979-80. Guided tours were provided for several of the larger groups, most of which were from local schools.

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1979 Run

Chinook salmon first appeared in the upper river on May 28 and small numbers continued arriving throughout the summer. The ladder was opened August 31 and spawning operations begun.

Spring Run

Between September 4 and October 4, 1979, 1,544 chinook salmon, thought to be mostly spring-run, were trapped. This number included 597 males, 801 females, and 146 grilse (males ≤ 22 in. FL). The 484 females spawned during this period produced 1,344,000 eggs, an average of 2,777/female. Egg size averaged 83/oz.

Fall Run

There were 2,526 chinook salmon trapped from October 9 to November 23: 541 males, 679 females, and 1,306 grilse. All were assumed to be fall-run. The 639 fall-run females which were spawned produced 1,873,000 eggs, an average of 2,931/female. Egg size averaged 76/oz.

Marked Chinook Salmon Returns

A total of 1,431 chinook salmon marked Ad and tagged with coded wire tags was trapped at the hatchery during the 1979 season. These tags were collected by Anadromous Fisheries Branch personnel and are currently being analyzed. Results of these analyses will be published in a separate report.

Planting 1978 Broodyear Chinook Salmon

A total of 1,187,744 1978 BY chinook salmon yearlings was planted at the hatchery this fiscal year (Table 2).

TABLE 2. Yearling Trinity River-strain Chinook Salmon Planted at the Trinity River Hatchery, 1979-80

Date	Race	Number/lb	Total released ^{1/}	Number marked ^{2/}	Mark
10/16/79	Fall	16	150,400	None	None
10/17/79	Fall	13.5	121,500	None	None
10/18/79	Fall	15	83,250	None	None
11/1-5/79	Spring	9	213,074	191,916	Ad+CWT(6-61-30)
11/ 7/79	Spring	14	28,000	None	None
11/ 8/79	Fall	14	210,000	207,279	Ad+CWT(6-61-14)
11/13/79	Fall	14	54,600	None	None
3/5-6/80	Spring	7.5	159,812	134,948	Ad+CWT(6-61-31)
3/11-12/80	Fall	9.1	167,107	156,020	Ad+CWT(6-61-15)
TOTALS			1,187,743	690,163	

^{1/} Hatchery estimate.

^{2/} Corrected for tag shedding and/or poor fin clips.

A total of 4,413,883 1978 BY chinook fingerlings was planted last fiscal year. From the 10,132,000 fall- and spring-run chinook eggs taken in 1978 (Bedell 1980), 5,601,627 (55%) were eventually reared and planted.

Planting 1979 Broodyear Chinook Salmon

We planted 826,532 1979 BY chinook salmon fingerlings in various locations (Table 3).

TABLE 3. Fingerling Chinook Salmon Planted, Trinity River Hatchery 1979-80

Date	Race	Number /lb	Release site	Total released ^{1/}	Number marked ^{2/}	Mark
6/ 2/80	Spring	69	Hatchery	200,100	187,494	Ad+CWT(6-61-32)
6/ 2/80	Fall	105	Hatchery	199,500	188,727	Ad+CWT(6-61-16)
6/24-25/80	Spring	67.7	Willow Creek	216,800	181,134	Ad+CWT(6-61-33)
6/25/80	Fall	87	Willow Creek	200,100	193,897	Ad+CWT(6-61-17)
6/26/80	Fall	88	Hoopa	10,032	None	None
TOTALS				826,532	751,252	

^{1/} Hatchery estimate.

^{2/} Corrected for tag shedding and/or poor fin clips.

Approximately 840,000 fall-run and 190,000 spring-run fingerlings are being held at the hatchery for later release as yearlings.

COHO SALMON MAINTENANCE PROGRAM

History of the 1979 Run

Coho salmon entered the hatchery from October 1 through December 31, 1979. The total number of cohos trapped was 4,041; consisting of 1,241 males, 1,547 females, and 1,253 grilse. However, a large gap in the fish sweep may have permitted some of the smaller coho males to be counted twice. This would account for the discrepancy in the number of marked fish recovered. Because of this the number of smaller coho males reported was probably 506 fish too high.

There were 924 females spawned from October 29 through December 13 which produced 2,183,000 eggs, an average of 2,363/female. Egg size averaged 116/oz.

Marked Coho Salmon Returns

A total of 2,242 of the coho salmon returning to the hatchery was marked with an adipose clip. Another 26 were marked RV-LV.

Planting 1978 Broodyear Coho Salmon

All 1978 BY coho salmon were planted at the hatchery (Table 4).

TABLE 4. Yearling Coho Salmon Planted, Trinity River Hatchery, 1979-80

Date	Number/lb	Total released ^{1/}	Number marked ^{3/}	Mark
3/12/80	13.9	102,721	100,705	Ad+CWT(6-61-53)
3/13/80	8.1	32,279	27,290	Ad+CWT(6-61-54)
4/ 2/80	11.8	132,396	None	None
TOTALS		267,396	127,995	

^{1/} Hatchery estimate.

^{2/} Corrected for tag shedding and/or poor fin clips.

Planting 1979 Broodyear Coho Salmon

Three hundred forty-two thousand 1979 BY coho salmon were planted at various locations (Table 5). These fingerlings were not tagged or marked.

TABLE 5. Fingerling Trinity River-strain Coho Salmon Planted, Trinity River Hatchery, 1979-80

Date	Number/lb	Release site	Total released*
6/26/80	66	Big Lagoon	99,000
6/27/80	69	Big Lagoon	124,200
6/30/80	66	Lake Earl	118,800
TOTAL			342,000

* Hatchery estimate.

STEELHEAD MAINTENANCE PROGRAM

History of the 1979-80 Steelhead Run

The adult steelhead run at Trinity River Hatchery consisted of 382 fish: 191 males and 191 females. From January 25 through April 16, 167 of the females were spawned, producing 417,000 eggs, for an average of 2,497/female. Egg size averaged 212/oz. We also received 475,767 winter-run steelhead eggs (1980 Klamath River strain) from Iron Gate Hatchery.

Marked Steelhead Returns

Of the 382 steelhead trapped at Trinity River Hatchery during the 1979-80 season, 329 (86%) were marked (Table 6).

Steelhead Planted

We planted 385,211 steelhead in FY 1979-80 (Table 7).

TABLE 7. Steelhead Planting Summary

Strain	Brood year	Date	Number /lb.	Mark	Release site	Number released ^{1/}
Trinity	1979	1/23-3/20/80 ^{2/}	11.3	Ad-RP	Hatchery	2,402
Trinity	1979	1/23-3/28/80 ^{2/}	7.5	Ad-RP	Hatchery	9,408
Klamath	1979	1/24/80	58.0	None	Freshwater Lagoon	33,350
Klamath	1979	1/24/80	72.0	None	Freshwater Lagoon	32,400
Klamath	1979	4/ 9/80	6.3	LV-RP ^{3/}	Hatchery	32,760
Trinity	1979	4/ 9/80	7.7	RV-LP ^{4/}	Hatchery	43,389
Trinity	1979	4/1-9/80 ^{2/}	6.1	Ad-RP	Hatchery	6,555
Klamath	1979	4/15/80	9.0	LV-RP ^{3/}	Hatchery	61,740
Trinity	1979	4/15/80 ^{5/}	7.0	Ad-LP ^{5/}	Hatchery	26,740
Trinity	1979	4/17/80	9.2	RV-LP ^{4/}	Hatchery	73,830
Trinity	1979	4/17/80	8.4	RV-LP ^{4/}	Hatchery	43,512
Klamath	1979	4/30/80	9.0	LV-RP ^{3/}	Hatchery	19,125
TOTAL						385,211

^{1/} Hatchery estimate.

^{2/} Fish which emigrated as part of the Voluntary Emigration Study conducted by AFB. Study summarized in--FY 1980 Annual Report--Trinity River Basin Fish and Wildlife Task Force Priority Work Item No. 5 Task VII. Progress Report December 1981.

^{3/} The total number LV-RP marked fish released after correcting for poor marks was 109,761.

^{4/} Some fish from Voluntary Emigration Study which did not emigrate and marked Ad-LP may have been included within this group. Total RV-LP after correcting for poor marks and mixing with Ad-LP 133,782.

^{5/} Voluntary Emigration Study nonemigrants. Actual number marked and released 52,781. Ad-LP marked fish mixed with RV-LP marked fish at hatchery.

TABLE 6. Marked Steelhead Recovered at Trinity River Hatchery, 1979-80

Mark	Number trapped	Mean fork length in inches (range)	Probable origin				
			Brood year	Date planted	Location	Number	Strain
Ad-LV ^{a/}	10	16.5 (12-21)	1974	4/23/76	TR ^{b/}	46,221	Iron Gate
Ad-LV-RP	1	32.0	1975	3/21/77	TRH	21,000	Trinity River
Ad-RV ^{a/}	12	18.0 (14.5-21)	1975	4/ 5/77	TR ^{b/}	118,966	Iron Gate
Ad-RV-LP	3	23.0 (21-26)	1975	3/21/77	TRH	43,658	Iron Gate
LV	2	26.5 (23-30)	1974	4/23/76	TR ^{b/}	38,509	Trinity River
LV-RP	36	24.0 (14.5-30.5)	1976	4/1-21/77	TRH	175,230	Trinity River
RV-LP	28	22.5 (16-29)	1976	4/1-21/77	TRH	129,587	Iron Gate
Ad-LV-RV	229	19.5 (13.5-23.5)	1977	4/7-17/78	TRH	152,876	Iron Gate
RPC ^{c/}	1	26.0					
RV-LV ^{c/}	1	19.0					
LP ^{c/}	5	11.0 (10-15)					
RV-LV-RP ^{c/}	1	16.5					

- ^{a/} Steelhead >16 in. FL are assumed to be from the 1974 BY which was released in 1976. Fish <16 in. FL could be either 1974 BY nonmigrants or 1978 BY released in 1979.
- ^{b/} TR = Trinity River-planted at various locations (Bedell 1978).
- ^{c/} Unidentified mark-origin unknown.

BROWN TROUT MAINTENANCE PROGRAM

History of the 1979 Brown Trout Run

As has been the case in recent years, a few small brown trout approximately 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 brown trout trapped at the hatchery were returned to the Trinity River.

Brown Trout Planting

No brown trout were planted during fiscal year 1979-80.

REFERENCES

- Bedell, G. W. 1978. 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. 1980. Annual report Trinity River Salmon and Steelhead Hatchery 1978-79. Calif. Dep. Fish and Game, Anad. Fish. Br. Admin. Rep. 80-14. 23 p.

Appendix Table 1
Trinity River Salmon and Steelhead Hatchery Weather,
Water Data, and Counts of Fish during Spawning
Operations, July 1, 1979, through June 30, 1980

July	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	Grilse	
1	86	48	57	55	clear	309					
2	87	50	54	53	cloudy-clear	311					
3	80	41	52	52	partly cloudy	310					
4	78	57	51	51	cloudy	310					
5	83	47	51	49	clear	311					
6	81	49	50	49	cloudy-clear	311					
7	83	46	51	49	clear	309					
8	83	47	51	50	clear	286					
9	78	55	54	50	cloudy	303					
10	82	58	53	50	fog-clear	320					
11	89	49	52	49	clear	314					
12	92	50	54	50	clear	309					
13	98	48	53	52	clear	303					
14	104	49	54	53	clear	299					
15	101	52	57	52	clear	296					
16	104	54	56	51	clear	294					
17	104	53	55	52	clear	294					
18	107	54	56	52	clear	291					
19	108	54	57	53	clear	289					
20	100	58	57	53	clear	284					
21	90	57	55	52	cloudy-clear	282					
22	93	54	55	52	clear	283					
23	100	56	54	53	clear	286					
24	100	58	55	53	clear	286					
25	102	54	55	53	clear	304					
26	98	54	58	52	clear	319					
27	92	52	55	54	clear	322					
28	98	50	55	54	clear	320					
29	100	50	54	53	clear	314					
30	105	50	56	54	clear	315					
31	101	54	57	54	clear	315					

*From USGS records.

Appendix Table 1 (Continued)

August.	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	
1	103	54	56	54	clear	312			
2	105	54	55	54	clear	308			
3	102	54	52	52	clear	311			
4	90	52	54	50	clear	307			
5	93	49	54	50	clear	307			
6	98	46	53	50	clear	312			
7	98	50	52	50	clear	312			
8	99	51	52	50	clear	312			
9	96	50	54	49	clear	314			
10	103	54	52	50	clear	315			
11	99	54	54	50	clear	310			
12	96	51	56	50	clear-cloudy	303			
13	72	54	51	50	partly cloudy	303			
14	86	47	51	50	partly cloudy	303			
15	84	48	53	49	partly cloudy	303			
16	86	50	52	49	partly cloudy	307			
17	90	48	51	50	clear	307			
18	93	49	50	49	partly cloudy	307			
19	79	51	50	50	cloudy	312			
20	74	48	50	49	partly cloudy	320			
21	76	49	51	48	partly cloudy	320			
22	83	47	50	49	partly cloudy	320			
23	82	50	51	49	partly cloudy	320			
24	90	45	51	50	clear	320			
25	94	52	52	50	partly cloudy	320			
26	91	48	50	49	clear	320			
27	88	50	51	50	partly cloudy	320			
28	80	56	51	50	cloudy	320			
29	82	49	52	49	partly cloudy	282			
30	75	50	51	50	partly cloudy	173			
31	84	51	51	48	clear	242 (Ladder opened)			

*From URS records.

Appendix Table 1 (Continued)

September	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	Grilse	
1	78	50	50	48	cloudy-rain	307					
2	79	55	50	50	partly cloudy	307					
3	83	57	50	49	partly cloudy	308					
4	86	48	50	49	clear	308	133	4			
5	90	46	50	50	clear	308					
6	94	48	51	49	clear	305	33				
7	94	48	52	51	clear	303					
8	84	52	51	50	partly cloudy	303					
9	86	44	52	51	clear	303					
10	94	43	51	50	clear	303	109	4			
11	98	44	52	51	clear	303					
12	104	44	54	51	clear	299					
13	104	44	54	52	clear	307	36	1			
14	102	49	55	52	clear	307					
15	102	48	52	51	clear	303					
16	98	50	53	51	clear	303					
17	96	49	56	52	clear	307	133	6			
18	86	46	54	51	clear	311					
19	92	44	53	51	clear	311					
20	96	44	55	52	clear	311	131	7			
21	84	44	56	51	clear	307					
22	88	43	54	50	clear	307					
23	86	41	54	50	clear	307					
24	93	43	54	50	partly cloudy	528	251	11			
25	73	54	53	50	rain-cloudy	580					
26	88	50	53	51	clear	577					
27	92	46	55	51	fog	574	275	33			
28	90	46	54	50	fog-clear	442					
29	85	48	54	51	partly cloudy	294					
30	91	44	53	51	partly cloudy	295					
TOTALS							1,101	66			

*From USGS records.

Appendix Table 1 (Continued)

October.	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	Grilse	
1	98	46	53	51	clear	295	193	39	1		
2	97	42	56	52	clear	297	.				
3	94	47	55	52	clear	298					
4	96	48	55	52	clear	295	104	41	1	1	
5	86	48	56	53	partly cloudy	295					
6	82	51	55	53	cloudy	295					
7	80	48	54	52	partly cloudy	293					
8	81	49	54	52	showers	293					
9	91	48	55	52	clear	295	137	89	1	1	
10	86	45	54	52	partly cloudy	301					
11	80	40	53	52	partly cloudy	301	53	63	5	3	
12	84	42	53	52	clear	301					
13	76	42	53	52	cloudy	299					
14	64	50	52	52	cloudy-rain	232					
15	73	44	53	52	clear	299	70	138	16	3	
16	70	50	53	51	clear	298					
17	73	46	53	52	clear	300					
18	54	46	50	50	rain	302	109	196	40	18	
19	58	51	49	49	rain	301					
20	52	40	48	47	cloudy-rain	301					
21	61	37	48	47	partly cloudy	300					
22	50	44	47	47	rain	300	151	195	69	23	
23	45	43	47	47	fog-cloudy	301					
24	45	45	46	46	clear-rain	304					
25	63	49	47	47	cloudy-rain	306	147	179	54	21	
26	65	40	48	46	clear	302					
27	65	42	47	46	fog-cloudy	300					
28	64	35	47	46	partly cloudy	299					
29	63	34	48	46	clear	301	208	217	205	110	
30	60	34	46	46	rain-clear	304					
31	66	37	47	46	fog-clear	305					
TOTALS							1,172	1,157	392	180	

*From UCCS records.

Appendix Table 1 (Continued)

November	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	Grilse	
1	60	39	47	46	clear	304	115	89	128	59	
2	51	42	46	46	rain	306					
3	51	44	46	46	rain	307					
4	54	41	46	46	cloudy-rain	303					
5	56	45	47	46	showers	301	107	74	224	193	1
6	57	46	47	46	rain	305					
7	68	39	48	46	clear	302					
8	63	38	47	46	clear	299	62	53	376	247	
9	53	40	46	46	clear	303					
10	58	38	47	46	fog-clear	309					
11	63	38	47	46	fog-clear	307					
12	62	37	47	46	fog-clear	304					
13	61	36	47	46	fog-clear	306	40	11	347	229	2
14	63	32	47	46	fog-clear	307					
15	59	31	47	46	cloudy-rain	312	12		154	77	
16	50	45	47	47	rain	317					
17	58	40	47	46	cloudy	306					
18	54	36	47	46	clear	304					
19	53	33	47	46	clear	304	7	1	287	108	1
20	52	29	46	46	clear	305					
21	51	29	46	45	clear	307					
22	32	26	45	45	rain-snow	309					
23	41	33	45	45	foggy-rain	310	2	1	180	28	
24	37	33	45	45	rain-cloudy	315					
25	42	32	45	45	fog-rain	314					
26	48	31	45	44	clear	313			270	54	
27	46	25	45	44	clear	312					
28	52	31	45	44	clear	311					
29	53	32	45	44	clear	308			148	11	1
30	48	38	44	44	clear	308					
TOTALS							345	229	2,114	1,006	5

*From USGS records.

Appendix Table 1 (Continued)

December	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	Grilse	
1	46	34	44	43	partly cloudy	308					
2	50	36	44	43	rain-cloudy	311					
3	56	37	45	44	clear	313		74	13		
4	49	36	44	44	partly cloudy	314					
5	56	38	45	44	clear	315					
6	53	36	45	44	clear	315		73	4		
7	56	36	45	44	clear	310					
8	57	39	45	44	fog-clear	313					
9	56	39	45	44	partly cloudy	313					
10	39	37	45	45	clear	313		80	11		
11	48	24	45	44	clear	313					
12	47	22	45	44	partly cloudy	313					
13	50	26	44	44	clear	313		24	3		
14	46	28	44	43	fog-clear	313					
15	49	29	44	43	fog-clear	313					
16	49	29	44	43	partly cloudy	313					
17	53	30	44	43	partly cloudy	313					
18	53	33	44	43	cloudy	313		17	6		
19	43	39	44	43	rain	314					
20	45	40	44	43	rain	314					
21	50	35	44	43	partly cloudy	317					
22	47	29	43	43	partly cloudy	317					
23	36	30	42	43	snow	316					
24	44	30	42	42	snow	317		5			
25	41	32	43	42	rain-clouds	316					
26	44	33	43	42	fog-clear	313					
27	46	29	43	42	fog-clear	313					
28	41	28	43	42	clear	304					
29	41	28	43	42	clear-cloudy	307					
30	43	32	43	43	rain-cloudy	307					
31	48	37	44	43	cloudy-rain	307		9	30	4	
TOTALS								282	67	4	

*From USGS records.

Appendix Table 1 (Continued)

January	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped			
	Air		Water				Chinook salmon Adults	Grilse	Coho salmon Adults	Steelhead
	Maximum	Minimum	Maximum	Minimum						
1	48	38	44	44	fog	307				
2	46	35	44	44	fog	301				
3	41	32	44	44	fog	304				
4	46	34	44	43	fog-cloudy	312				
5	44	44	47	38	rain-cloudy	313				
6	48	39	44	44	fog-cloudy	312				
7	43	35	44	44	fog-cloudy	315				
8	51	37	45	44	fog-clear	311				
9	47	36	44	44	rain	313				
10	43	29	44	44	clear-cloudy	316				
11	39	32	44	44	cloudy-rain	313				
12	58	36	44	43	cloudy-rain	317				
13	53	44	44	44	cloudy-rain	317				
14	52	42	44	44	cloudy-rain	315				
15	47	40	44	44	overcast	312				
16	51	40	44	44	rain	310				
17	56	42	45	44	clear	307				
18	53	43	45	44	clear	308				
19	59	23	44	43	clear	310				
20	55	25	44	43	partly cloudy	311				
21	54	29	44	43	clear	311				
22	58	30	44	43	fog-clear	312				
23	61	29	44	43	fog-clear	312				
24	58	32	45	43	fog-clear	311				
25	45	44	56	32	fog-clear	310			1	
26	62	29	44	43	fog-clear	310				
27	50	27	44	43	cloudy-clear	309				
28	50	23	44	43	clear	309				
29	50	17	44	42	clear	384				
30	59	15	44	42	clear	313			1	
31	50	30	43	43	cloudy	313				
TOTAL:										
									2	

*From USGS records.

Appendix Table 1 (Continued)

February	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		
1	50	30	43	43	cloudy	313			1	
2	57	33	44	43	fog-rain	314				
3	64	43	45	43	rain-cloudy	317				
4	59	40	45	44	fog-overcast	314				
5	52	40	45	44	fog-rain	386				
6	59	37	45	44	clear	313				
7	65	28	46	44	clear	313				
8	65	28	46	44	clear	314				
9	60	30	46	44	fog-hazy	313				
10	60	32	46	45	fog-clear	314				
11	64	27	46	44	fog-clear	314				
12	60	27	46	45	fog-clear	386			4	
13	64	27	47	45	fog-clear	315				
14	50	32	46	45	cloudy	314				
15	55	40	46	45	rain	316				
16	51	44	46	46	rain	318				
17	44	42	46	46	rain	323				
18	52	44	47	46	rain	343				
19	50	44	47	46	rain	427				
20	53	38	46	46	clear-rain	369			2	
21	57	36	46	45	clear-cloudy	484			1	
22	57	35	47	46	rain-clear	1450				
23	58	34	47	46	cloudy	2060			31	
24	59	40	47	47	cloudy-rain	2050			95	
25	51	44	47	47	cloudy-rain	2040			126	
26	65	44	47	46	partly cloudy	2030			16	
27	59	48	46	46	rain	2020			1	
28	58	40	46	46	cloudy	2170			2	
29	64	41	46	45	cloudy	2690			7	
TOTAL										286

*From USGS records.

Appendix Table 1 (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	Grilse	
1	53	37	45	45	fog	2610					
2	52	38	45	45	partly cloudy	2590					
3	54	40	45	45	showers	2590					
4	48	31	45	45	rain	2590					
5	55	34	45	45	rain	2580				1	
6	50	37	46	45	cloudy	2560					
7	59	35	45	45	cloudy	2560				4	
8	63	36	45	45	partly cloudy	2560					
9	68	34	46	45	fog-clear	2550				3	
10	70	33	47	45	fog-clear	2560				2	
11	52	27	46	45	cloudy-windy	2410				5	
12	42	29	45	45	clear-cloudy	2180				6	
13	44	40	45	45	rain	2130				8	
14	50	42	45	45	rain	1690				3	
15	50	34	45	45	partly cloudy	1070				8	
16	62	28	46	44	fog-clear	539				2	
17	51	32	45	44	showers	284				6	
18	60	30	45	44	clear	351				7	
19	70	28	47	45	clear	292					
20	53	40	46	45	cloudy-windy	295					
21	63	40	46	45	fog-clear	295				3	
22	65	27	47	46	clear	295				2	
23	61	29	47	46	cloudy-clear	295					
24	63	26	47	46	clear	295					
25	60	33	47	46	showers	359				2	
26	60	34	47	46	clear	298				3	
27	60	29	47	47	clear	298				2	
28	70	29	47	47	clear	298				3	
29	71	29	47	46	clear	295				1	
30	60	29	47	46	clear	295					
31	58	28	47	47	partly cloudy	298				1	
TOTAL											72

*From USGS records.

Appendix Table 1 (Continued)

April	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	Grilse	
1	58	30	47	46	partly cloudy	295					
2	65	27	49	47	cloudy	295				2	
3	53	29	46	46	cloudy-rain	295					
4	57	39	46	46	rain	298					
5	55	40	46	46	cloudy-rain	298					
6	51	39	46	45	partly cloudy	298				1	
7	60	30	47	46	clear	293					
8	64	36	48	46	cloudy	296				1	
9	63	45	48	47	cloudy-clear	298					
10	70	30	50	48	clear	297				3	
11	77	30	50	48	clear	295					
12	81	31	52	48	clear	295					
13	74	39	51	48	hazy-clear	293					
14	63	41	50	49	cloudy	294				6	
15	79	37	51	49	cloudy-clear	294					
16	79	35	53	49	clear	293					
17	79	40	54	51	clear-windy	292					
18	80	40	51	50	clear	294					
19	78	41	53	50	clear-cloudy	293					
20	59	49	49	49	cloudy-rain	293					
21	58	36	49	49	showers	296					
22	65	43	52	49	clear	298					
23	76	48	50	48	clear	296					
24	76	39	53	50	partly cloudy	295					
25	76	42	53	50	partly cloudy	295					
26	76	46	53	50	partly cloudy	297					
27	85	40	54	50	clear	298					
28	82	46	52	51	clear	298					
29	80	40	53	49	clear	298 (Ladder closed)					
30	76	36	56	51	clear	299					
TOTAL											

13

*From USGS records.

Appendix Table 1 (continued)

May	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	Grilse	
1	84	38	54	52	clear	298					
2	87	40	55	50	clear	298					
3	83	45	57	52	clear	298					
4	81	44	56	53	clear	298					
5	79	45	57	55	partly cloudy	293					
6	74	47	54	54	clear	293					
7	82	38	58	55	clear	294					
8	55	54	55	54	overcast	295					
9	54	46	55	55	rain	294					
10	62	32	54	53	fog	293					
11	58	32	54	53	cloudy	292					
12	60	41	54	53	partly cloudy	292					
13	72	45	54	53	cloudy	292					
14	73	46	54	53	partly cloudy	289					
15	78	39	56	53	clear	288					
16	82	38	58	53	clear	288					
17	88	40	57	55	clear	288					
18	90	42	60	56	clear	288					
19	91	45	59	57	clear	288					
20	95	47	61	57	clear	287					
21	85	46	58	57	clear	288					
22	65	45	56	56	clear-windy	288					
23	58	34	55	55	showers	287					
24	62	34	55	54	partly cloudy	280					
25	65	33	55	53	partly cloudy	291					
26	72	42	56	54	partly cloudy	292					
27	74	40	56	54	cloudy	291					
28	74	42	56	54	fog-cloudy	291					
29	80	45	58	54	cloudy-humid	292					
30	81	43	59	56	cloudy	292					
31	84	44	60	57	clear	294					

*From USGS records.

Appendix Table 1 (Continued)

June	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	Grilse	
1	78	48	60	57	clear	292					
2	68	42	56	55	cloudy	290					
3	55	53	66	36	clear	295					
4	56	45	53	54	misty-rain	294					
5	66	47	54	53	cloudy	294					
6	67	43	53	53	cloudy-rain	294					
7	73	48	54	53	cloudy	295					
8	77	48	54	53	clear	295					
9	87	48	56	54	clear	311					
10	87	43	56	55	clear	330					
11	69	43	55	54	overcast	327					
12	67	45	54	54	cloudy	325					
13	65	45	54	54	cloudy-rain	320					
14	72	42	56	53	partly cloudy	320					
15	83	43	57	54	clear	320					
16	88	46	57	55	clear	318					
17	93	49	58	55	clear	316					
18	93	48	58	55	clear	316					
19	89	50	54	53	clear	317					
20	85	51	53	51	clear	320					
21	80	48	53	51	clear	317					
22	73	48	52	50	clear-rain	317					
23	77	45	52	50	clear	317					
24	51	51	73	48	cloudy	317					
25	51	49	74	49	cloudy	319					
26	51	49	81	44	clear	320					
27	52	50	92	42	clear	321					
28	91	50	52	50	clear	321					
29	86	50	52	51	clear	322					
30	88	48	51	50	clear	326					
TOTALS for season							2,618	1,452	2,788	1,253	382

* From USGS records.

Appendix Table 2. Summary of Fish Runs to Trinity River
Salmon and Steelhead Hatchery

	King salmon			Silver 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
1978-79	4,674	5,131	1,387	580	995	2,080	683	0
1979-80	1,138	1,480	1,452	1,241	1,547	1,253	382	0