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ANNUAL REPORT
TRINITY RIVER SALMON AND STEELHEAD HATCHERY 1980-81^{1/}

by

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ABSTRACT

This report describes the operation of Trinity River Salmon and Steelhead Hatchery for the period 1 July 1980 through 30 June 1981. Chinook salmon, Oncorhynchus tshawytscha, coho salmon, O. kisutch, and steelhead, Salmo gairdneri, were reared.

Tables present the numbers of adults spawned and eggs and fish produced and planted. The appendix tables present the numbers of eggs and fish shipped and received, and daily weather, water temperature, and fish trapping data for fiscal year 1980-81.

^{1/} Anadromous Fisheries Branch Administrative Report No. 83-3
Submitted January 1983.

INTRODUCTION

This is the 23rd consecutive fiscal year 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 15 May 1963. Operation and maintenance costs are paid by the Bureau.

This report describes operation of the hatchery from 1 July 1980 through 30 June 1981. Copies of previous annual reports are available upon request from the Anadromous Fisheries Branch, Sacramento.

PRODUCTION SUMMARY

The ladder was opened and chinook salmon entered the hatchery beginning 2 September. The run continued through 27 November. Coho salmon were trapped from 6 October through 27 December. Steelhead entered the hatchery from 16 October 1980 through 19 March 1981. Several small brown trout entered the hatchery from September through December but were not spawned because they did not exhibit anadromous characteristics.

Production data are summarized in Table 1.

TABLE 1. Production Summary, Trinity River Salmon and Steelhead Hatchery, 1980-81

Species	Number trapped	Number females spawned	Eggs taken or received	Number fingerlings planted	yearlings or broodstock planted	Total pounds planted	On hand 30 June 1981
Chinook salmon	7,258	1,776	4,243,000	1,481,045	836,178	81,260	1,000,000
Coho salmon	3,323	898	2,171,000	129,800	434,383	39,620	450,000
Steelhead	2,019	935	2,082,000 ^a /	226,960	232,734	32,336	1,723,000
Totals	12,600	3,609	8,496,000	1,837,805	1,503,295	153,216	3,173,000

a/ 374,000 Trinity; 1,708,000 Trinity River Iron Gate Strain.

HATCHERY OPERATION

All production fish were reared on a diet of Oregon Moist Pellet (OMP). A total of 301,012 lb of feed produced 153,216 lb of fish during fiscal year 1980-81. The feed conversion rate (pounds of feed required to raise 1 lb of fish) was 1.96.

The presence of IHN or cold water virus was confirmed at Trinity River Hatchery again this past year. Losses were minor, however, probably less than 0.1% of the chinook salmon fingerlings on hand. We did have a major loss because of a clogged intake screen in April 1981. We lost approximately 400,000 fall run and 250,000 spring run chinook salmon fingerlings. We also lost about 20,000 steelhead fingerlings which were still in the incubators.

Fish loss to predators was substantial this past year. The population of river otters in the area has increased drastically over the past few years. Efforts to keep the animals out of the raceways with electric fences were largely ineffective.

The hatchery had 13,014 visitors in 1980-81. Guided tours were provided for several of the larger groups of visitors, most of which were from schools in the area.

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1980 Run

Chinook salmon first appeared in the upper river on 3 June and continued arriving in small numbers throughout the summer. The ladder was opened on 29 August and spawning operations were begun on 11 September.

Spring Run

Between 2 September and 9 October 1980, 1,288 chinook salmon, thought to be mostly spring-run, were trapped. This number included 296 males, 216 females, and 776 grilse. Chinook salmon males less than 56 cm (22 inches) FL were considered grilse. The 137 females spawned during this period produced 377,000 eggs, an average of 2,752/female. Egg size averaged 90/ounce.

Fall-run

There were 5,970 chinook salmon trapped from 10 October to 27 November: 2,449 males, 2,055 females, and 1,466 grilse. All were assumed to be fall-run. The 1,639 fall-run females which were spawned produced 3,866,000 eggs, an average of 2,359/female. Egg size averaged 107/ounce.

Marked Chinook Salmon Returns

A total of 4,431 chinook salmon marked with an adipose clip and tagged with coded wire tags entered the hatchery during the 1980 season.

Planting 1979 Brood Year Chinook Salmon

A total of 836,178 chinook salmon yearlings (1979 brood year) was planted at the hatchery during this fiscal year (Table 2).

TABLE 2. Yearling Chinook Salmon Planted

Date	Race	Size/lb	Release	Number
10/15/80	Trinity (Spring-R.)	13.6	Hatchery	86,768
10/15/80	Trinity (Fall-R.)	16.6	Hatchery	39,010
10/16/80	Trinity (Fall-R.)	14.6	Hatchery	52,998
10/16/80	Trinity (Fall-R.)	14	Hatchery	24,220
10/17/80	Trinity (Fall-R.)	14	Hatchery	147,210
10/20/80	Trinity (Fall-R.)	14	Hatchery	78,120
10/21/80	Trinity (Fall-R.)	14.5	Hatchery	75,617
10/22/80	Trinity (Fall-R.)	13	Hatchery	8,450
10/22/80	Trinity (Fall-R.)	16.4	Hatchery	114,390
10/23/80	Trinity (Fall-R.)	16	Hatchery	75,600
3/3/81	Trinity (Fall-R.)	7	Hatchery	11,550
3/4/81	Trinity (Spring-R.)	7.7	Hatchery	36,960
3/5/81	Trinity (Fall-R.)	7.4	Hatchery	85,285
				Total 836,178

A total of 826,532 chinook (1979 brood year) salmon was planted last fiscal year as fingerlings. Of the 3,217,000 (spring and fall-run) eggs taken in 1979, 1,662,710 (52%) were eventually planted.

Planting 1980 Brood Year Chinook Salmon

A total of 1,481,045 chinook salmon fingerlings (1980 brood year) was planted in the Trinity River at the hatchery (Table 3).

TABLE 3. Fingerling Chinook Salmon Planted

Date	Race	Size/lb	Release	Number
6/2/81	Trinity (Fall R.)	81	Hatchery	151,065
6/2/81	Trinity (Fall R.)	94	Hatchery	122,200
6/3/81	Trinity (Fall R.)	130	Hatchery	104,000
6/3/81	Trinity (Fall R.)	98	Hatchery	6,370
6/3/81	Trinity (Fall R.)	116	Hatchery	312,040
6/3/81	Trinity (Fall R.)	102	Hatchery	79,560
6/4/81	Trinity (Fall R.)	98	Hatchery	299,880
6/5/81	Trinity (Fall R.)	86	Hatchery	205,110
6/11/81	Trinity (Fall R.)	75	Hatchery	139,500
6/11/81	Trinity (Fall R.)	84	Hatchery	61,320
				Total 1,481,045

A total of 444,955 of the fingerlings was marked with a right ventral fin clip. An additional 205,110 were marked with an adipose clip and a coded wire tag.

Approximately 1,000,000 fall-run and 40,000 spring-run fingerlings are being held at the hatchery for release as yearlings.

COHO SALMON MAINTENANCE PROGRAM

History of the 1980 Run

Coho salmon entered the hatchery from 6 October through 27 December 1980. A total of 3,323 fish was trapped: 753 males; 1,070 females; and 1,500 grilse.

There were 898 females spawned from 30 October through 15 December. They produced 2,171,000 eggs, an average of 2,418/female. Egg size averaged 96/ounce.

Marked Coho Salmon Returns

A total of 1,910 of the coho salmon trapped had been previously marked with an adipose clip.

Planting 1979 Brood Year Coho Salmon

A total of 112,200 Trinity strain coho was released as fingerlings (66/lb) at Lake Earl on 1 July 1980. A total of 434,383 were released as yearlings (Table 4).

TABLE 4. Coho Salmon Yearlings Planted

Date	Race	Size/lb.	Release site	Number
2/27/81	Trinity	14	Hatchery	49,910
3/3/81	Trinity	6.8	Hatchery	27,800
3/16/81	Trinity	12.6	Hatchery	44,856
4/6/81	Trinity	11.6	Hatchery	53,824
4/13/81	Trinity	12	Hatchery	112,800
4/14/81	Trinity	12	Hatchery	56,700
4/20/81	Trinity	11.7	Hatchery	44,753
5/4/81	Trinity	10.8	Hatchery	43,740
Total				434,383

Planting 1980 Brood Year Coho Salmon

A total of 17,600 Trinity strain coho was released as fingerlings (320/lb) at Willow Creek on the Trinity River on 4 April 1981.

STEELHEAD MAINTENANCE PROGRAM

History of the 1980-81 Steelhead Run

The adult steelhead run at Trinity River Hatchery consisted of 2,019 fish: 1,047 males and 972 females. As determined by fin clips 1,754 of the fish were of probable Klamath River origin and 154 were probably Trinity River fish. During the period from 30 December 1980 to 27 March 1981, 838 of the Klamath River females were spawned. They produced 1,708,000 eggs, an average of 2,038/female. Egg size averaged 239/ounce.

From 30 December 1980 to 20 March 1981, 97 Trinity River females were spawned. They produced 374,000 eggs, an average of 3,856/female. Egg size averaged 235/ounce.

Marked Steelhead Returns

Of the 2,019 steelhead trapped at Trinity River Hatchery during the 1980-81 season, 1,911 (95%) had been previously marked. (Table 5).

Table 5. Marked Steelhead Recovered at Trinity River Hatchery, 1980-81

Mark	Number trapped	Mean fork length in inches (range)	Probable origin				
			Brood year	Date planted	Location	Number	Strain
LP	1,277	18.5 (14.5-22.5)	1978	3/22/79	Hatchery	342,661	Iron Gate
Ad	7	20.5 (17.5-25.0)	? ^{a/}				
Ad-RV	46	22.0 (17.0-29.0)	1978	2/9 to 3/19/79	Hatchery	14,753	Trinity River
RP	449	19.0 (23.5-15.5)	1978	4/ 4/79	Hatchery	68,133	Iron Gate
LV	6	22.0 (19.0-25.0)	? ^{b/}				
Ad-LP	6	18.5 (16.0-20.5)	1979	4/15/80	Hatchery	26,740	Trinity River
Ad-RP	4	18.5 (17.0-20.0)	1979	1/23 to 4/9/80	Hatchery	18,365	Trinity River
Ad-LV-RV	15	20.5 (16.5-22.5)	1977	4/7 to 4/17/78	Hatchery	152,876	Iron Gate
Ad-LV	97	22.0 (16.0-26.0)	1978	4/ 4/79	Hatchery	30,903	Trinity River
RV-LP	2	24.0 (24.0-24.0)	1976	4/ 1/77	Hatchery	129,585	Iron Gate
LV-RP	1	20.5	1976	4/21/77	Hatchery	31,886	Trinity River
LP-RP	1	21.0	? ^{c/}				

^{a/} Probable TRH origin and TR strain

^{b/} Probable TRH origin and TR strain

^{c/} Poorly marked - Probably TRH origin and either LP or RP

Steelhead Planted

There were 459,694 steelhead planted in FY 1980-81 (Table 6).

TABLE 6. Steelhead Planting Summary, Trinity River Salmon & Steelhead Hatchery, 1980-81

Strain brood year	Date released	Average size/lb	Mark	Release site	Number released
Iron Gate - 1980	1/ 5/81	65	None	Freshwater Lagoon	117,000
Iron Gate - 1980	1/ 6/81	65	None	Freshwater Lagoon	78,460
Trinity River - 1980	1/ 6/81	60	None	Freshwater Lagoon	31,500
Trinity River - 1979	3/26/81	5.8	Ad-LV-RP	Hatchery	29,104
Iron Gate - 1979	3/26/81	5.8	Ad-RV-LP	Hatchery	4,223
Trinity River - 1980	4/14/81	7	LV-RV	Hatchery	51,800
Iron Gate - 1980	4/15/81	9.8	Ad-LV ^{a/}	Hatchery	36,750
Iron Gate - 1980	4/15/81	9.3	RV	Hatchery	60,217
Iron Gate - 1980	2/23 to 4/13/81	9.9	Ad-RV ^{b/}	Hatchery	1,815
Iron Gate - 1980	4/28/81	9.3	Ad-LV	Hatchery	48,825
			Total		459,694

^{a/} Emigration Study (Residuals)

^{b/} Emigration Study

BROWN TROUT MAINTENANCE PROGRAM

No brown trout were spawned or planted during fiscal year 1980-81.

APPENDIX TABLE 1. Eggs and Fish Shipped from and Received at Trinity River Hatchery, 1 July 1980 - 30 June, 1981

Shipped	Number	Date	Destination
Chinook salmon fingerlings (1979 Broodyear) Fall-run Trinity River Strain	10,032	6/26/80	Fish & Wildlife Service Hatchery at Hoopa, CA
Total Shipped	10,032		

APPENDIX TABLE 2. Summary of Fish Runs to Trinity River
Salmon and Steelhead Hatchery

	Chinook salmon		Coho salmon					
	Males	Females	Grilse	Males	Females	Grilse	Steelhead	Brown trout
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
<u>1967-68</u>	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	4,678	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
1980-81	2,745	2,271	2,242	753	1,070	1,500	2,019	0

APPENDIX TABLE 3. Trinity River Salmon and Steelhead Hatchery Weather and Water Data, and Counts of Fish during Spawning Operations, July 1, 1980, through June 30, 1981

July	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Water				Chinook salmon	Coho salmon				
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse				
1	86	50	52	51	clear	448						
2	68	56	52	51	partly cloudy	456						
3	83	58	54	52	cloudy	452						
4	81	46	53	52	partly cloudy	458						
5	80	52	53	52	partly cloudy	456						
6	82	48	53	53	clear	454						
7	80	48	53	52	clear	389						
8	79	52	53	52	high clouds	302						
9	72	39	53	52	partly cloudy	303						
10	89	42	53	51	clear	302						
11	89	47	53	52	clear	308						
12	86	49	53	52	clear	466						
13	89	50	54	52	clear	462						
14	87	52	54	52	clear	390						
15	96	53	54	52	clear	301						
16	97	54	54	51	clear	303						
17	99	54	55	52	clear	302						
18	98	54	55	52	partly cloudy	306						
19	100	54	54	52	clear	458						
20	102	56	54	52	clear	457						
21	100	58	54	52	clear	386						
22	102	56	54	52	clear	301						
23	101	57	54	52	clear	298						
24	104	58	55	52	clear	303						
25	106	56	55	52	clear	460						
26	107	56	55	52	clear	457						
27	106	58	55	52	clear	454						
28	100	62	55	52	high clouds	389						
29	99	60	55	53	partly cloudy	299						
30	99	58	54	52	clear	300						
31	99	60	54	52	clear	308						

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*From USGS records.

Appendix Table 3 (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				
1	100	49	54	52	clear	468						
2	102	50	54	51	clear	462						
3	102	50	54	51	clear	458						
4	91	54	53	50	clear	388						
5	87	56	53	51	clear	299						
6	88	52	53	51	clear	300						
7	95	52	54	51	clear	307						
8	90	53	53	50	clear	469						
9	94	52	53	50	clear	466						
10	95	48	54	50	clear	463						
11	99	50	50	50	clear	394						
12	99	48	52	49	clear	306						
13	95	49	55	49	clear	306						
14	88	54	55	50	clear	309						
15	92	51	56	53	clear	464						
16	94	52	56	52	light fog	460						
17	98	52	56	52	clear	455						
18	96	52	54	51	clear	389						
19	93	48	55	51	clear	310						
20	98	49	56	51	clear	314						
21	97	53	56	51	clear	320						
22	92	51	55	50	clear	468						
23	90	50	56	52	clear	462						
24	87	54	57	51	clear	457						
25	88	52	56	51	clear	404						
26	89	52	56	51	partly cloudy	312						
27	54	50	90	45	clear	313						
28	83	48	54	50	clear	320						
29	82	48	54	50	high clouds	473						
30	86	44	53	50	clear	466						
31	90	45	55	50	high clouds	463						

*From USGS records.

Appendix Table 3 (Continued)

September	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Maximum	Minimum			Chinook salmon Adults	Coho salmon Adults	Grilse	Steelhead		
	Maximum	Minimum										
1	95	45	55	50	clear	393						
2	91	47	54	50	clear	310	25	18				
3	93	51	55	50	clear	312						
4	93	51	55	50	clear	316						
5	90	49	55	50	clear	462						
6	88	50	55	50	clear	461						
7	90	46	54	50	clear	466						
8	95	49	54	51	partly cloudy	394						
9	95	49	54	51	partly cloudy	313	12	4				
10	83	50	54	50	cloudy	313						
11	83	50	53	49	cloudy	320	6	9				
12	86	50	52	49	overcast	459						
13	70	44	51	48	clear	452						
14	65	44	50	49	cloudy	445						
15	80	37	50	47	cloudy	385	28	24				
16	89	39	52	49	clear	313						
17	82	42	52	48	sprinkles	313						
18	76	50	51	49	cloudy	313						
19	80	44	52	49	fog-clear	311	6	7				
20	72	50	51	49	partly cloudy	313						
21	80	36	51	48	partly cloudy	313						
22	79	36	52	49	clear	312	50	57				
23	91	40	53	49	clear	314						
24	94	40	53	49	clear	311						
25	82	47	54	49	clear	306	67	109				
26	88	54	54	50	clear	318						
27	84	44	53	49	clear	319						
28	88	45	52	49	clear	318						
29	97	41	53	49	clear	317	75	152				
30	97	43	53	50	clear	317						
TOTALS							269	380				
*From USGS records.						Cumulative Totals	269	380				

Appendix Table 3 (Continued)

October	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	98	43	53	50	clear	313						
2	100	45	54	51	clear	314		65	129			
3	99	47	55	52	clear	314						
4	96	47	56	52	clear	314						
5	96	46	56	53	clear	315						
6	97	47	56	53	clear	315		76	151		4	
7	97	45	56	53	clear	316						
8	93	43	56	53	clear	317						
9	93	43	56	54	clear	318		102	116		8	
10	81	43	55	54	overcast	319						
11	62	42	55	54	cloudy	320						
12	66	44	54	54	cloudy	319						
13	57	44	54	54	cloudy-rain	320						
14	61	40	54	52	drizzles-rain	320		361	156		14	
15	58	38	53	53	fog-clear	319						
16	67	33	53	53	fog-clear	319		299	176	3	38	
17	65	37	53	53	fog-clear	318						
18	75	38	54	53	fog-clear	318						
19	78	38	54	52	fog-clear	319						
20	78	38	54	52	fog-clear	318		509	192	2	48	
21	76	41	53	52	partly cloudy	317						
22	77	40	54	52	clear	318						
23	77	33	53	51	fog-clear	320		665	259	20	116	
24	72	33	52	51	cloudy	319						
25	66	46	51	50	cloudy	317						
26	66	36	51	50	cloudy	317						
27	69	38	51	50	fog-clear	317		670	201	19	56	
28	76	30	50	49	fog-clear	317						
29	73	30	50	48	fog-clear	317						
30	61	32	50	49	cloudy	316		574	191	31	108	
31	70	34	50	48	cloudy	316					2	
TOTALS							3,321	1,571	75	392	9	
*From USGS records.						Cumulative Totals	3,590	1,951	75	392	9	

Appendix Table 3 (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	55	44	49	48	cloudy	317					
2	68	44	50	49	cloudy	317					
3	67	38	49	47	cloudy	316	563	147	57	145	1
4	61	36	49	48	fog-clear	316					
5	68	40	49	48	fog-clear	315					
6	63	40	49	48	cloudy	316	388	79	62	118	
7	67	41	49	48	rain	316					
8	66	44	48	47	fog	317					
9	64	42	48	47	cloudy	318					
10	55	34	47	47	clear	319	251	40	109	170	5
11	58	33	47	46	fog-clear	320					
12	54	30	46	46	cloudy-clear	319					
13	57	26	46	45	clear	320	106	19	118	148	2
14	62	25	46	45	cloudy-clear	320					
15	60	24	46	45	partly cloudy	319					
16	60	26	46	45	partly cloudy	319					
17	60	27	46	45	clear	318	49	5	94	85	2
18	59	30	46	45	fog-clear	318					
19	60	30	46	45	fog-clear	319					
20	59	32	46	45	fog-clear	318	35		161	95	
21	45	32	45	45	fog-rain	317					
22	52	40	46	45	cloudy	318					
23	60	42	46	46	partly cloudy	320					
24	54	31	46	45	fog-clear	319	28	1	271	143	10
25	52	31	46	45	fog-clear	317					
26	53	33	46	45	fog-clear	317					
27	55	35	46	45	fog-clear	317	6		274	87	12
28	54	36	46	45	fog-clear	317					
29	60	38	46	45	cloudy-rain	317					
30	64	34	46	45	partly cloudy	318					
TOTALS							1,426	291	1,146	991	32
						Cumulative Totals	5,016	2,242	1,221	1,383	41

*From USGS records.

Appendix Table 3 (Continued)

December	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	43	29	45	45	rain	319		128	39	7	
2	47	33	45	45	rain	322					
3	52	44	45	45	rain	292					
4	47	31	45	44	clear-cloudy	316		96	22	7	
5	49	30	45	44	fog-cloudy	314					
6	50	34	45	44	cloudy	313					
7	48	24	45	44	fog	312					
8	59	22	44	43	clear	312		240	31	44	
9	50	23	44	43	fog-clear	310					
10	47	27	44	43	fog-clear	310					
11	45	29	44	43	fog	311		44	5	24	
12	43	34	43	43	fog-clear	313					
13	43	28	43	43	fog	312		3	1	3	
14	48	28	43	43	fog	313		6	3	3	
15	59	29	43	42	fog-clear	603		13	3		
16	56	32	43	42	fog-clear	787		22	8	3	
17	51	35	44	43	fog-clear	786		14	1	11	
18	64	34	45	44	fog-clear	783		12	1	34	
19	49	36	46	45	fog-clear	776		1		20	
20	56	42	46	45	fog	769		3		26	
21	54	40	46	46	rain	771		3	1	49	
22	54	40	47	46	fog-clear	651		1	2	143	
23	48	38	46	46	partly cloudy	492				47	
24	47	37	46	46	fog-rain	360		6		85	
25	56	43	47	46	cloudy	308				86	
26	55	45	47	46	fog-cloudy	307		5	3	80	
27	52	40	47	46	rain	307		5		62	
28	56	42	47	46	fog-cloudy	307				38	
29	50	42	47	47	fog-clear	307				56	
30	54	40	47	46	fog-clear	307				37	
31	48	40	47	46	fog-clear	307					
TOTALS							602	117	865		
*From USGS records.						Cumulative Totals	5,016	2,242	1,823	1,500	906

Appendix Table 3 (continued)

January	Temperature F				Weather	Flow of Trihity River at Lewiston (cfs)*	Fish trapped				
	Air Maximum	Air Minimum	Water Maximum	Water Minimum			Chinook salmon Adults	Coho salmon Adults	Grilse	Steelhead	
1	48	38	47	46	fog	307				17	
2	48	34	47	46	fog	306				6	
3	54	40	47	46	rain-clear	307				6	
4	52	40	47	46	cloudy-clear	307				6	
5	53	37	47	46	cloudy-clear	670				12	
6	56	35	47	46	fog-clear	901				18	
7	52	35	47	46	fog-clear	897				7	
8	42	37	46	46	fog-clear	726				30	
9	54	36	47	46	fog-clear	515				71	
10	52	36	47	46	fog-clear	358				2	
11	56	34	47	46	fog-clear	304				20	
12	54	33	46	46	fog-clear	304				34	
13	53	33	46	46	fog-clear	304				33	
14	58	35	46	45	fog-clear	304				8	
15	63	31	46	45	fog-clear	304				1	
16	53	44	47	46	rain	305				1	
17	52	44	47	46	rain-cloudy	305				18	
18	62	40	47	46	partly cloudy	304				31	
19	55	45	47	47	rain-cloudy	306				14	
20	54	42	47	46	drizzles	310				15	
21	59	47	47	47	cloudy	305				81	
22	47	46	47	47	rain	308				22	
23	50	48	47	46	rain	306				5	
24	54	32	47	46	fog-clear	305				46	
25	52	30	47	46	partly cloudy	304				37	
26	42	32	46	45	snow-rain	308				33	
27	42	32	46	45	rain	311				40	
28	50	37	46	45	rain	311				10	
29	50	34	46	45	cloudy	295				28	
30	51	32	46	45	cloudy	293				27	
31	54	30	46	45	cloudy-snow	292				4	
TOTALS										679	
*From USGS records.					Cumulative Totals		5,016	2,242	1,823	1,500	1,585

Appendix Table 3 (Continued)

February	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	50	28	46	45	fog-clear	292					3
2	57	32	46	45	fog-clear	297					
3	57	32	46	45	fog-clear	306					1
4	58	31	46	45	fog-clear	307					1
5	56	31	45	44	light snow	308					1
6	60	30	45	45	clear	315					6
7	64	26	46	44	fog-clear	324					
8	60	28	45	45	cloudy	324					
9	64	35	46	45	fog-clear	648					
10	54	30	46	45	fog-cloudy	854					16
11	50	42	46	46	rain	709					23
12	63	43	46	45	fog-clear	534					32
13	50	43	47	47	rain	407					21
14	62	40	48	47	partly cloudy	332					39
15	64	40	49	47	partly cloudy	319					65
16	57	43	48	46	rain	305					43
17	58	41	48	47	cloudy	323					13
18	72	41	50	48	clear	323					
19	54	45	49	48	rain	323					11
20	61	31	47	47	clear	325					12
21	72	34	50	47	clear	321					9
22	70	31	49	47	fog-clear	324					18
23	58	33	47	47	clear-cloudy	324					26
24	42	37	47	47	rain	323					10
25	45	33	47	46	rain	321					3
26	50	36	47	46	cloudy-rain	313					2
27	60	39	47	46	cloudy-clear	321					2
28	50	34	47	46	cloudy	322					1
TOTALS											358
From USGS records.					Cumulative Totals		5,106	2,242	1,823	1,500	1,943

Appendix Table 3 (Continued)

March	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	Adults	Grilse		
1	56	36	47	46	cloudy	321				2		
2	70	35	47	46	fog-clear	322						
3	60	36	48	46	fog-cloudy	322						
4	48	38	47	47	rain-cloudy	320				6		
5	60	30	48	46	fog-clear	321				6		
6	76	29	48	46	fog-clear	334				2		
7	56	40	47	47	rain-cloudy	372				3		
8	72	42	48	47	partly cloudy	390				10		
9	74	34	49	47	fog-clear	350				13		
10	71	36	49	47	fog-clear	321				2		
11	75	38	49	48	fog-clear	316				5		
12	75	32	49	48	fog-cloudy	316				1		
13	60	38	49	49	fog-cloudy	316				11		
14	60	42	49	48	cloudy-fog	317				-21-		
15	64	44	48	48	drizzles	317				5		
16	34		48	48		608				1		
17	60	30	48	48	overcast	799						
18	49	36	48	47	drizzles	793				8		
19	54	42	48	47	drizzles	659				1		
20	50	35	47	47	drizzles	504						
21	68	44	47	47	drizzles	371						
22	70	42	48	47	fog-clear	324						
23	64	40	48	47	partly cloudy	323						
24	60	40	49	48	fog-cloudy	323						
25	52	45	49	49	rain	325						
26	58	36	49	48	cloudy-clear	327						
27	68	33	50	49	fog-clear	328						
28	76	40	51	50	clear	327						
29	50	44	52	50	cloudy-clear	327						
30	62	30	51	50	fog-clear	331						
31	54	34	51	51	cloudy	332						
TOTALS										76		
From USGS records.					Cumulative Totals		5,016	2,242	1,823	1,500	2,019	

Appendix Table 3 (Continued)

April	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		
1	54	33	51	51	cloudy-rain	332						
2	65	30	51	51	fog-clear	330						
3	66	30	52	51	fog-clear	330						
4	65	32	54	52	fog-clear	331						
5	66	33	54	52	clear	331						
6	66	31	54	53	clear	331						
7	62	33	54	53	clear-cloudy	331						
8	66	37	55	54	cloudy-clear	327						
9	64	34	55	54	cloudy-clear	328						
10	55	34	54	54	cloudy	328						
11	68	32	54	53	clear	328						
12	78	34	55	52	fog-clear	329						
13	75	34	57	53	clear	329						
14	79	33	58	53	clear	328						
15	71	33	54	53	partly cloudy	328						
16	73	38	56	54	clear-cloudy	330						
17	75	40	56	54	cloudy	330						
18	66	38	56	54	cloudy	321						
19	48	44	53	53	rain	316						
20	67	43	54	53	cloudy	330						
21	76	44	56	53	clear-cloudy	330						
22	87	44	58	55	clear	330						
23	81	45	59	55	clear	330						
24	70	52	55	54	overcast	327						
25	53	50	55	54	cloudy-rain	327						
26	60	42	53	53	sprinkles	327						
27	79	37	56	53	fog-clear	327						
28	88	37	56	54	fog-clear	327						
29	93	48	59	56	clear-hot	327						
30		51	59	58	clear	329						

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
	Maximum	Minimum	Maximum	Minimum			Grilse	Steelhead	Grilse
1	91	46	60	56	clear	330			
2	80	42	54	54	clear	331			
3	69	36	56	54	clear	330			
4	70	36	56	55	clear	326			
5	66	31	55	54	clear	325			
6	71	32	57	54	clear	326			
7	74	34	57	54	clear	327			
8	75	39	56	55	cloudy	331			
9	82	44	56	56	fog-clear	471			
10	80	44	60	57	clear	400			
11	80	40	61	58	clear	324			
12	84	42	59	58	clear	321			
13	79	44	58	58	clear-cloudy	321			
14	73	50	56	56	cloudy	314			
15	65	48	55	55	cloudy	317			
16	70	32	55	55	clear	320			
17	56	50	55	54	cloudy-rain	315			
18	66	48	55	55	cloudy-rain	382			
19	63	44	54	54	rain-cloudy	415			
20	71	43	54	53	fog-cloudy	412			
21	74	45	54	53	cloudy	409			
22	77	43	54	53	clear	414			
23	80	50	54	52	clear-cloudy	408			
24	82	52	54	53	cloudy	404			
25	74	52	53	52	cloudy	403			
26	82	55	53	53	cloudy-muggy	404			
27	89	53	53	53	fog-clear	412			
28	94	50	53	52	clear	440			
29	91	51	53	51	clear-muggy	458			
30	84	51	52	51	clear	459			
31	92	48	52	51	clear	459			

From USGS records.

Appendix Table 3 (Continued)

June	Temperature F			Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped			
	Air		Water			Chinook salmon	Coho salmon	Adults Grilse	Adults Grilse
	Maximum	Minimum	Maximum	Minimum		Adults Grilse	Adults Grilse	Steelhead	Steelhead
1	53	52	83	50	clear-muggy	455			
2	52	51	81	56	clear	451			
3	52	51	90	48	clear	452			
4	53	52	92	51	clear	452			
5	53	52	89	53	clear	449			
6	52	52	82	52	clear	453			
7	52	52	82	56	cloudy	453			
8	52	52	74	57	cloudy-windy	450			
9	52	51	78	45	clear-cloudy	449			
10	52	51	77	52	overcast	447			
11	52	51	79	42	partly cloudy	452			
12	52	51	66	42	partly cloudy	452			
13	51	51	63	41	cloudy	455			
14	51	50	80	40	clear	454			
15	52	50	93	39	clear	457			
16	52	50	82	52	clear-windy	457			
17	53	52	89	44	clear	455			
18	52	51	89	49	clear-windy	453			
19	53	51	93	54	clear-windy	451			
20	54	53	94	54	clear	450			
21	54	52	97	52	clear	453			
22	53	52	90	52	clear	459			
23	55	52	94	50	clear	291			
24	56	53	101	51	clear	511			
25	54	54	100	60	clear	458			
26	55	52	98	57	clear	459			
27	55	53	97	53	clear	454			
28	55	53	100	52	clear	452			
29	55	53	100	57	clear	451			
30	55	53	96	56	clear	451			

From USGS records.