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ANNUAL REPORT  
TRINITY RIVER SALMON AND STEELHEAD HATCHERY  
1977-78<sup>1/</sup>

by

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ABSTRACT

This report describes the operation of Trinity River Salmon and Steelhead Hatchery from July 1, 1977 through June 30, 1978. Tables present daily records of water temperatures and weather conditions, daily numbers of salmon and steelhead entering the hatchery, total numbers of salmonids reared and released, and a summary of annual salmonid runs to Trinity Hatchery from its opening through the current year.

There were 5,721 king salmon (Oncorhynchus tshawytscha) trapped, which produced 2,450,000 eggs. The 1,928 silver salmon (O. kisutch) produced 515,000 eggs. The 285 steelhead (Salmo gairdnerii) trapped produced 314,000 eggs.

We planted 390,400 fingerling and 286,100 yearling king salmon, 255,600 yearling silver salmon, and 152,876 yearling steelhead.

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## INTRODUCTION

This is the twentieth 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 May 15, 1963. Operation and maintenance costs are paid by the Bureau.

This report describes operation of the hatchery from July 1, 1977 through June 30, 1978. Copies of previous annual reports are available upon request from the Anadromous Fisheries Branch, Rancho Cordova, California 95670.

## PRODUCTION SUMMARY

King salmon entered the hatchery beginning September 1. Because of high mortality caused by water temperatures as high as 71 F (21.7 C) and since none of the females were sexually mature, all of the fish were returned to the river and the ladder closed until September 14. The run then continued until November 21 (Figure 1 and Appendix Table 1). Silver salmon were trapped from October 6 through December 12. Steelhead entered the hatchery from October 3, 1977 through March 30, 1978. A few small brown trout entered the trap during September and October, 1977 but were not spawned because they did not appear to be anadromous.

Production data are summarized in Table 1.

Table 1. Production Summary

Species	Number trapped	Number females spawned	Eggs taken or received	Number fingerlings planted	Number		
					yearlings or brood stock planted	Total planted	On hand June 30, 1978
King salmon	5,721	925	2,450,000	390,400	286,100	18,861	678,000
Silver salmon	1,928	206	515,000	0	225,600	11,125	253,000
Steelhead	285	118	1,607,675*	0	152,876	8,778	1,076,000
Brown trout	0	0	0	0	0	0	0
TOTALS	7,934	1,249	4,572,675	390,400	664,576	38,764	2,007,000

\* 171,000 Trinity; 143,000 Trinity River-Iron Gate Strain; 1,293,675 received from Iron Gate Hatchery.

#### HATCHERY OPERATION

All production fish were reared on a diet of Oregon Moist Pellet. A total of 318,500 lb (144,468 kg) of feed produced 85,475 lb (38,771 kg) of fish during fiscal year 1977-78. The feed conversion rate (1b of feed required to produce 1 lb of fish) was 3.7. This very poor conversion rate resulted from the disease-caused loss of approximately 500,000 king salmon and 200,000 steelhead when water temperatures became as high as 71 F (21.7 C) during the severe drought of 1976-77.

The hatchery had 11,951 visitors in 1977-78. Guided tours were provided for several of the larger groups of visitors, most of which were from schools in the area.

#### KING SALMON MAINTENANCE PROGRAM

##### History of the 1977 Run

King salmon first appeared in the upper river at the hatchery on May 21 and continued arriving in small numbers throughout the summer. The ladder was opened on August 28 and salmon entered the trap. Spawning operations began on September 1 but were suspended when no ripe fish were found and a heavy handling mortality was sustained due to water temperatures to 69 F. On September 2 approximately 600 adult king salmon were returned to the river where it was thought they might seek cooler water at the bottom of the stilling basin below Lewiston Dam.

The ladder was reopened on September 14 and the first two salmon were spawned on September 19.

##### Spring Run

Between September 14 and October 6, 1977 1,509 king salmon, thought to be mostly spring-run, were trapped. These included 598 males, 526 females, and 385 grilse.<sup>2/</sup> The 228 females spawned from September 19 through October 6, produced 568,000 eggs, an average of 2,491/female. Egg size averaged 81/ounce.

##### Fall Run

There were 4,212 king salmon trapped from October 7 to November 21: 1,243 males, 792 females, and 2,177 grilse. All were assumed to be fall-run. The 697 fall-run females spawned produced 1,882,000 eggs, an average of 2,700/female. Egg size averaged 94/ounce.

No marked king salmon returned to Trinity River Hatchery in 1977-78.

##### Planting 1976 Broodyear King Salmon

We planted 286,100 1976 broodyear (BY) king salmon yearlings at the hatchery this fiscal year (Table 2). These were survivors of an estimated 800,000 fish on hand prior to September 1, 1977. Approximately half a million king salmon yearlings were lost to disease and stress caused by water temperatures to 71 F.

<sup>2/</sup> King salmon males <22 inches (56 cm) FL are considered grilse.

Table 2. Yearling King Salmon Planted

Date	Race	Size	Release site	Total released	Number marked*	Mark
11/23/77	Fall run (Klamath R.)	8.4/lb	Hatchery	202,000	175,330	Ad-CWT (6-61-1)
11/23/77	Fall run (Klamath R.)	9.0/lb	Hatchery	26,100	None	
11/23/77	Spring run (Trinity R.)	7.0/lb	Hatchery	58,000	56,840	Ad-CWT (6-61-6)
	x Figures corrected as per errata info dated 8-19-82					
					286,100	232,170

\* Corrected for tag shedding and/or poor fin clips.

A total of 3,246,075 1976 BY king salmon was planted last fiscal year as fingerlings. Of the 6,373,510 king salmon (fall- and spring-run) eggs taken or received by transfer in 1976, 3,532,175 (55%) were eventually planted.

#### Planting 1977 Broodyear King Salmon

A total of 390,400 1977 BY king salmon fingerlings was planted in the Trinity River at the hatchery and at Tish Tang Campground in the upper end of Hoopa Valley (Table 3).

Table 3. Fingerling King Salmon Planted

Date	Race	Size	Release site	Total released	Number marked*	Mark
6/6/78	Fall run	63/lb	Hatchery	191,400	164,752	Ad-CW (6-61-2)
6/23/78	Fall run	60/lb	Tish Tang	199,000	180,301	Ad-CWT (6-61-3)

\* Corrected for tag shedding and/or poor fin clips.

Approximately 578,000 fall-run and 100,000 spring-run fingerlings are being held at the hatchery for later release as yearlings.

#### SILVER SALMON MAINTENANCE PROGRAM

##### History of the 1977 Run

Silver salmon entered the hatchery from October 6 to December 12, 1977. The 1,928 fish trapped included 381 males, 317 females, and 1,230 grilse. None were marked. The 206 females spawned from November 3 through December 12 produced 515,000 eggs, an average of 2,500/female. Egg size averaged 145/ounce.

#### Planting 1976 Broodyear Silver Salmon

All 1976 BY silver salmon were planted at the hatchery (Table 4).

Table 4. Silver Salmon Yearlings Planted

Date	Size	Total released	Number marked*	Mark
3/2/78	3.7/lb	26,600	26,600	LV-RV
3/2/78	12.0/lb	31,800	None	
3/2/78	11.0/lb	100,000	96,800	Ad-CWT (6-61-5)
3/2/78	12.0/lb	67,200	None	
<b>TOTAL</b>		<b>225,600</b>	<b>123,400</b>	

\* Corrected for tag shedding and/or poor fin clips.

#### STEELHEAD MAINTENANCE PROGRAM

##### History of the 1977-78 Steelhead Run

The adult steelhead run at Trinity River Hatchery consisted of 285 fish: 153 males and 132 females. From January 9 through March 23, 118 of the females were spawned, producing 314,000 eggs for an average of 2,661/female. Egg size averaged 224/ounce. We also received 1,293,675 steelhead eggs from Iron Gate Hatchery (Table 5).

Table 5. Eggs Received by Trinity River Hatchery, 1977-78

Date	Species	Strain	Number	Origin
2/22/78	Steelhead	Klamath R. winter-run	231,168	Iron Gate Hatchery
3/1/78	Steelhead	Klamath R. winter-run	198,800	Iron Gate Hatchery
3/22/78	Steelhead	Klamath R. winter-run	140,850	Iron Gate Hatchery
3/31/78	Steelhead	Klamath R. winter-run	417,165	Iron Gate Hatchery
4/4/78	Steelhead	Klamath R. winter-run	259,692	Iron Gate Hatchery
4/7/78	Steelhead	Klamath R. winter-run	46,000	Iron Gate Hatchery
<b>TOTAL</b>			<b>1,293,675</b>	

#### Marked Steelhead Returns

Of the 285 steelhead trapped at Trinity River Hatchery during the 1977-78 season 269 (94%) were marked (Table 6, Appendix Table 2).

Table 6. Marked Steelhead Recovered at Trinity River Hatchery, 1977-78

Mark	Number trapped	Mean fork length in inches (range)	Probable origin				
			Brood year	Date planted	Location	Number	Strain
Ad-LV	{ 1 21	30.0 20.5 (18.5-22.5)	1973 1975	5/ 6/74 4/23/76	TRH TR*	61,000 46,221	Eel River Iron Gate
Ad-LV-RP	7	18.7 (15.5-22)	1975	3/21/77	TRH	21,000	Trinity River
Ad-RV	59	19.7 (15.5-22)	1975	4-5/77	TR*	118,966	Iron Gate
Ad-RV-LP	72	17.4 (15-22)	1975	3/21/77	TRH	43,658	Iron Gate
Ad-LP	16	22.2 (19.5-24)	1975	4/ 1/76	TR*	13,750	Iron Gate
LV	29	22.9 (19-27)	1974	4/23/76	TR*	38,509	Trinity River
LV-RP	9	17.6 (16-25)	1976	4/77	TRH	175,230	Trinity River
RV	35	22.9 (18.5-27)	1975	4-5/77	TR*	115,607	Trinity River
RV-LP	2	16.0 (15.5-16.5)	1976	4/77	TRH	129,587	Iron Gate
LP	18	24.3 (21-27)	1974	4/ 1/77	TR*	29,630	Trinity River

\* Various locations (Bedell 1978)

Steelhead Planted

We planted 152,876 steelhead in FY 1977-78 (Table 7).

Table 7. Steelhead Planting Summary

Strain	Brood year	Date released	Average size	Mark	Release site	Number released
Iron Gate	1977	4/ 7/78	7.5/lb	Ad-LV-RV	Hatchery	133,376
Iron Gate	1977	4/17/78	12.4/lb	Ad-LV-RV	Hatchery	19,500
<b>TOTAL</b>						<b>152,876</b>

BROWN TROUT MAINTENANCE PROGRAM

History of the 1977 Brown Trout Run

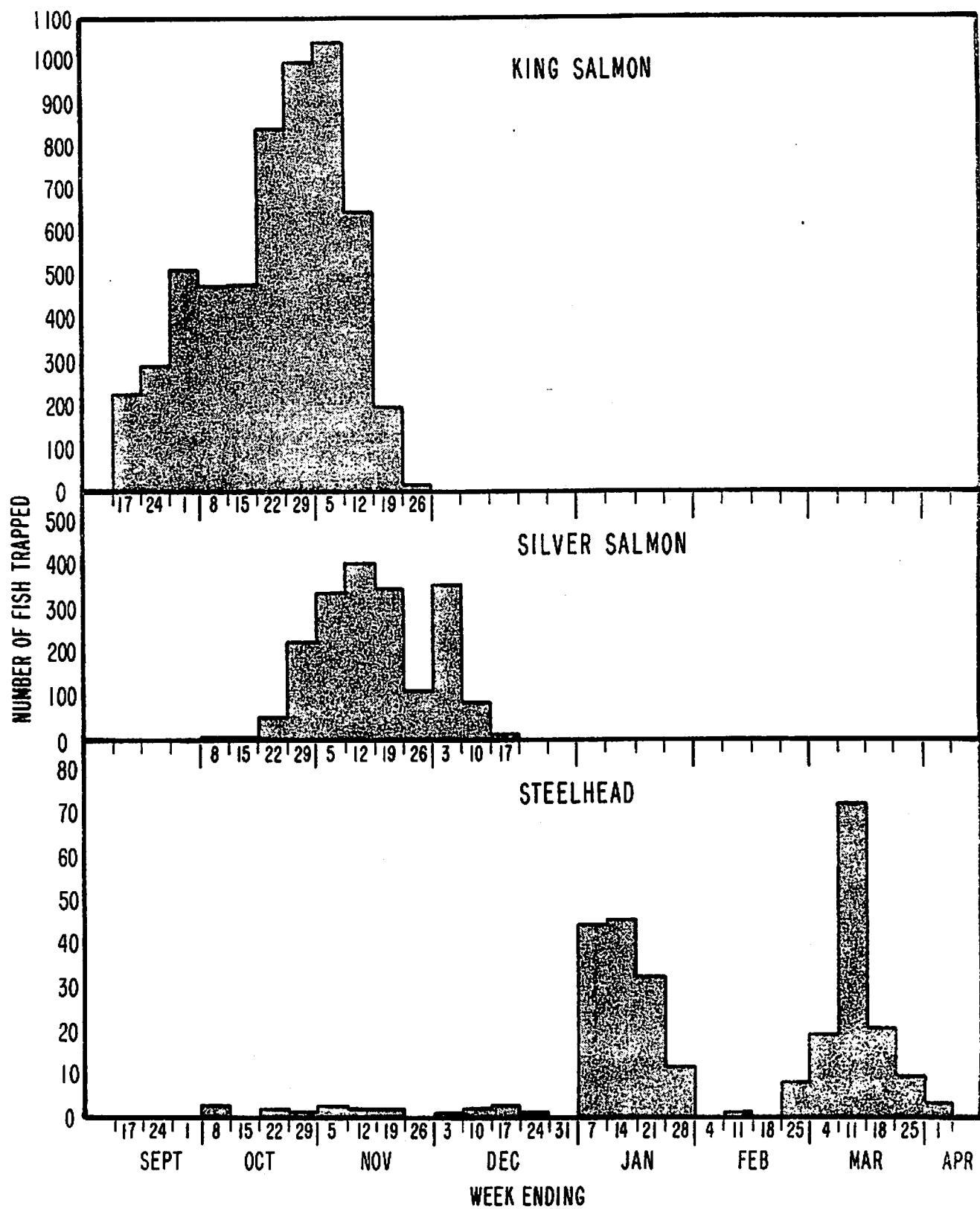
Approximately 50 brown trout entered the trap during September and October. These fish averaged about 12 inches FL and scales examined by fisheries biologist Ed Miller did not show any ocean growth. All of the brown trout were returned to the river unspawned.

Brown Trout Planting

No brown trout were planted during fiscal year 1977-78.

REFERENCE

Bedell, Gerald 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.



Appendix Table 1  
 Trinity River Salmon and Steelhead Hatchery Weather,  
 and Water Data, and Counts of Fish during Spawning  
 Operations, July 1, 1977 through June 30, 1978

July	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air		Water				King salmon	Silver salmon	Steelhead		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults		
1	91	59	56	54	showers	152					
2	90	54	58	54	clear	150					
3	86	46	56	53	clear	150					
4	82	48	56	53	clear	148					
5	80	46	56	53	clear	153					
6	93	44	56	53	clear	154					
7	98	48	57	54	clear	153					
8	94	52	57	53	clear	153					
9	92	50	57	53	clear	153					
10	100	48	57	54	clear	153					
11	102	52	58	54	clear	153					
12	96	53	59	55	clear	153					
13	98	52	57	54	clear	152					
14	101	53	58	55	clear	151					
15	102	53	59	55	clear	150					
16	105	56	60	56	clear	152					
17	101	56	58	56	clear	152					
18	96	57	59	55	partly cloudy	152					
19	91	57	61	56	partly cloudy	156					
20	94	55	61	56	clear	155					
21	96	54	60	56	clear	158					
22	98	53	60	56	clear	159					
23	100	55	61	56	clear	157					
24	90	56	58	56	partly cloudy	154					
25	91	54	59	56	partly cloudy	154					
26	99	49	60	56	clear	155					
27	100	49	60	55	clear	155					
28	94	50	59	55	clear	155					
29	100	50	59	56	clear	155					
30	108	52	61	57	clear	155					
31	109	58	62	57	clear	154					

\*From USGS records.

Appendix Table 1 (Continued)

August	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air		Water				King salmon	Silver salmon			
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults		
1	107	61	61	58	partly cloudy	153					
2	107	61	60	58	partly cloudy	155					
3	100	59	63	57	clear	160					
4	97	57	63	57	clear	156					
5	94	55	63	58	partly cloudy	153					
6	90	54	62	58	partly cloudy	152					
7	89	58	62	59	partly cloudy	151					
8	97	50	62	59	smoke haze	154					
9	100	53	62	58	smoke haze	155					
10	104	56	62	58	smoke haze	155					
11	107	57	63	59	partly cloudy	154					
12	100	61	64	60	partly cloudy	155					
13	96	62	64	60	clear	153					
14	97	55	63	60	clear	155					
15	101	50	63	60	clear	156					
16	105	49	62	60	smoke haze	154					
17	95	60	63	61	smoke haze	155					
18	96	58	63	60	partly cloudy	157					
19	102	54	65	61	clear	156					
20	100	61	66	62	partly cloudy	158					
21	100	60	65	63	clear	157					
22	100	60	65	63	clear	158					
23	99	53	66	63	clear	158					
24	79	63	65	64	cloudy-rain	159					
25	64	55	64	63	cloudy-rain	159					
26	79	46	64	62	fog-clear	156					
27	86	52	65	63	fog-clear	150					
28	92	60	67	65	clear	154					
29	94	51	69	66	clear	156					
30	93	51	69	66	clear	156					
31	93	48	70	67	clear	158					

\*From U records

Appendix Table 1 (Continued)

September	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*			Fish trapped		
	Air		Maximum	Minimum		King salmon		Silver salmon	Adults	Grilse	Steelhead
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse				
1	92	57	69	66	clear	165					
2	91	51	68	66	clear	197					
3	92	50	68	66	clear	196					
4	96	50	69	67	clear	199					
5	100	52	69	67	clear	191					
6	101	50	69	67	clear	185					
7	101	53	69	67	clear	183					
8	99	50	69	67	clear	185					
9	100	50	69	68	clear	186					
10	98	48	71	68	clear	185					
11	94	48	69	68	clear	187					
12	95	45	68	67	clear	188					
13	92	45	67	65	partly cloudy	187					
14	78	52	64	62	partly cloudy	185					
15	66	51	61	59	cloudy	180					
16	57	49	57	56	cloudy-rain	187					
17	58	49	58	57	cloudy-rain	191					
18	68	50	58	58	cloudy	189					
19	71	51	57	57	cloudy-rain	195					
20	75	50	58	57	partly cloudy	199					
21	76	44	58	57	fog-clear	190					
22	79	42	58	57	fog-clear	190					
23	79	41	58	57	partly cloudy	189					
24	79	44	57	57	clear	189					
25	79	42	59	57	fog-clear	188					
26	80	45	58	58	clear	188					
27	80	45	58	57	rain	190					
28	80	43	58	57	rain	193					
29	80	43	59	58	fog-clear	191					
30	80	43	58	58	fog-clear	189					
						809	225				

Appendix Table 1 (Continued)

October	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Water				King salmon		Silver salmon			
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse	Steelhead	
1	81	39	59	57	fog-clear	192						
2	83	39	60	57	fog-clear	197	148	75				
3	84	42	61	59	fog-clear	193					1	
4	84	40	61	58	fog-clear	192						
5	77	40	60	58	partly cloudy	199						
6	69	41	57	57	cloudy	193	167	85	1	2	2	
7	74	38	58	56	fog-clear	195						
8	82	39	58	56	fog-clear	195						
9	82	39	58	56	fog-clear	195						
10	85	38	58	56	fog-clear	194	170	135			1	
11	86	38	58	56	clear	194						
12	85	40	58	56	clear	195						
13	85	42	58	56	fog-clear	194	97	74			2	
14	86	40	58	56	partly cloudy	194						
15	84	39	58	56	clear	219						
16	82	38	57	56	clear	233						
17	89	36	57	55	clear	234	226	193			14	
18	87	37	57	55	clear	242					2	
19	81	39	56	55	partly cloudy	247						
20	72	36	55	54	partly cloudy	247	260	164	6	36		
21	76	34	55	53	clear	245						
22	77	32	55	53	clear	248						
23	55	43	54	54	rain	249						
24	67	48	55	54	cloudy-rain	247	267	241	43	50	1	
25	64	54	54	54	cloudy-rain	247						
26	67	44	54	53	fog-clear	245						
27	54	44	54	53	cloudy	246	244	244	53	74		
28	50	44	53	52	rain	246						
29	51	43	53	53	rain	250						
30	62	38	52	52	partly cloudy	246						
31	64	37	53	52	partly cloudy	249	274	360	50	131		
TOTALS							1,853	1,571	153	310	6	

\*From 5 records.

Appendix Table 1 (Continued)

November	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped					
	Air		Water				King salmon		Silver salmon			
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults	Grilse		
1	70	40	53	52	fog-clear	250						
2	68	46	53	52	cloudy-clear	252						
3	64	38	52	52	fog-clear	251	169	239	53	105		
4	44	32	51	51	fog-rain	251				3		
5	55	32	51	50	rain-cloudy	250						
6	58	35	51	50	fog-clear	250						
7	61	38	51	50	partly cloudy	250	151	222	66	131		
8	61	33	51	50	fog-clear	251				2		
9	62	32	51	50	fog-clear	252						
10	61	34	51	50	fog-clear	252	100	170	53	156		
11	51	38	50	50	rain	252						
12	57	42	50	50	cloudy	252						
13	63	40	50	49	partly cloudy	290						
14	59	36	50	49	partly cloudy	249	58	87	75	141		
15	69	42	51	50	fog-clear	224						
16	64	42	51	50	fog-clear	201						
17	62	38	51	50	fog-cloudy	195	14	35	35	95		
18	50	28	50	49	clear	204						
19	48	20	49	49	clear	214						
20	40	20	48	48	cloudy	212						
21	36	30	48	48	snow	214	5	13	25	81		
22	41	30	47	47	rain	217						
23	42	33	47	47	rain	216						
24	46	33	47	47	cloudy	212						
25	51	35	47	47	drizzle	208						
26	54	36	47	47	fog-cloudy	208						
27	56	40	47	47	cloudy	205						
28	58	42	48	48	partly cloudy	205			141	161		
29	56	38	48	47	fog-clear	206						
30	54	42	48	47	fog-clear	206						
TOTALS							497	766	448	870		
										7		

\*From USGS records.

Appendix Table 1 (Continued)

December	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air		Water				King salmon	Silver salmon	Steelhead		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults		
1	54	39	48	47	fog-clear	176		25	29		
2	56	40	48	47	fog-clear	161			1		
3	52	42	48	47	fog-clear	161					
4	60	44	49	48	partly cloudy	159					
5	57	42	49	48	partly cloudy	159		48	11		
6	54	39	49	48	rain-clear	161			1		
7	58	38	49	48	fog-clear	159					
8	50	33	48	47	fog-clear	161		19	6		
9	48	32	48	47	partly cloudy	163			1		
10	54	32	47	47	partly cloudy	161					
11	50	36	47	47	rain	161					
12	46	36	47	47	fog-cloudy	159		5	4		
13	46	42	47	47	rain	168					
14	49	44	47	47	rain	178					
15	45	38	47	47	rain	168			2		
16	38	32	47	46	rain-snow	168					
17	48	34	46	46	rain-cloudy	170					
18	48	32	46	46	fog-clear	166					
19	44	27	46	46	fog-clear	163			1		
20	50	25	46	45	cloudy	163					
21	46	38	45	45	muddy rain	163					
22	45	37	45	45	rain	166					
23	54	39	45	44	cloudy	166					
24	52	40	45	44	fog-clear	166					
25	50	32	44	44	fog-cloudy	163					
26	64	42	44	44	fog-rain	161					
27	50	38	45	44	cloudy-rain	163					
28	54	43	45	45	sprinkles	161					
29	54	43	45	45	cloudy	163					
30	55	35	45	45	partly cloudy	161					
31	52	34	46	45	fog-clear	161					
TOTALS							97	50	6		

\*From 5 records.

Appendix Table 1 (Continued)

January	Temperature F			Weather	(cfs)*	Trinity River			Fish trapped		
	Air		Water			at Lewiston		King salmon		Silver salmon	Adults Grilse
	Maximum	Minimum	Maximum			Adults	Grilse	Adults	Grilse	Adults	
1	43	30	45	rain	163						
2	44	39	45	rain	163						
3	52	40	45	partly cloudy	163						
4	50	44	45	rain	168						
5	48	38	45	rain	170						
6	52	38	45	rain-cloudy	167						
7	53	37	45	cloudy	165						
8	50	43	45	rain	165						
9	53	44	45	rain	167						
10	54	42	46	partly cloudy	165						
11	47	40	46	rain	163						
12	51	43	46	rain	163						
13	53	45	46	rain	163						
14	53	44	46	rain	169						
15	45	39	45	rain	169						
16	49	42	45	rain	174						
17	56	40	45	partly cloudy	168						
18	48	40	45	rain	170						
19	52	38	46	partly cloudy	170						
20	54	40	46	partly cloudy	176						
21	49	40	46	rain	177						
22	49	31	46	fog-clear	175						
23	51	31	46	fog-clear	169						
24	55	26	46	fog-clear	160						
25	55	30	45	fog-clear	159						
26	60	34	46	fog-clear	160						
27	58	34	46	fog-clear	161						
28	60	33	46	fog-clear	163						
29	59	34	46	fog-clear	163						
30	58	35	46	fog-clear	162						
31	62	36	45	fog-clear	163						
TOTALS					133						

\*From USGS records.

Appendix Table 1 (Continued)

February	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped		
	Air Maximum	Air Minimum	Water Maximum	Water Minimum			King salmon Adults	King salmon Grilse	Silver salmon Adults
1	43	34	45	45	rain-snow	164			
2	44	32	45	44	rain	164			
3	58	40	46	45	fog-clear	163			
4	59	36	46	45	fog-cloudy	163			
5	53	39	45	45	rain	167			
6	50	38	45	45	rain	166			1
7	48	43	45	45	rain	169			
8	48	33	45	45	rain	171			
9	52	32	45	45	fog-clear	167			
10	48	30	45	44	cloudy	166			
11	39	34	45	44	fog-clear	166			
12	39	34	45	44	rain	165			1
13	52	34	45	44	rain	166			
14	52	40	45	45	cloudy	165			
15	54	30	45	44	partly cloudy	163			
16	43	32	45	44	snow-rain	163			
17	45	36	45	44	rain	164			
18	60	39	45	44	fog-clear	164			
19	70	39	47	45	fog-clear	163			
20	70	38	48	45	fog-clear	162			
21	75	39	48	46	fog-clear	163			
22	72	40	50	46	fog-clear	163			
23	73	40	50	48	fog-clear	162			8
24	62	41	48	47	fog-cloudy	161			
25	60	42	49	46	partly cloudy	162			
26	60	37	48	46	fog-clear	160			
27	62	34	49	48	fog-clear	161			16
28	68	30	49	48	fog-clear	163			
TOTALS									25

\*From USGS records.

Appendix Table 1 (Continued)

March	Temperature F				Weather	Flow of Trinity River at Lewiston (cfs)*	Fish trapped				
	Air		Water				King salmon	Silver salmon			
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults		
1	66	28	50	48	fog-cloudy	166					
2	52	45	49	48	rain	168			3		
3	54	44	49	49	rain	168					
4	52	42	49	48	rain	165					
5	60	42	49	48	fog	164					
6	61	40	50	49	cloudy-rain	162			49		
7	55	44	50	50	cloudy-rain	162					
8	49	46	50	50	rain	175					
9	66	40	51	49	cloudy-rain	182			23		
10	61	39	50	49	cloudy	171					
11	60	38	49	49	partly cloudy	172					
12	59	31	50	48	fog-clear	172					
13	60	35	51	50	partly cloudy	167			17		
14	68	34	52	50	fog-clear	163					
15	74	32	52	49	fog-clear	162					
16	78	33	53	50	fog-clear	160			3		
17	77	34	54	51	clear	160					
18	78	34	54	52	clear	163					
19	74	38	56	53	clear	165					
20	78	38	55	52	clear-cloudy	164			8		
21	58	40	54	53	rain	165					
22	60	46	54	53	cloudy-rain	163					
23	60	46	53	52	rain	165			1		
24	68	40	55	52	fog-clear	165					
25	78	39	56	53	fog-clear	165					
26	68	42	58	54	hazy	163					
27	82	38	56	54	clear	164			3		
28	80	40	58	55	clear	164					
29	71	50	58	56	cloudy	163					
30	75	50	59	56	partly cloudy	163			1		
31	72	52	59	58	rain	166					
<b>TOTALS</b>									108		

\*From USGS records.

Appendix Table 1 (Continued)

April	Temperature F				Weather	Trinity River at Lewiston (cfs)*	Flow of				
	Air		Water				King salmon		Fish trapped		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Adults Grilse Steelhead		
1	56	43	57	54	cloudy-rain	169					
2	60	33	54	53	clear-rain	169					
3	51	37	53	53	cloudy-rain	169					
4	56	34	53	52	partly cloudy	168					
5	44	38	53	53	rain	169					
6	50	36	52	52	rain	167					
7	60	36	53	52	partly cloudy	166					
8	72	30	54	52	fog-clear	166					
9	83	34	56	53	clear	165					
10	87	40	57	55	clear	166					
11	82	42	57	54	clear	166					
12	80	34	58	57	clear	166					
13	71	38	59	56	clear	166					
14	56	36	55	53	rain	167					
15	44	40	54	54	rain-cloudy	170					
16	52	32	53	52	cloudy-rain	171					
17	53	34	53	52	cloudy	168					
18	62	39	54	53	partly cloudy	169					
19	54	42	53	53	rain	168					
20	56	36	53	52	showers	170					
21	60	31	53	52	clear	170					
22	63	30	54	52	clear-cloudy	171					
23	69	35	55	53	cloudy-clear	171					
24	63	45	55	54	showers	170					
25	63	46	56	54	showers	172					
26	68	46	55	54	partly cloudy	172					
27	76	43	57	54	clear	172					
28	72	43	57	55	clear	171					
29	74	39	58	55	clear	173					
30	62	45	57	54	cloudy	174					
<b>TOTALS</b>											

\*From USGS records.

Appendix Table 1 (Continued)

May	Temperature F				Weather	Trinity River at Lewiston (cfs)*	Fish trapped				
	Air		Water				King salmon		Silver salmon		
	Maximum	Minimum	Maximum	Minimum			Adults	Grilse	Steelhead		
1	78	36	57	55	fog-clear	273					
2	84	40	61	57	clear	325					
3	80	44	61	59	clear	324					
4	74	38	62	59	clear	319					
5	67	33	62	58	clear	320					
6	74	34	63	59	clear	323					
7	83	36	62	60	clear	321					
8	87	40	66	60	partly cloudy	313					
9	80	46	63	61	partly cloudy	311					
10	78	40	60	58	partly cloudy	319					
11	68	50	59	57	clear	324					
12	82	40	60	57	clear	322					
13	84	44	58	57	partly cloudy	324					
14	69	42	58	57	partly cloudy	324					
15	57	41	56	54	showers	325					
16	73	36	56	54	fog-clear	323					
17	82	38	58	56	clear	331					
18	83	40	63	57	clear	331					
19	86	44	57	55	partly cloudy	333					
20	86	45	59	55	clear	329					
21	84	46	59	56	clear	327					
22	74	40	59	54	clear	329					
23	64	36	60	55	clear	333					
24	62	38	56	55	partly cloudy	330					
25	63	35	57	55	partly cloudy	331					
26	74	39	56	55	partly cloudy	329					
27	85	55	58	42	clear	329					
28	90	44	59	58	clear	333					
29	92	50	61	58	clear	332					
30	51	40	62	57	clear	334					
31	56	42	66	59	clear	333					
					TOTALS						

\*From USGS records.

Appendix Table 1 (Continued)

Date	Temperature F			Weather	(cfs)*	Flow of Trinity River at Lewiston			Fish trapped		
	Air		Water			King salmon		Silver salmon	Adults		Grilse Steelhead
	Maximum	Minimum	Maximum	Minimum							
1	90	42	60	59	clear	322					
2	89	44	60	59	clear	318					
3	94	43	60	57	clear	317					
4	96	46	60	57	clear	317					
5	100	50	60	56	clear	317					
6	100	50	59	58	clear	318					
7	98	48	59	57	clear	319					
8	98	50	58	56	clear	318					
9	80	52	55	54	clear	319					
10	72	47	58	56	partly cloudy	319					
11	86	40	57	56	clear	319					
12	82	50	56	56	partly cloudy	316					
13	80	47	56	56	partly cloudy	319					
14	78	44	56	54	clear	318					
15	80	40	58	56	clear	320					
16	84	38	58	56	clear	323					
17	88	47	56	55	clear	324					
18	88	50	56	53	partly cloudy	324					
19	89	43	56	56	clear	323					
20	82	50	58	58	clear	323					
21	90	44	58	58	clear	324					
22	85	48	58	55	clear	324					
23	72	44	58	58	partly cloudy	325					
24	74	48	58	55	clear	321					
25	82	40	58	57	clear	320					
26	85	53	58	56	partly cloudy	321					
27	87	47	56	55	clear	318					
28	78	52	59	58	partly cloudy	286					
29	82	58	58	58	partly cloudy	285					
30	31	58	57	57	fog-clear	285					

U.S.G.S. records.

Appendix Table 2. Fork Lengths of Marked Steelhead Recovered at  
Trinity River Hatchery, 1977-78

FL (inches)	Mark				
	Ad-LV	Ad-RV	Ad-RV-LP	Ad-LP	LV
	RV	LP			
15			3		
15.5		1			
16			9		
16.5			9		
17			15		
17.5		1	6		
18		9	17		
18.5	2	4	4		1
19		11	5	2	1
19.5	2	9	1		
20	5	13	2	1	2
20.5	4	5		1	1
21	4	3	1	1	
21.5	2	2		2	
22	1	1	1	3	3
22.5	1			2	5
23				3	2
23.5				3	1
24				1	2
24.5					2
25				3	4
25.5					2
26				1	
26.5				1	1
27				1	1
					<u>RV-LP</u>
30	1				15.5, 16.5

Appendix Table 3. 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