

REF 90301

ANNUAL REPORT
MERCED RIVER FISH FACILITY
1984-85^{1/}

by

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ABSTRACT

This report summarizes the operation of the Merced River Fish Facility from July 1, 1984, through June 30, 1985. The facility was constructed to rehabilitate the fall run chinook salmon (Oncorhynchus tshawytscha) in the Merced River.

A total of 275,380 chinook salmon yearlings (1983 brood year) was produced and released into the San Joaquin River system.

In the fall of 1984, 1,738 (880 males, 858 females) entered the facility. Of the females, 331 were artificially spawned. They yielded 1,216,368 eggs in eight spawnings. Surplus adult salmon (439 males, 524 females) were released to spawn in the channel this year, depositing an estimated 1,925,700 eggs.

An additional egg take station was constructed in the Merced River on the Gallo Ranch approximately 10 miles downstream of the facility. A total of 371 (242 males, 129 females) was trapped. Of the females, 71 were artificially spawned. They yielded 319,047 eggs in five spawnings.

^{1/} Inland Fisheries Administrative Report No. 87-9.
Submitted October, 1985.

INTRODUCTION

The Merced River Fish Facility (MRFF) is located immediately downstream from Crocker-Huffman Dam on the Merced River (a tributary to the San Joaquin River) about 15 miles northeast of Merced. It is the terminal point for salmon spawning on the Merced River.

The facility was built by the Merced Irrigation District (MID) with Davis-Grunsky Act funds. Operation began in the fall of 1970.

The facility is comprised of a 4,372-ft long spawning channel (the Reuben E. Schmidt Spawning Channel), three 275 x 30-ft rearing ponds and one effluent settling basin. A permanent hatchery building houses 12 double stacks of Heath incubator trays, capable of incubating and hatching approximately 1,500,000 chinook salmon eggs, and six nursery tanks with a capacity of approximately 50,000 swim-up size chinook salmon each. The adult salmon trapping facility is located in the fish ladder of the spawning channel. The trap consists of a fyke trap entrance, two basket hoists, anaesthetic tank, sorting table and holding pen. The installation is operated by the California Department of Fish and Game with operating assistance and partial funding of maintenance costs provided by MID.

PRODUCTION SUMMARY

The fish trap was installed on October 2, 1985 and chinook salmon began entering the trap on October 12. Two peaks occurred during the season (November 4 and 8-9). Trapping was terminated for the season on November 30 with a total of 1,738 fish collected at the MRFF and 371 fish at the Gallo Ranch Trap (Table 1). Numbers of chinook salmon collected since 1970 are shown on Appendix Table 2.

The Merced facility produced 275,380 yearling chinook salmon (1983 BY) which were planted into the Merced and San Joaquin rivers and Carquinez Strait in the fall of 1984 (Table 1). Coded wire tags (CWT) were applied to 196,830 of the released yearlings (Table 2).

Table 1. Production Summary, Merced River Fish Facility, 1984-85

Species	Number trapped	Number females spawned	Eggs taken	Number fingerlings planted	Number yearling planted	Total pounds planted	On hand June 30 1985
Chinook 1983 BY MRFF					275,380	40,800	
Chinook 1984 BY MRFF	1,738	331	1,216,368	770,679		8,388	420,000
Chinook 1984 BY Gallo Ranch Trap	371	71	319,047				
Totals	2,109	402	1,535,415	770,679	275,380	49,188	420,000

Table 2. Yearling Merced River Strain Chinook Salmon Planted from Merced River Fish Facility, 1984 ^{1/}

Released	CWT Code	Tagged	Untagged	Size/lb	Released	Location
10-17-84	06-46-33	25,200	4,950	6.7	30,150	Benicia
10-17-84	06-46-34					San Joaquin River
10-18-84	06-46-35	59,735		7.6	59,735	Above Old River
10-18-84	06-46-36					San Joaquin River
10-19-84	06-46-37	60,640		8.0	60,640	Below Old River
10-19-84	06-46-38	51,255		6.7	51,255	Merced River Gallo Ranch
10-17-84			73,600	6.0	73,600	Merced River MRFF
Totals		196,830	78,550		275,380	

^{1/} Data preliminary, subject to revision by Inland Fisheries Division, Sacramento.

HATCHERY OPERATION

All fish were reared on a diet of Oregon Moist Pellets and Abernathy dry pellets (Silver Cup). A total of 53,100 pounds of food produced 40,800 pounds of fish during fiscal year 1984-85, yielding a conversion rate (pounds of feed required to produce 1 lb of fish) of 1.30.

The facility had 786 visitors in 1984-85. Tours were provided for organized groups and schools.

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1984 Run

The first adult chinook salmon entered the MRFF trap on October 12, 1984. Of the 1,738 salmon trapped, 858 were females and 880 were males, including 167 grilse. Anadromous Fisheries Branch designated 23 in. total length or less for grilse identification during the 1984 season for the Merced and Tuolumne rivers.

A trap was constructed on the Gallo Ranch approximately 10 miles downstream from MRFF. The main purpose of the trap was to collect additional eggs for outmigrant studies. Of the 371 adult salmon trapped, 129 were females and 242 were males, including 12 grilse. Green females and surplus males were released above the trap.

A total of 1,216,368 eggs from 331 females was taken during eight spawnings at MRFF. The average fecundity was 3,675 eggs/female. Spawning was terminated November 13, 1984. A total of 319,047 eggs from 71 females was taken during five spawnings at the Gallo trap. The average fecundity was 4,494 eggs/female. Spawning was terminated November 7, 1984. A total of 1,535,415 eggs was produced with an average fertility of 84.8%. Surplus adult salmon, 439 males and 524 females, were released into the spawning channel this year. The majority of these fish came into the trap after the termination of spawning at MRFF. Based on the average fecundity at MRFF, 1,925,700 eggs were spawned in the channel.

Approximately 11,000 eyed eggs were supplied to the USFWS at Yankton Field Research Lab, South Dakota for Selenium studies. From March 7, 1985 through November 1, 1985, 500 chinook salmon will have been supplied for the smoltification study at the University of California at Berkeley. A total of 300,000 pre-smolt chinook salmon were supplied for a study of smolt survival in relation to migration routes through the South Delta. Approximately 17,000 chinook pre-smolts were supplied to Bay-Delta personnel for survival studies through the pumping stations at Clifton Court Forebay and the Federal Fish Facility off Old River. Approximately 500 chinook salmon have been supplied to University of California at Davis for PKD studies.

Marked Chinook Salmon Returns

Two-hundred ninety-eight chinook salmon marked with an adipose clip, indicating the fish had been tagged with a coded wire tag (CWT), were trapped at the facility (288) and the Gallo Trap (10) during the 1984 season. The tags were collected by hatchery personnel and Anadromous Fisheries Branch personnel and are currently being analyzed with the results to be published in a separate report.

Planting 1983 Brood Year Chinook Salmon

A total of 275,380 1983 BY chinook salmon yearlings was produced and released into the San Joaquin River system (Table 2).

Planting 1984 Brood Year Chinook Salmon

A total of 770,679 1984 BY fingerlings was planted this year into the San Joaquin River system and Carquinez Straits. Approximately 420,000 chinook salmon fingerlings are being held at the facility for release as yearlings in the fall of 1985 (Table 1).

APPENDIX TABLE 1. Merced River Fish Facility Air, Water Weather, Flow and Fish Trapping Data From July 1, 1984 through June 30, 1985.

<u>July</u>	<u>Air(F)</u>		<u>Water(F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	104	57	58	53	Clear	289				
2	106	62	60	53	Clear	203				
3	102	65	60	54	Clear	264				
4	104	64	60	53	Clear	244				
5	106	64	60	53	Clear	268				
6	107	64	58	54	Clear	276				
7	106	62	60	54	Haze	276				
8	102	57	60	54	Haze	248				
9	98	58	60	53	Clear	244				
10	104	55	59	54	Clear	248				
11	105	56	60	54	Clear	236				
12	105	54	59	-	Haze	236				
13	108	59	60	54	Clear	220				
14	-	66	59	54	Cloudy	248				
15	104	-	59	53	Cloudy	260				
16	105	64	58	53	Cloudy	244				
17	104	69	59	53	Cloudy	236				
18	104	65	60	54	Cloudy	244				
19	101	63	60	54	Clear	232				
20	99	61	59	54	Clear	252				
21	95	60	59	53	Cloudy	235				
22	86	56	59	53	P. Cloudy	240				
23	90	60	59	54	Sprinkles	261				
24	92	62	59	54	Clear	270				
25	101	57	-	53	Clear	275				
26	96	55	60	54	Clear	218				
27	100	55	60	55	Clear	203				
28	97	57	59	54	Clear	218				
29	98	54	59	54	Clear	208				
30	100	59	59	54	Clear	185				
31	101	59	59	54	Clear	189				

APPENDIX TABLE 1 (continued)

<u>Aug</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo</u>		<u>MRFF</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Fish Trapped Adults</u>	<u>Grilse</u>	<u>Fish Trapped Adults</u>	<u>Grilse</u>
1	97	60	60	55	Clear	160				
2	94	57	59	54	Clear	180				
3	92	54	59	54	Clear	180				
4	98	54	59	54	Clear	189				
5	94	57	58	55	Clear	176				
6	97	56	59	54	Clear	180				
7	103	55	60	54	Clear	210				
8	105	58	60	54	Clear	198				
9	106	59	60	54	P. Cloudy	208				
10	105	64	61	55	P. Cloudy	146				
11	98	62	60	55	P. Cloudy	142				
12	95	62	60	55	P. Cloudy	189				
13	91	64	59	55	P. Cloudy	164				
14	100	57	59	55	Clear	160				
15	93	56	59	55	P. Cloudy	160				
16	96	60	59	55	Clear	164				
17	100	60	60	55	Clear	176				
18	102	63	60	55	Clear	180				
19	98	56	60	55	Clear	203				
20	98	54	60	55	Clear	172				
21	96	54	60	55	Clear	261				
22	99	58	60	55	Clear	202				
23	95	58	60	55	Clear	180				
24	96	53	60	55	Clear	185				
25	86	53	60	55	Cloudy	176				
26	96	56	60	55	Clear	172				
27	98	60	60	55	Clear	185				
28	102	62	60	55	Clear	168				
29	102	64	60	55	Clear	153				
30	87	60	60	55	Clear	153				
31	87	56	60	55	Clear	83				

APPENDIX TABLE 1 (continued)

<u>Sept</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo</u>		<u>MRFF</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Fish Trapped Adults</u>	<u>Grilse</u>	<u>Fish Trapped Adults</u>	<u>Grilse</u>
1	96	54	60	56	Clear	156				
2	-	58	60	56	Clear	160				
3	102	56	60	56	Clear	198				
4	104	58	60	56	Clear	164				
5	100	62	60	56	Clear	152				
6	96	60	60	56	Clear	142				
7	100	56	60	56	Clear	156				
8	101	56	60	56	Clear	152				
9	105	59	60	56	Clear	118				
10	-	64	62	56	Clear	168				
11	102	-	62	56	Clear	146				
12	94	57	61	56	Clear	136				
13	-	59	-	56	Clear	142				
14	100	-	60	56	Clear	149				
15	95	55	60	56	Clear	160				
16	99	55	61	56	Clear	149				
17	104	62	61	56	Clear	139				
18	104	64	61	56	Overcast	160				
19	93	65	61	58	Rain	126				
20	86	62	60	56	Clear	136				
21	85	57	60	56	Clear	125				
22	82	51	61	56	Clear	146				
23	82	-	61	56	Clear	160				
24	82	44	61	56	Clear	164				
25	86	46	61	56	Clear	176				
26	-	48	-	56	Clear	153				
27	92	-	-	-	Clear	153				
28	94	51	60	56	Clear	229				
29	89	52	60	56	Clear	229				
30	81	55	60	56	P. Cloudy	224				

APPENDIX TABLE 1 (continued)

Oct	Air (F)		Water (F)		Weather	Flow cfs	Gallo		MRFF	
	Max	Min	Max	Min			Fish Trapped Adults	Grilse	Fish Trapped Adults	Grilse
1	76	42	59	55	Haze	194				
2	80	52	59	55	P. Cloudy	198				
3	81	42	59	55	Clear	190				
4	78	53	59	56	Haze	229				
5	80	40	59	55	Clear	223				
6	85	52	59	56	Clear	223				
7	89	53	59	56	Clear	203				
8	82	54	-	56	Clear	176				
9	82	55	59	56	Clear	224				
10	81	52	59	56	P. Cloudy	180				
11	78	50	59	56	Rain	1043				
12	76	48	-	56	Clear	229			1	2
13	-	52	-	-	-	240				
14	77	-	58	55	P. Cloudy	289				
15	65	42	58	55	P. Cloudy	229	6		1	1
16	58	43	58	55	Rain	203				
17	63	42	58	55	P. Cloudy	176			1	1
18	65	37	58	55	Cloudy	176			2	
19	67	39	58	54	Cloudy	185	6		1	
20	66	50	58	56	Clear	194	8			
21	66	42	58	53	Overcast	189	4		3	
22	71	42	58	55	Clear	168	3		3	6
23	75	41	58	55	Clear	180			6	2
24	76	43	59	55	Clear	176			4	1
25	76	46	59	55	Clear	168				2
26	69	43	59	55	Sprinkles	176	2		6	3
27	65	42	59	55	P. Cloudy	176	1		7	3
28	71	37	58	55	P. Cloudy	142	8		1	2
29	72	46	58	56	Rain	168	23		11	
30	70	52	58	55	Clear	152	48	2	34	15
31	70	45	58	55	Clear	132	<u>26</u>	<u>1</u>	<u>32</u>	<u>6</u>
							135	3	113	44

APPENDIX TABLE 1 (continued)

<u>Nov</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	74	42	58	55	Clear	142	50	3	41	6
2	72	48	58	55	Rain	153	19		51	10
3	68	51	58	-	Clear	153	22	2	42	6
4	69	42	58	-	Clear	136	35	1	124	11
5	68	48	-	56	Cloudy	172	35	1	38	2
6	70	48	-	57	Rain	168	45	2	64	10
7	70	46	58	-	Rain	142	18		37	3
8	62	48	58	58	Cloudy	203			185	5
9	66	38	57	56	Rain	203			108	2
10	60	41	57	57	Clear	218			71	1
11	69	48	57	56	Clear	198			58	2
12	68	49	-	57	Cloudy	198			21	
13	64	50	57	56	Rain	208			47	3
14	59	40	56	56	Overcast	198			17	5
15	59	38	55	54	Sprinkles	213			22	1
16	61	41	55	54	Cloudy	240			29	3
17	59	48	55	54	Fog	240			44	11
18	62	45	55	54	P. Cloudy	203			36	2
19	57	46	56	55	Fog	474			47	9
20	56	45	55	54	Fog	1129			48	5
21	52	44	55	55	Fog	1191			74	6
22	54	39	55	54	Fog	1119			56	6
23	56	38	54	54	Fog	1234			55	5
24	55	48	54	54	Cloudy	1150			24	1
25	58	34	54	52	Cloudy	1212			56	4
26	56	32	54	53	Rain	1150			19	
27	60	39	54	53	Rain	1324			16	
28	62	40	54	53	Rain	1150			28	4
29	58	36	52	52	P. Cloudy	1201				
30	60	38	52	52	P. Cloudy	1201				
							<u>224</u>	<u>9</u>	<u>1458</u>	<u>123</u>

APPENDIX 1 (continued)

<u>Dec</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo</u>		<u>MRF</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Fish Trapped Adults</u>	<u>Grilse</u>	<u>Fish Trapped Adults</u>	<u>Grilse</u>
1	58	37	-	-	Clear	1170				
2	60	40	54	53	Clear	1150				
3	58	46	54	54	P. Cloudy	1191				
4	55	46	54	53	Fog	1160				
5	60	47	53	53	Overcast	1139				
6	60	44	54	53	P. Cloudy	1160				
7	61	38	54	53	P. Cloudy	1212				
8	66	38	54	53	Overcast	1201				
9	65	42	54	53	Rain	1245				
10	63	44	54	54	Overcast	1180				
11	62	45	54	54	P. Cloudy	1212				
12	56	43	54	53	Overcast	1234				
13	54	34	54	53	Clear	1223				
14	54	32	53	52	Clear	1191				
15	55	31	51	51	Cloudy	1244				
16	50	37	51	50	P. Cloudy	1170				
17	52	30	52	51	P. Cloudy	920				
18	49	34	-	50	Cloudy	857				
19	51	35	51	50	Fog	857				
20	54	38	51	50	Cloudy	606				
21	52	37	51	50	Cloudy	1109				
22	54	36	52	52	Fog	1180				
23	44	32	51	51	Fog	1150				
24	43	33	51	50	Fog	1266				
25	44	34	50	49	Fog	1160				
26	46	33	50	49	Fog	1201				
27	50	37	50	49	Fog	1160				
28	52	36	50	49	Fog	1372				
29	52	39	50	49	Fog	1384				
30	54	35	50	49	Fog	1408				
31	48	40	51	49	Fog	1384				

APPENDIX TABLE 1 (continued)

<u>Jan</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	50	35	50	49	Fog	1396				
2	57	31	50	49	Fog	1384				
3	58	30	50	49	Fog	1360				
4	56	30	50	48	Fog	482				
5	48	31	-	49	Fog	497				
6	56	42	50	49	Fog	467				
7	53	44	50	49	Rain	482				
8	44	39	50	50	P. Cloudy	472				
9	54	40	51	50	P. Cloudy	457				
10	56	41	50	49	Fog	472				
11	49	38	50	50	Fog	486				
12	51	44	49	49	Overcast	492				
13	57	31	49	49	P. Cloudy	477				
14	43	37	50	49	Fog	477				
15	42	37	49	49	Fog	486				
16	45	36	49	49	Fog	388				
17	47	30	49	48	Fog	388				
18	48	31	49	47	Fog	388				
19	43	32	49	49	Fog	388				
20	43	38	49	49	Fog	388				
21	42	36	49	49	Fog	381				
22	47	37	-	48	Fog	388				
23	44	40	-	47	Fog	394				
24	50	40	48	48	Fog	388				
25	51	39	48	48	Fog	362				
26	50	43	48	47	Fog	375				
27	56	39	48	47	Fog	375				
28	48	39	48	47	Rain	394				
29	54	30	48	47	Sunny	388				
30	49	36	48	47	Clear	388				
31	51	29	48	47	Clear	375				

APPENDIX TABLE 1 (continued)

<u>Feb</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	52	29	48	46	Clear	156				
2	52	30	48	46	Clear	176				
3	50	32	48	47	P. Cloudy	172				
4	54	29	48	46	Clear	172				
5	53	29	48	46	P. Cloudy	168				
6	64	29	48	46	P. Cloudy	172				
7	53	32	47	46	Sprinkles	279				
8	54	33	48	47	Rain	208				
9	56	33	48	47	Clear	185				
10	56	28	48	47	Clear	168				
11	62	30	48	47	Clear	168				
12	64	34	50	49	Clear	164				
13	65	37	51	49	Clear	164				
14	70	38	51	49	Clear	172				
15	71	38	51	50	Clear	168				
16	70	40	52	51	Clear	168				
17	70	45	52	51	Clear	168				
18	70	41	52	51	Clear	164				
19	70	43	52	51	Clear	168				
20	62	39	51	51	Clear	172				
21	60	30	51	50	Clear	164				
22	72	31	51	50	Clear	164				
23	70	38	52	51	Clear	164				
24	76	40	52	51	Clear	153				
25	69	40	53	52	Clear	164				
26	60	40	53	51	Clear	156				
27	72	42	53	51	Clear	172				
28	74	39	54	51	Clear	160				

APPENDIX TABLE 1 (continued)

<u>Mar</u>	<u>Air(F)</u>		<u>Water(F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo</u>		<u>MRFF</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Fish Trapped Adults</u>	<u>Grilse</u>	<u>Fish Trapped Adults</u>	<u>Grilse</u>
1	73	39	54	52	Overcast	146				
2	46	40	54	53	Rain	129				
3	56	31	51	49	Clear	100				
4	55	38	51	50	P. Cloudy	110				
5	52	39	50	50	Overcast	146				
6	56	42	50	50	Sprinkles	153				
7	59	43	50	49	Rain	142				
8	63	34	51	49	Overcast	142				
9	65	35	51	49	Overcast	180				
10	65	50	51	49	Cloudy	164				
11	66	44	52	50	Cloudy	153				
12	64	38	52	50	Rain	129				
13	67	39	52	49	Rain	160				
14	70	38	52	50	Clear	149				
15	67	39	51	50	Clear	156				
16	66	43	52	49	Clear	132				
17	69	40	51	49	Overcast	139				
18	54	46	50	50	Rain	139				
19	50	47	50	50	P. Cloudy	160				
20	58	43	52	50	Clear	149				
21	62	43	52	50	Clear	139				
22	66	34	52	50	Clear	156				
23	71	38	52	51	Clear	146				
24	67	40	53	51	P. Cloudy	126				
25	59	37	51	51	Clear	129				
26	52	33	49	49	Rain	142				
27	59	42	49	49	Rain	153				
28	-	38	51	49	Rain	168				
29	65	-	-	-	Clear	168				
30	67	37	51	50	Clear	149				
31	73	42	54	50	Clear	164				

APPENDIX TABLE 1 (contineud)

<u>April</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	81	45	54	52	Clear	139				
2	80	45	56	52	Clear	149				
3	81	46	56	52	Clear	153				
4	83	47	54	51	Overcast	118				
5	87	48	56	52	Clear	208				
6	77	49	55	53	Clear	208				
7	75	45	54	51	Clear	156				
8	84	49	55	50	Clear	198				
9	88	50	57	51	Clear	164				
10	75	50	55	51	Clear	156				
11	76	40	55	51	Clear	194				
12	81	44	56	51	Clear	252				
13	84	48	58	52	Clear	208				
14	96	52	57	52	Clear	180				
15	80	56	56	52	Clear	218				
16	68	48	54	50	Overcast	203				
17	79	50	55	50	Rain	168				
18	79	45	54	50	Cloudy	189				
19	67	46	53	50	Cloudy	203				
20	61	45	53	50	Overcast	180				
21	70	49	54	50	Overcast	185				
22	79	45	55	50	Cloudy	189				
23	79	46	56	50	Clear	189				
24	77	43	54	50	Clear	203				
25	69	46	54	50	Clear	229				
26	79	37	55	50	Clear	246				
27	83	47	56	53	Clear	224				
28	86	49	56	50	Clear	224				
29	83	48	56	50	Clear	189				
30	89	46	56	50	Clear	234				

APPENDIX TABLE 1 (continued)

<u>May</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	91	48	56	50	Clear	275				
2	83	45	56	50	Cloudy	265				
3	79	39	54	50	Clear	275				
4	78	46	54	50	Clear	284				
5	87	45	55	50	Clear	240				
6	80	46	56	50	Clear	224				
7	78	46	56	50	Clear	289				
8	79	47	55	51	Overcast	246				
9	80	50	54	50	Overcast	279				
10	71	47	54	50	Cloudy	270				
11	76	42	54	50	P. Cloudy	261				
12	82	42	54	51	P. Cloudy	229				
13	90	47	58	51	Clear	270				
14	89	50	56	51	Clear	299				
15	91	47	56	51	Clear	256				
16	83	50	57	51	Clear	261				
17	79	47	56	50	Clear	270				
18	82	49	57	50	P. Cloudy	240				
19	86	46	57	51	Clear	229				
20	88	51	58	52	Clear	265				
21	90	50	58	52	Clear	261				
22	93	54	59	53	Clear	208				
23	91	59	58	52	Clear	213				
24	87	56	57	52	Clear	270				
25	86	51	58	52	P. Cloudy	256				
26	80	49	-	52	P. Cloudy	240				
27	80	50	-	52	Clear	208				
28	82	48	-	53	Sprinkles	279				
29	77	48	58	53	Clear	289				
30	83	45	58	53	Clear	240				
31	72	52	57	52	Cloudy	252				

APPENDIX TABLE 1 (continued)

<u>June</u>	<u>Air (F)</u>		<u>Water (F)</u>		<u>Weather</u>	<u>Flow cfs</u>	<u>Gallo Fish Trapped</u>		<u>MRFF Fish Trapped</u>	
	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Min</u>			<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	74	44	57	52	Clear	289				
2	66	44	-	52	Rain	256				
3	81	47	57	52	Rain	229				
4	88	42	58	53	P. Cloudy	208				
5	93	61	58	52	Clear	235				
6	96	60	58	52	Clear	235				
7	96	57	59	53	Clear	224				
8	96	60	60	53	Clear	218				
9	99	56	60	53	Clear	224				
10	102	56	60	53	Clear	213				
11	106	60	60	53	Clear	229				
12	103	55	61	53	Clear	252				
13	-	58	59	54	Clear	229				
14	102	60	59	54	Clear	265				
15	101	60	60	54	Clear	252				
16	103	58	61	54	Clear	224				
17	101	64	60	54	P. Cloudy	218				
18	102	60	59	54	Clear	235				
19	106	62	59	54	Clear	208				
20	102	58	59	54	Clear	229				
21	98	60	59	54	Clear	261				
22	98	60	59	54	Clear	261				
23	98	56	58	54	Clear	208				
24	90	57	60	54	-	224				
25	92	54	60	53	Clear	261				
26	100	53	61	54	-	229				
27	106	57	61	54	Clear	289				
28	102	58	60	54	Overcast	275				
29	97	58	60	54	Clear	246				
30	98	54	60	54	Clear	198				

APPENDIX TABLE 2. Summary of Chinook Salmon Runs to Merced River Fish Facility ^{a/}

<u>Fiscal Year</u>	<u>Males</u>	<u>Females</u>	<u>Grilse</u> ^{b/}	<u>Totals</u>
1970-71	59	40	--	99
1971-72	54	94	--	148
1972-73	14	51	--	65
1973-74	13	150	--	163
1974-75	24	400	--	424
1975-76	99	300	--	399
1976-77	86	260	--	346
1977-78	44	200	--	244
1978-79	14	45	2	61
1979-80	143	86	120	349
1980-81	43	106	8	157
1981-82	326	278	319	923
1982-83	90	67	32	189
1983-84	30	178	1,587	1,795
1984-85	713	858	167	1,738

a/ From 1970-71 through 1978-79, the annual run of adult female chinook salmon was estimated by using redd counts and carcass recoveries in the spawning channel. The number of male chinook salmon shown each year are actual counts of recovered carcasses. Beginning in 1979-80, an adult fish trap was operated at the facility throughout each spawning season and actual counts were made. There are no records of numbers of grilse until 1978-79.

b/ The criteria for grilse was changed from 21 in. TL and less to 22 in. TL and less in 1983-84, and to 23 in. TL and less in 1984-85.