

State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

REF 90410

ANNUAL REPORT
VAN ARSDALE FISHERIES STATION, 1993-94

by

Alan Grass
Region 3, Inland Fisheries

Inland Fisheries
Administrative Report No. 95-5

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ABSTRACT

This report describes the operation of Van Arsdale Fisheries Station (Snow Mountain Station) Mendocino County, California for the 1993-94 season. Chinook salmon, Oncorhynchus tshawytscha, and steelhead trout, O. mykiss, counts have been made at this station since 1933.

During the season, 2 chinook and 33 steelhead were trapped. A total of 27,165 yearling steelhead was held for imprinting and then released below Capehorn Dam. A second group of 39,455 Van Arsdale yearling steelhead was released into the Eel River above the confluence with the South Fork.

Numbers of fish trapped, Eel River morning water temperatures, Eel River flows and weather conditions were recorded (Appendix Table 1).

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Department of Fish and Game, 1416 Ninth Street, Sacramento,
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INTRODUCTION

Van Arsdale Fisheries Station (VAFS) is located approximately 25 miles northeast of the town of Ukiah, Mendocino County, California. It is on the Eel River at Capehorn Dam, which impounds Van Arsdale Reservoir. The Station was constructed by Snow Mountain Light and Power Company in 1907 and subsequently sold to Pacific Gas and Electric Company (PG&E) in 1930. A fish ladder located on Capehorn Dam is maintained by PG&E; the Station, grounds and facilities are maintained by the Department of Fish and Game.

METHOD OF OPERATION

The upstream migrant fish trap was placed into operation on December 6, 1993 and remained in continuous operation until April 20, 1994. The trap was checked daily, usually between 0700 and 0900 hours. Eel River flow was measured at a PG&E gauging station (E-11) located immediately downstream of Capehorn Dam. Eel River water temperature and general weather conditions were also recorded (Appendix Table 1).

1993-94 CHINOOK SALMON TRAPPING

Two chinook (one adult male and one jack) were trapped in the 1993-94 season. The first fish entered the trap on December 6, 1993 and the last on January 1, 1994. The first chinook was released upstream on the day that it was trapped. The second fish was probably killed by an otter before it could be processed.

Lack of rain during the early winter and resulting low river flow conditions prevented some fish from reaching the upper river. Surveys done in the lower river recorded very low fish numbers.

1993-94 STEELHEAD TRAPPING

The first steelhead was trapped on January 23, 1994 and the last on April 4, 1994. A total of 33 steelhead (11 males, 21 females, and 1 subadult) was trapped.

No fish were spawned at the Station this season. All trapped steelhead were released upstream after data on species, sex, fork length, and hatchery fin clips were collected.

1993-94 STEELHEAD PLANTING

Eel River yearling steelhead were raised at Mad River Hatchery and released at two locations in the spring of 1994. One group of 27,165 fish was imprinted at VAFS and released below Capehorn Dam (Table 1). A second group of 39,455 fish was transported from Mad River Hatchery to a location on the Eel River above the confluence with the south fork identified as "McCann" off Dyerville Road, Humboldt County, California (Table 2).

TABLE 1. Yearling Steelhead Plants, Eel River at Van Arsdale Fisheries Station, 1993-94 Season.

<u>Date received</u>	<u>released</u>	<u>Number</u>	<u>Size (per lb)</u>	<u>Mark</u>	<u>Location of Plant</u>
2-28-94	3-8-94	1,105	2.6	RV, RM	Capehorn Dam
3-1-94	3-8-94	13,160	5.6	RV	Capehorn Dam
3-2-94	3-8-94	10,400	4.0	RV	Capehorn Dam
3-3-94	3-8-94	2,500	5.0	RV	Capehorn Dam
Total		27,165			

Table 2. Yearling Steelhead Plants, Eel River at McCann, 1993-94 Season.

<u>Date released</u>	<u>Number</u>	<u>Size (per lb)</u>	<u>Mark</u>	<u>Location of Plant</u>
3-15-94	8,500	5.0	LV	Eel River Bridge at McCann
3-16-94	9,000	5.0	LV	Eel River Bridge at McCann
3-17-94	7,980	4.2	LV	Eel River Bridge at McCann
3-17-94	8,600	4.3	LV	Eel River Bridge at McCann
3-18-94	5,375	4.3	LV	Eel River Bridge at McCann
<hr/>				
Total	39,455			

Additional information concerning steelhead fin clip returns may be found in a report by Steiner Environmental Consultants (S.E.C.) entitled: Potter Valley Project, Effects of Operations on Anadromous Salmonids.

APPENDIX TABLE 1. Date of Chinook and Steelhead Arrivals, Eel River Flow and Weather Conditions at Van Arsdale Fisheries Station, 1993-94.

<u>Date</u>	<u>CHINOOK</u>			<u>STEELHEAD</u>			<u>Flows (CFS) E11</u>	<u>Weather</u>	
	<u>Male</u>	<u>Female</u>	<u>Jack</u>	<u>Male</u>	<u>Female</u>	<u>Sub Adults</u>			
Dec.									
1									
2									
3									
4									
5									
6			1				50	Rain	
7							50	Rain	
8							416	Rain	
9							48	Rain	
10							48	Overcast	
11							258	Rain	
12							106	Overcast	
13							106	Clear	
14							678	Rain	
15							164	Clear	
16							164	Clear	
17							112	Clear	
18							114	Clear	
19							116	Clear	
20							116	Clear	
21							114	Clear	
22							114	Clear	
23							112	Clear	
24							112	Clear	
25							114	Clear	
26							114	Overcast	
27							114	Clear	
28							116	Clear	
29							114	Clear	
30							112	Clear	
31							112	Overcast	
Monthly	-----								
Totals	0	0	1	0	0	0			

APPENDIX TABLE 1. (continued)

<u>Date</u>	<u>CHINOOK</u>			<u>STEELHEAD</u>			<u>Flows (CFS) E11</u>	<u>Weather</u>	
	<u>Male</u>	<u>Female</u>	<u>Jack</u>	<u>Male</u>	<u>Female</u>	<u>Sub Adults</u>			
Jan.									
1	1						118	Rain	
2							114	Overcast	
3							112	Clear	
4							114	Rain	
5							116	Clear	
6							112	Clear	
7							112	Clear	
8							116	Rain	
9							116	Overcast	
10							112	Clear	
11							112	Clear	
12				Station not attended					
13							112	Clear	
14							112	Clear	
15							110	Clear	
16							116	Clear	
17							112	Clear	
18							112	Clear	
19							122	Clear	
20							112	Clear	
21							114	Rain	
22							149	Rain	
23				1	1		362	Rain	
24					2		659	Rain	
25					3	1	339	Rain	
26							294	Clear	
27				1	1		146	Clear	
28							124	Clear	
29							120	Clear	
30							142	Clear	
31							120	Clear	
Monthly	-----								
Totals	1	0	0	2	7	1			

APPENDIX TABLE 1. (continued)

<u>Date</u> Feb.	<u>CHINOOK</u>			<u>STEELHEAD</u>		<u>Sub</u> <u>Adults</u>	<u>Flows</u> <u>(CFS)</u> <u>El1</u>	<u>Weather</u>
	<u>Male</u>	<u>Female</u>	<u>Jack</u>	<u>Male</u>	<u>Female</u>			
1							120	Clear
2							120	Clear
3							150	Clear
4							150	Clear
5							114	Overcast
6							114	Rain
7							297	Rain
8							118	Clear
9							119	Clear
10							220	Rain
11							162	Clear
12							125	Clear
13							128	Clear
14					1		128	Clear
15							128	Overcast
16							130	Overcast
17							471	Rain
18				1	2		343	Snow
19							212	Snow
20							106	Rain
21							258	Rain
22							174	Clear
23							101	Clear
24							106	Clear
25							124	Overcast
26							120	Rain
27							179	Rain
28							142	Overcast
Monthly	-----							
Totals	0	0	0	1	3	0		

APPENDIX TABLE 1. (continued)

<u>Date</u>	<u>CHINOOK</u>			<u>STEELHEAD</u>			<u>Flows (CFS) E11</u>	<u>Weather</u>
	<u>Male</u>	<u>Female</u>	<u>Jack</u>	<u>Male</u>	<u>Female</u>	<u>Sub Adults</u>		
Mar.								
1				1	3		128	Clear
2				3			106	Clear
3					1		104	Overcast
4					1		101	Overcast
5				1	2		128	Overcast
6							104	Clear
7							98	Clear
8							101	Clear
9							101	Clear
10							104	Clear
11							106	Clear
12							98	Clear
13					1		104	Clear
14							116	Clear
15							116	Clear
16							462	Rain
17					1		106	Clear
18				1			104	Overcast
19							116	Clear
20							119	Clear
21							106	Rain
22							106	Snow
23							106	Overcast
24							119	Clear
25					2		119	Clear
26							110	Clear
27							119	Clear
28							113	Overcast
29							110	Clear
30							114	Clear
31							111	Clear
Monthly Totals	0	0	0	6	11	0		

APPENDIX TABLE 1 (continued)

<u>Date</u>	<u>CHINOOK</u>			<u>STEELHEAD</u>			<u>Flows</u> <u>(CFS)</u> <u>E11</u>	<u>Weather</u>	
	<u>Male</u>	<u>Female</u>	<u>Jack</u>	<u>Male</u>	<u>Female</u>	<u>Sub</u> <u>Adults</u>			
Apr.									
1							113	Clear	
2							106	Overcast	
3				1			99	Clear	
4				1			96	Clear	
Monthly	-----								
Totals	0	0	0	2	0	0			
Season									
Totals	1	0	1	11	21	1			

APPENDIX TABLE 2. Annual Chinook and Steelhead Counts, Van Arsdale Fisheries Station, 1933-34 to 1993-94.

<u>Season</u>	<u>Chinook</u>	<u>Steelhead</u>	<u>Season</u>	<u>Chinook</u>	<u>Steelhead</u>
1933-34		3,247	1963-64	3	846
1934-35		2,225	1964-65	108	921
1935-36		6,310	1965-66	94	423
1936-37		6,861	1966-67	119	534
1937-38		3,413	1967-68		531
1938-39		4,786	1968-69		340
1939-40		3,990	1969-70	15	719
1940-41		2,228	1970-71	47	1,863
1941-42	no record		1971-72		696
1942-43	no record		1972-73		586
1943-44	no record		1973-74	12	1,040
1944-45		9,528	1974-75	1	1,126
1945-46		5,054	1975-76	2	1,077
1946-47*	917	4,409	1976-77		39
1947-48		178	1977-78	23	590
1948-49		2,433	1978-79	5	106
1949-50	no record		1979-80		87
1950-51	55	1,091	1980-81		1,966
1951-52		5,444	1981-82	175	646
1952-53		2,197	1982-83	9	369
1953-54		2,590	1983-84	26	1,534
1954-55		6,131	1984-85	153	1,980
1955-56		3,719	1985-86	961	1,194
1956-57		4,109	1986-87	1,754	1,952
1957-58		5,151	1987-88	1,080	2,206
1958-59		3,335	1988-89	328	331
1959-60		2,206	1989-90	6	691
1960-61		1,130	1990-91		31
1961-62		1,693	1991-92	5	60
1962-63	9	2,030	1992-93	4	823
			1993-94	2	33

*Forty-seven coho salmon were trapped this season.