

REF 90407

State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

ANNUAL REPORT
VAN ARSDALE FISHERIES STATION, 1989-90

by

Alan F. Grass
Region 3, Inland Fisheries

Inland Fisheries
Administrative Report No. 91-15

1991

REF 904107

ANNUAL REPORT
VAN ARSDALE FISHERIES STATION, 1989-90^{1/}

by

Alan F. Grass
Region 3, Inland Fisheries

ABSTRACT

This report describes the operation of Van Arsdale Fisheries Station (formerly the Snow Mountain Station), Mendocino County, California, for the 1989-90 season. Chinook salmon, Oncorhynchus tshawytscha, and steelhead trout, O. mykiss, counts have been made at this station since 1933.

During the season, a total of 6 chinook salmon and 691 steelhead was trapped.

Numbers of migrating fish trapped, Eel River morning water temperatures, Eel River flows, and weather conditions were recorded.

^{1/} Inland Fisheries Administrative Report No. 91-15.
Submitted August 1991. Edited by K.A. Hashagen, California Department of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814

INTRODUCTION

Van Arsdale Fisheries Station 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 Fisheries Station, grounds, and facilities are maintained by the Department of Fish and Game.

METHODS

The upstream migrant fish trap was placed into operation on October 31, 1989 and remained in continuous operation until May 5, 1990. The trap was checked daily. All trapped fish not retained for spawning were released upstream after data on species, sex, fork length, and hatchery fin clips was collected.

Environmental data were recorded 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 Tables 1 and 2).

1989-90 CHINOOK SALMON PROGRAM

The first chinook was trapped on December 19, 1989 and the last on January 7, 1990. A total of 6 chinook (2 males, 0 females, and 4 grilse) was recorded (Appendix Table 1).

All trapped chinook were passed above Capehorn Dam. However, 1 male and 2 grilse refused to leave the release area and either died or were killed by otters.

Refusal to negotiate the upper ladder is a yearly phenomenon at this Station and is thought to be a result of poor homing instincts in fish not originally spawned in the upper river.

No chinook eggs were collected this season.

PG&E, in cooperation with the Department of Fish and Game, continued with a 10-year study to evaluate the impact of a power plant diversion on the upper Eel. A complete summary of data collected and tagged fish movements may be found in a report by Steiner Environmental Consultants (SEC) entitled: Potter Valley Project, Effects of Operations on Anadromous Salmonids.

1989-90 STEELHEAD PROGRAM

The first steelhead was trapped on January 10, 1990, and the last on April 28, 1990. A total of 691 steelhead (260 males, 426 females, and 5 sub-adults) was trapped (Appendix Table 1).

Forty-one females and 32 males were spawned in an attempt to raise yearlings for a management experiment. A total of 149,024 green eggs was taken. The eggs from each of the 41 females were kept in separate trays with their own water supply in highly specialized isolator incubator stacks. A total of 89,169 eyed eggs was shipped to Mad River Hatchery for rearing.

Because of the discovery in 1987-88 of a viral disease, Infectious Hematopoietic Necrosis (IHN), samples of ovarian fluid were collected from each female. Samples were shipped to the School of Veterinary Medicine at the University of California at Davis. All samples tested negative.

After spawning, female steelhead were released downstream of Capehorn Dam. Male steelhead were released upstream of the dam.

Additional information concerning steelhead movements, tagged and fin clipped fish returns, and related data may be found in the SEC publication.

APPENDIX TABLE 1. Date of Fish Arrivals, Eel River Flow and Weather Conditions at Van Arsdale Fisheries Station, 1989-90

Date	Chinook			Steelhead			Flow (cfs)	Weather
	M	F	Grilse	M	F	Sub-adults		
19	1		1				70	Clear
20			1				53	Clear
21			1				53	Clear
22							53	Clear
23							53	Clear
24							53	Clear
25							53	Clear
26							53	Clear
27							53	Clear
28			1				53	Clear
29							53	Clear
30							53	Clear
Monthly totals	1	0	4	0	0	0		
<hr/>								
Jan.								
1							13	Rain
2							13	Clear
3							8	Clear
4							8	Clear
5							8	Clear
6							8	Clear
7	1						116	Rain
8							735	Rain
9							86	Clear
10				1	1		10	Overcast
11							25	Cloudy
12					1		8	Rain
13				1	2	1	597	Rain
14				1	1		135	Clear
15							86	Overcast
16							39	Rain
17							9	Clear
18							9	Clear
19							9	Clear
20							4	Clear
21							4	Clear
22							4	Clear
23							4	Clear
24							4	Clear
25							4	Cloudy
26							4	Clear
27							4	Clear
28							4	Clear
29							4	Overcast
30							26	Rain
31				11	21		24	Overcast
Monthly Total	1	0	0	14	26	1		

Appendix Table 1 (cont.)

Date	Chinook			Steelhead			Flow (cfs)	Weather
	M	F	Grilse	M	F	Sub- adults		
Feb.				1			98	Snow
2				6	4		122	Clear
3							106	Overcast
4				1	3		220	Clear
5				12	13		124	Overcast
6							217	Clear
7							137	Clear
8							101	Rain
9							42	Clear
10							42	Clear
11				5	6		106	Clear
12					1		101	Clear
13							99	Clear
14							99	Clear
15							104	Clear
16							197	Snow
17				5	8	1	108	Snow
18					1		101	Cloudy
19							106	Clear
20				8	6		101	Clear
21				3	2		106	Clear
22				20	24		156	Clear
23				4	3		209	Clear
24				14	11		187	Clear
25				12	7		187	Clear
26				9	6		139	Clear
27				4	4		120	Clear
28				9	9		106	Clear
Monthly total	0	0	0	113	108	1		
Mar.								
1				3	6		114	Overcast
2				1	3		120	Rain
3				44	104		206	Rain
4				1	3		188	Rain
5				7	13		223	Clear
6				2	5		171	Clear
7				1	10		146	Clear
8				1	1		118	Clear
9				2	8		104	Clear
10				2	2		108	Rain
11					5		110	Clear
12				1	1		104	Clear
13				1	2		104	Clear
14				1	1		104	Rain
15				9	20		126	Rain
16				18	23		110	Overcast
17				1	9		106	Cloudy
18				8	14		106	Cloudy
19				2	8		104	Clear

Appendix Table 1 (cont.)

Date	Chinook			Steelhead			Flow (cfs)	Weather
	M	F	Grilse	M	F	Sub- adults		
Mar.								
20				1	3		106	Clear
21					3		108	Clear
22				3	7		108	Cloudy
23				4	6		112	Cloudy
24				1	1		113	Clear
25					3		113	Overcast
26							113	Clear
27				1	2		113	Clear
28				2	3		197	Clear
29				5	3		135	Clear
30					3		113	Clear
31				2	4		110	Clear
Monthly total	0	0	0	124	276	0		
April								
1							106	Clear
2				1	3		39	Clear
3					3		30	Clear
4				3	4		43	Clear
5				1	2		51	Clear
6				1	1		51	Overcast
7				1	1		30	Overcast
8							26	Overcast
9							23	Cloudy
10							23	Clear
11				1			23	Clear
12							23	Clear
13						1	22	Clear
14						1	22	Clear
15							20	Overcast
16							20	Clear
17							20	Rain
18								Station not staffed
19								Station not staffed
20								Station not staffed
21								Station not staffed
22							20	Clear
23							20	Clear
24							20	Clear
25							20	Clear
26				1	2		30	Clear
27								Station not staffed
28						1	20	Clear
Monthly total	0	0	0	9	16	3		
SEASON TOTALS	2	0	4	260	426	5		

APPENDIX TABLE 2. Annual Chinook and Steelhead Counts, Van Arsdale Fisheries Station, 1933-34 through 1989-90

Season	Chinook	Steelhead	Season	Chinook	Steelhead
1933-34		3,247	1977-78	23	590
1934-35		2,225	1978-79	5	106
1935-36		6,310	1979-80		87
1936-37		6,861	1980-81		1,966
1937-38		3,413	1981-82	175	646
1938-39		4,786	1982-83	9	369
1939-40		3,990	1983-84	26	1,534
1940-41		2,228	1984-85	153	1,980
1941-42	No record		1985-86	961	1,196
1942-43	No record		1986-87	1,754	1,952
1943-44	No record		1987-88	1,080	2,206
1944-45		9,528	1988-89	328	331
1945-46		5,054	1989-90	6	691
1946-47*	917	4,409			
1947-48		178			
1948-49		2,433			
1949-50	No record				
1950-51	55	1,091			
1951-52		5,444			
1952-53		2,197			
1953-54		2,590			
1954-55		6,131			
1955-56		3,719			
1956-57		4,109			
1957-58		5,151			
1958-58		3,335			
1959-60		2,206			
1960-61		1,130			
1961-62		1,693			
1962-63	9	2,030			
1963-64	3	846			
1964-65	108	921			
1965-66	9	423			
1966-67	119	534			
1967-68		531			
1968-69		340			
1969-70	15	719			
1970-71	47	1,863			
1971-72		696			
1972-73		586			
1973-74	12	1,040			
1974-75	1	1,126			
1975-76	2	1,077			
1976-77		39			

* Forty-seven coho salmon were recorded this season.