

The Resources Agency of California  
Department of Fish and Game

SNOW MOUNTAIN STATION, MENDOCINO COUNTY, ANNUAL REPORTS  
1960-61, 1961-62 and 1962-63 1/

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Region 3, Inland Fisheries

SUMMARY

Cape Horn Dam was constructed in 1907 on the Eel River in Mendocino County. The Department of Fish and Game began egg collecting operations at this location about 1909.

Few records of the station operations prior to 1933 are available. The present record keeping methods were initiated in 1955.

In 1960, Snow Mountain Egg Collecting Station was designated as a fish counting and a standby egg collecting station. Cedar Creek and Nimbus hatcheries at this time assumed the responsibility for supplying the Department's steelhead egg needs.

Snow Mountain Station consists of a fish ladder, fish trap and spawning house.

Modifications to the fish ladder were made in 1928, 1940 and 1941. A new, improved ladder was constructed during 1962.

In January 1963, a program was initiated for collection of additional steelhead life history information.

Total seasonal counts for the three years covered by this report are:

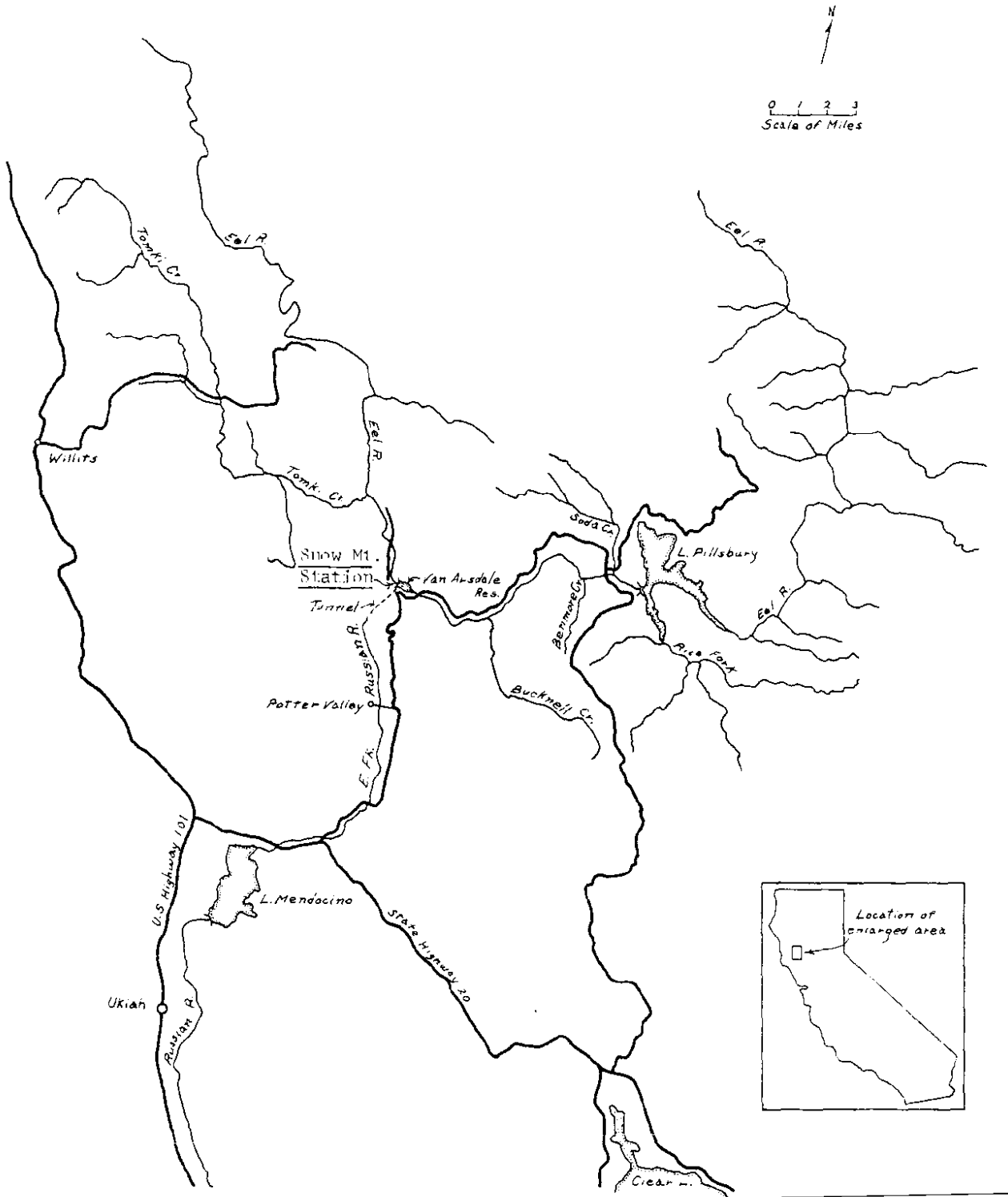
	Steelhead	King salmon
1960-61	1,130	9
1961-62	1,693	
1962-63	2,030	9

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1/ Marine Resources Administrative Report No. 57-5

2/ Now with Marine Resources Branch.

FIGURE 1  
Upper Eel River Drainage



## INTRODUCTION

Steelhead trout (Salmo gairdnerii) counts have been made at Snow Mountain Egg Collecting Station each season since 1933. This report describes the results of counting operations conducted between the fall of 1960 and the spring of 1963.

### Objectives

The major purpose of the operation is to record the runs of salmon and steelhead passing up the Eel River above this point. There are few places in the state where accurate counts of anadromous fishes can be made and have been recorded over a long period of time.

In addition to the counts, collection of other steelhead life history data was initiated in January 1963. Objectives were to collect data on:

1. The period and intensity of the upstream migration.
2. The sex ratio.
3. The length-weight relationship. 3/
4. The age composition of the run. 3/

### Location

This station, which is operated by Department of Fish and Game personnel, is located at the base of Cape Horn Dam on the main stem of the Eel River approximately 130 miles upstream from its mouth.

The Eel River originates in the mountains of northern Lake County and flows into Lake Pillsbury. From Lake Pillsbury, it flows westward approximately 14 miles to Cape Horn Dam (Figure 1).

Cape Horn Dam which impounds Van Arsdale Reservoir, is owned and operated by the Pacific Gas and Electric Company. They divert water released from Scott Dam (Lake Pillsbury) via a tunnel to the Potter Valley Power House, which is situated at the headwaters of the East Branch of the Russian River.

### History

Cape Horn Dam was constructed in 1907 by the Snow Mountain Water and Power Company. The Division (now Department) of Fish and Game began egg collecting operations at this location in about 1909, when Snow Mountain Egg Collecting Station was established. After the Snow Mountain Water and Power Company was purchased by Pacific Gas and Electric Company in August 1938, a lease was arranged which gave the State of California permission to install and continue to maintain an egg collecting and egg "eyeing" station at the foot of Cape Horn Dam.

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3/ The age and weight-length information is being prepared as a separate report.

Few records are available to the writer for operations conducted at this station prior to 1933. It was not until about 1955 that the present record keeping methods were initiated. Egg collecting and fish counting operations were conducted in most years up to and including the 1959-60 season. Since 1960, Cedar Creek and Nimbus hatcheries have assumed the full role of supplying steelhead eggs required for Departmental programs. In 1960, Snow Mountain Station was designated a standby egg collecting station and activities were limited primarily to fish counting operations until 1963 when additional steelhead life history studies were initiated.

All available information on fish counting and egg collecting operations conducted at Snow Mountain Station prior to 1960 is shown in Appendix 1. Comments about the source and accuracy of these data are also given.

Modifications to the fish ladder were made in 1928, 1940 and 1941. The old ladder was removed and a new, improved ladder constructed in 1962. The work was carried out on a contract basis by the State Division of Forestry, using Conservation Camp personnel.

During summer low-flow periods, an average of 250 cfs, or almost all of the flow in the Eel River above Cape Horn Dam, is diverted through the tunnel to the powerhouse in Potter Valley. During this period, which lasts until heavy rains begin late in the year, only 2 cfs of water is released through the fishway over Cape Horn Dam and down into the Eel River. A leakage of a few second feet of water also occurs from the dam.

Summer water temperatures average 64°F. in the river above Cape Horn Dam and 63°F or higher below the dam.

Fish counted through the ladder at this station can continue upstream to the base of Scott Dam, which is a complete barrier to fishlife. It is not known to what extent the river between the two dams is used by steelhead for spawning, for turbid water conditions during the spawning period make observation difficult. Large numbers of steelhead fingerlings are observed annually, however, in the three main tributaries, Benmore, Bucknell and Soda Creeks, which enter this section. This would indicate these tributaries receive heavy use for spawning. Soda Creek, one of these tributaries, has 2 miles of spawning area where fish rescue operations are carried out annually.

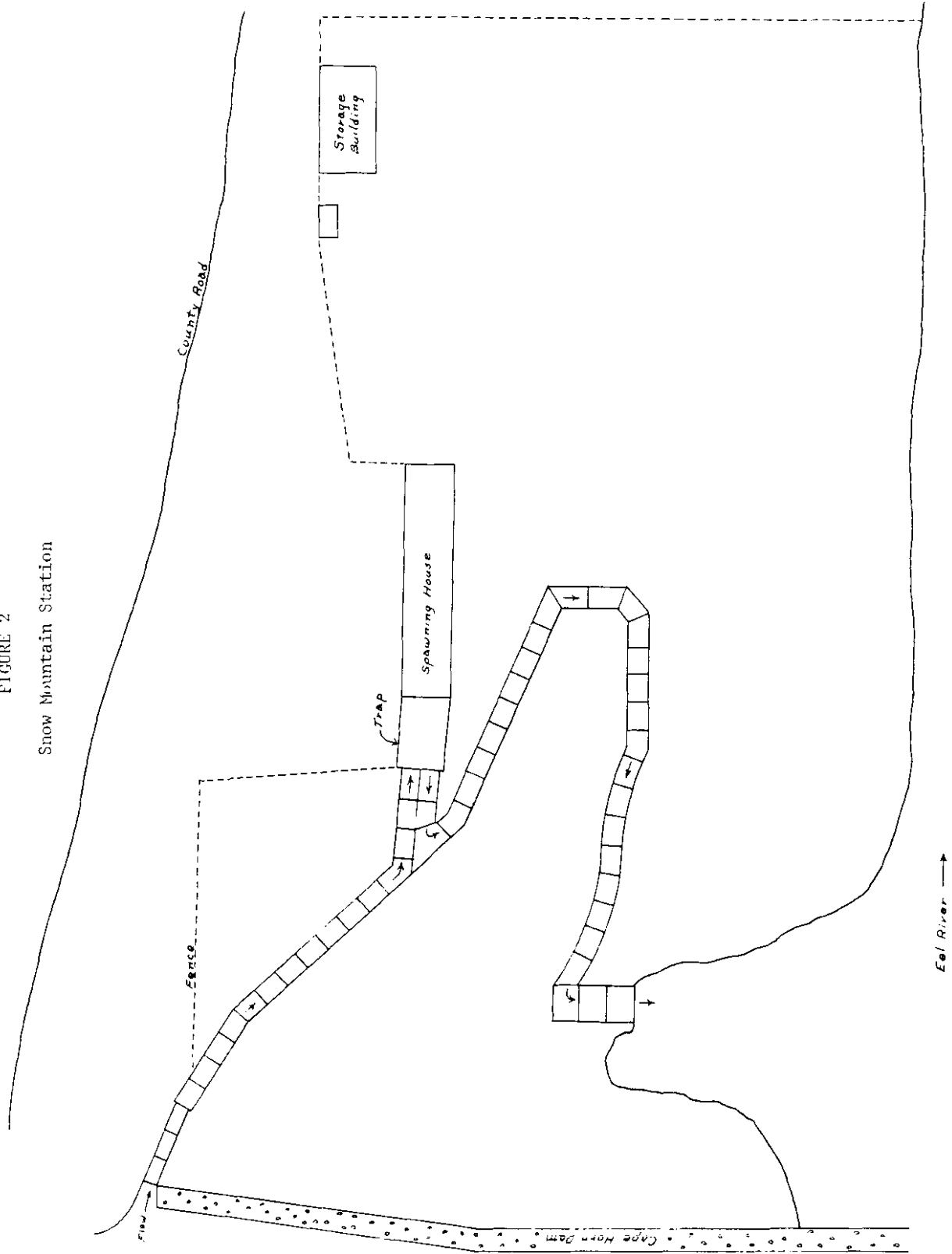
For several years, approximately 500 adult steelhead were planted annually in Lake Pillsbury to utilize spawning areas above the lake. This was discontinued in 1960 when it became apparent the steelhead runs below Lake Pillsbury were on the decline. Priority was given to use of adults to maintain the river run below Scott Dam.

#### DESCRIPTION OF THE STATION

Snow Mountain Egg Collecting Station (Figure 2) consists of three main units: 1) a fishway extending over Cape Horn Dam, 2) a fish trap, and 3) a shed type spawning house which covers the fish trap and holding pens.

The trap is a modified finger weir. Instead of being rigidly attached to the weir in the conventional manner, the bank of fingers is hinged to the top of

FIGURE 2  
Snow Mountain Station



the weir. Floats attached to the bank at each end of the weir cause the fingers to remain a constant 2 inches below the surface of the water at all flows.

The new fish ladder has 49 pools and is almost 600 feet in length. Design changes incorporated in the new ladder have improved fish passage over the dam. Table 1 compares old and new ladder dimensions, and average flow during the migration period.

TABLE 1  
Comparison of Old and New  
Fish Ladder Dimensions and  
Average Flow

	<u>Old ladder</u>	<u>New ladder (1962)</u>
Length of pools	6 to 8 feet	8 feet
Width of pools above spawning house	4 feet	5 feet (top 3 pools are 4 feet wide)
Width of pools below spawning house	4 feet	6 feet (bottom 3 pools are approximately 10 feet wide)
Depth of pools	1½ to 2 feet	3 to 4 feet
Height of jumps	1½ to 2 feet	1 foot maximum
Average flow at migration time	3 cfs	5 to 6 cfs

#### FISH COUNTING METHODS

When fish are sorted, they are first crowded to the upper end of the holding pen; then dip-netted into a rectangular dope tank containing Quinaldine @ 1 cc per gallon of water. After the fish become quiet, they are weighed (to the nearest ounce) on a "Chatillon" hanging scale of 15 pounds capacity. The fork length is then measured by placing the fish in a "V" trough, calibrated in tenths of inches. Fish are then released into a pool above the trap to continue their migration upstream. The length, weight and sex are recorded on a plastic sheet and transferred to a permanent data sheet later.

Prior to 1963 the trap was normally checked at 8 AM, 5 PM, and 9 PM. If, however, only a small number of fish were in the trap at the time of a check, sorting and counts were sometimes delayed until more fish entered. In 1963, with the initiation of the upstream migration study, the trap was checked and counts made at 8 AM, 12 M, 5 PM and 9 PM.

## 1960-61 SEASON REPORT

### Climatic Conditions

The 1960-61 season was characterized by extended periods with little or no rain interspersed with groups of rather closely spaced storms. One such series of storms brought 14 inches of rain from November through December 2. A single storm dropped 6 inches of rain from December 15 through 18. This was followed by 35 days of weather which was rainless except for January 8. A series of four storms occurred between January 23, and February 15 followed by another four between March 8 and 26. The last rain of the season was a four day storm which started April 20.

### Fish Count

The trap was placed in operation December 2, 1960 and the first steelhead were trapped on December 7. Daily total counts of steelhead entering the trap are shown in Figure 3 and Appendix 2. It will be noted that there were three more or less distinct steelhead runs; one in the January-February period and the other two in February and March. The largest monthly steelhead count, 569, was tallied in February. March was second with a total of 279. The largest single daily count of 100, occurred on February 7. Trapping operations were terminated on April 22, 1961.

The number of steelhead trapped during the 1960-61 season consisted of 417 males and 713 females, or a total of 1,130 fish. A total of nine male king salmon was also counted through the station in this season.

## 1961-62 SEASON REPORT

### Climatic Conditions

In 1961, the November-December storm pattern was quite similar to that of 1960. In the remainder of the season, two small storms on January 12 and 18 were the only break in the clear weather that prevailed from mid-December until February 6. Twelve days of rain, which started on February 6, were followed by 10 days of clear weather. The next series of storms occurred during the first three weeks of March. Clear weather during the last week of March and all of April was interrupted by one small storm on April 19.

### 1961-62 Fish Count

The fish trap was placed in operation on December 1, 1961. However, the first steelhead were not trapped until January 31, 1962. Figure 4 and Appendix 3 show the daily counts of steelhead entering the trap. Again, there were three more or less distinct steelhead runs; one in February and two in March. The largest monthly total, counted in March, was 824. February was second with a total of 638. The largest single daily count was 194, on February 15. Trapping operations were terminated on April 14, 1962. The number of steelhead trapped during the 1961-62 season included 644 males and 1,049 females for a total of 1,693 fish.

FIGURE 3  
 Daily Steelhead Counts  
 Snow Mountain Station  
 1960-61

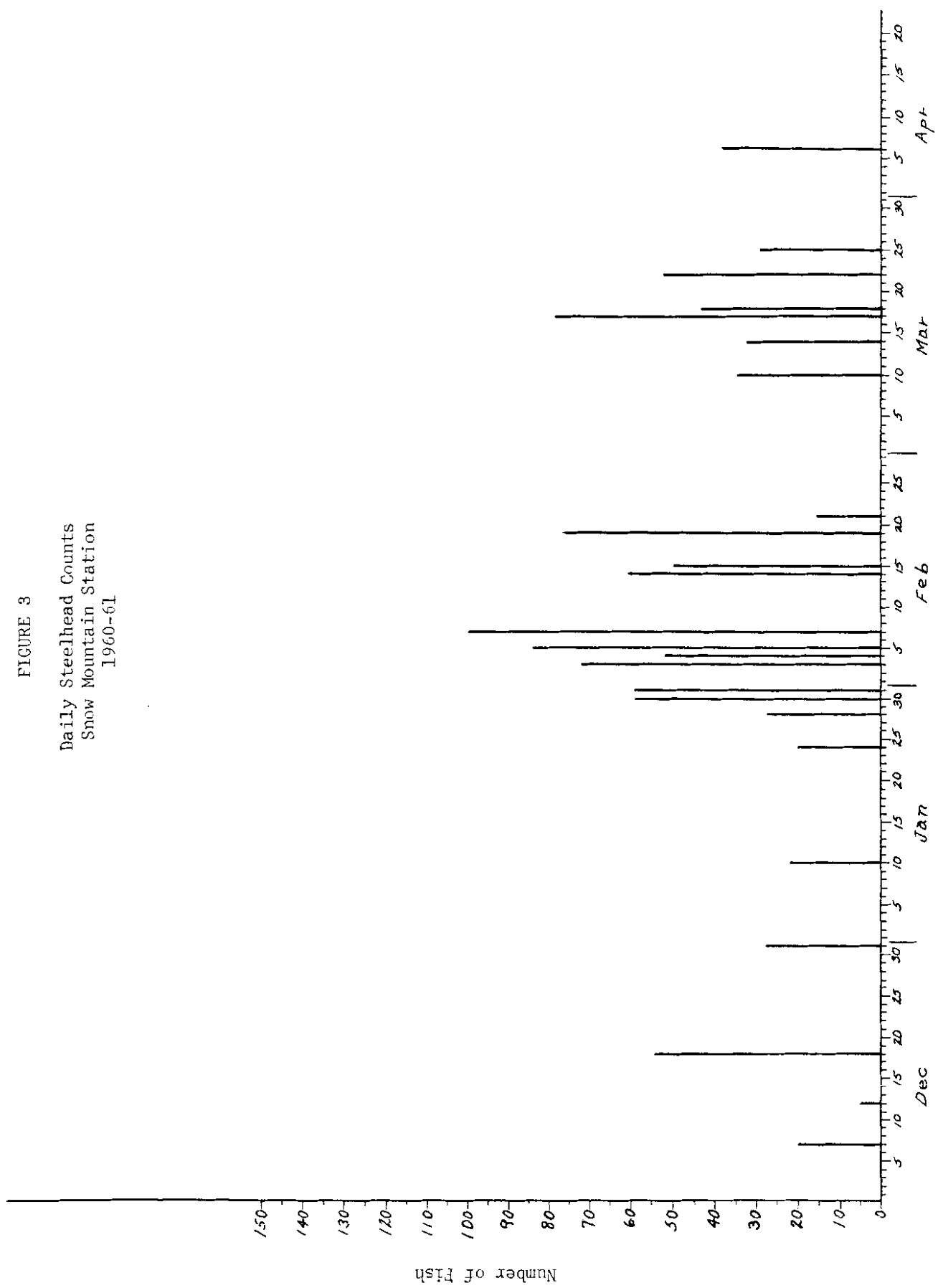
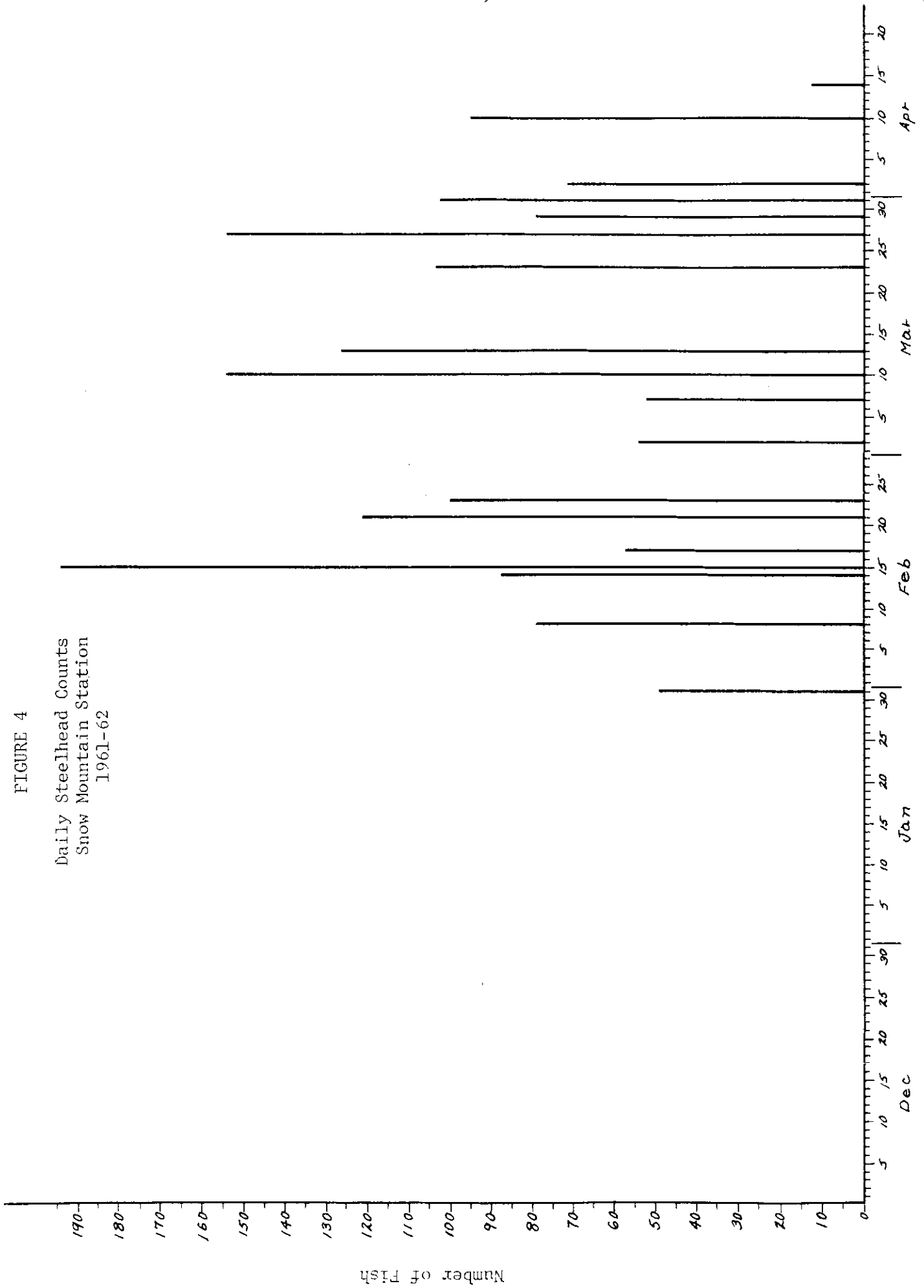




FIGURE 4  
Daily Steelhead Counts  
Snow Mountain Station  
1961-62



## 1962-63 SEASON REPORT

### Climatic Conditions

The weather pattern in November and December 1962 was quite similar to that of the two previous years. A series of storms in November extended through December 2. They were followed by a five day storm starting December 13. The mid-December storm was followed by a prolonged dry spell of 42 days. The drought period was finally broken January 29 by a severe storm that created flood conditions. This large storm was followed by a series of small storms that continued until February 16.

### 1962-63 Fish Counts

The new fish ladder was finished and put into operation on November 27, 1962 and the fish trap was installed at the same time. King salmon were the first fish to use the new ladder. This species was first seen below the ladder on November 27. During the next 18 days, nine were counted through the ladder. This is the first time king salmon have been recorded over the ladder since December 1960. In recent years fair numbers have been observed spawning in Tomki Creek, a tributary which enters the main river about two miles downstream from the station.

The first steelhead were trapped on December 2, 1962. A total of 203 steelhead moved through the ladder in December. None moved between January 4 and January 29. Daily counts of steelhead entering the traps are shown in Figure 5 and Appendix 4. It will be noted that there were, once again, three more or less distinct steelhead runs; the first was in December and the others in February and March. The largest monthly steelhead count, which occurred in February, was 900. March was the second largest with a total of 680. The largest single daily count, 131, occurred on March 25. Because of other work assignments, trapping operations were terminated on April 22, 1963. Fish and Game Warden, Garrie Heryford, reported steelhead were observed to continue to move upstream as late as May 27. The numbers, however, were believed to be too slight to warrant continued operation of the station.

The total number of steelhead and king salmon trapped during the 1962-63 season were as follows:

<u>Steelhead</u>		<u>King Salmon</u>	
Male	625	Male	7 (6 grilse)*
Female	<u>1,405</u>	Female	<u>2</u>
Total	2,030	Total	9

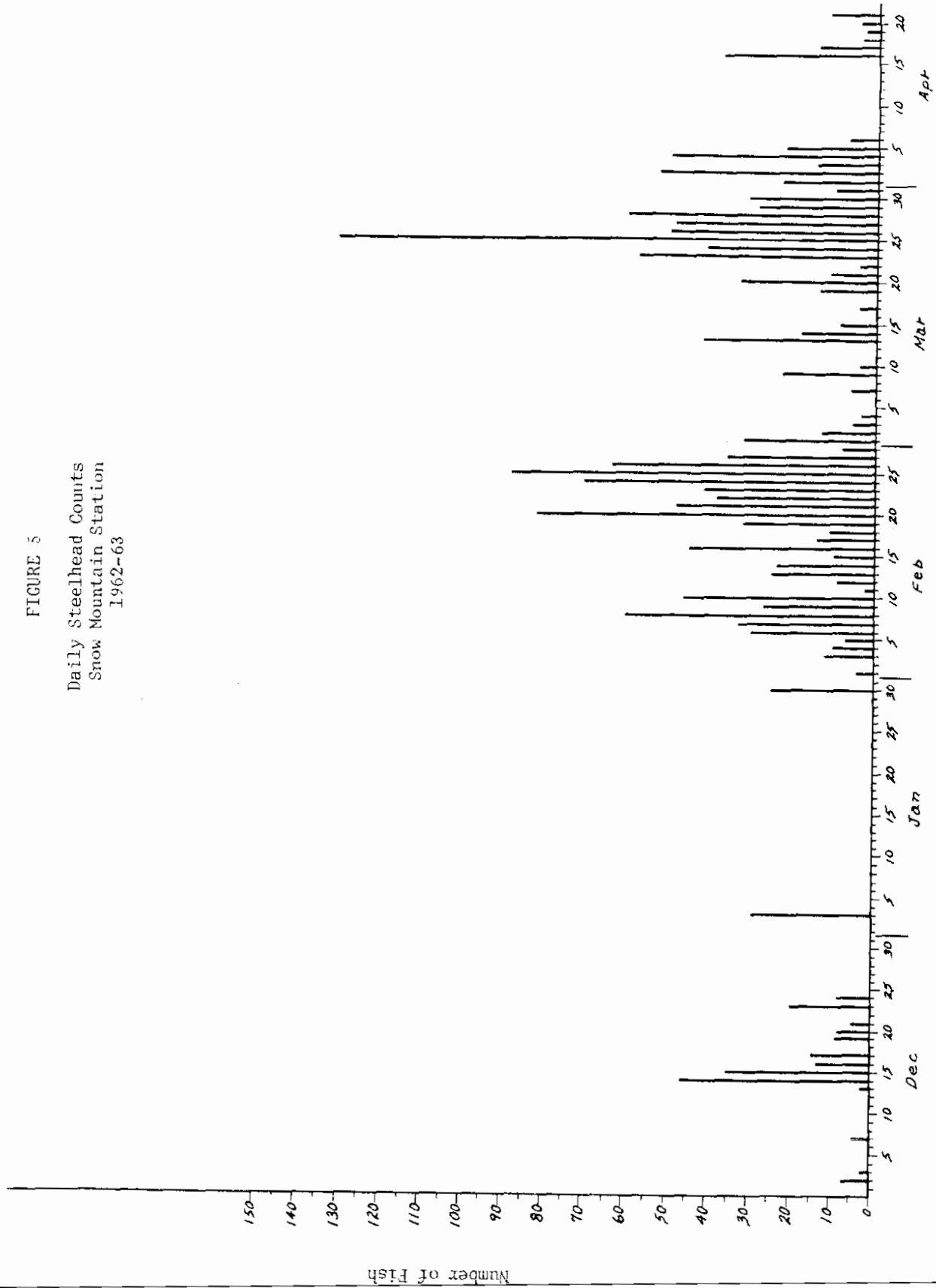
(See Appendix 4)

\*Fish under 20 inches fork length

### DISCUSSION

Personal observations over the past several years seem to confirm that there is a definite relationship between the rainfall pattern and arrival time of fish at the station. This is particularly true in the case of king salmon.

FIGURE 5  
Daily Steelhead Counts  
Snow Mountain Station  
1962-63



The small flow releases which normally occur from Cape Horn Dam at the time salmon migrate is probably not adequate to allow their passage up the main river above Tomki Creek. If early rains occur, as was the case in 1962, flow increases allow the salmon to continue up the main river to the station and pass through the fishway.

Information about salmon runs to the area above Cape Horn Dam in the early days is quite limited. Correspondence from E. G. Sack, the Fish Hatchery Assistant who operated this station for a number of years, indicates these runs were sometimes of respectable size. In the 1946-47 season he reported a total of 326 male and 591 female king salmon and 47 silver salmon (sexes combined) ascended the ladder. He also reported that 17 male and 38 female king salmon ascended the ladder in the 1950-51 season.

It is interesting to note that a check of the stream flow records at Van Arsdale Dam for the 1946-47 period discloses that storms occurred in late October and November, which is somewhat earlier than normal for this area. It was also interesting to note that while no major storms occurred during the early part of the 1950-51 season, stream flows averaged 9 to 10 cfs or greater during the period from mid-October until the end of December. This was also above average for this time of year. These observations would seem to indicate that if flow releases could be increased earlier in the season, during the critical salmon upstream migration period, there is a strong probability that king salmon could become reestablished in the stream sections above Van Arsdale Dam.

Water temperatures in conjunction with the amount of stream flow probably have a bearing on fish movement. It is known that the Eel River below Snow Mountain Station rises above 80°F. during summer low flow periods. It is logical to assume that cool fall weather and increased flows would bring the water temperatures down to acceptable levels for migrating salmon.

The upstream movement of steelhead in the vicinity of Snow Mountain Station generally begins after the crest of the storm flow. However, steelhead will occasionally start moving upstream when releases over Van Arsdale Dam start increasing, even though there has been no storm.

From January 30 through April 22, 1963, the number of fish in the trap was recorded each time the trap was checked (Table 2). Fish passage through the ladder at the trap was found to be greater during the period 2 PM through 9 PM with the highest average-rate-of-passage between 2 PM and 5 PM.

#### CONCLUSIONS

1. Total seasonal counts are on the increase after reaching a low of 1,130 steelhead in the 1960-61 season.
2. There were three periods of steelhead migration during each of the three seasons covered in this report.
3. There appears to be a relationship between rainfall and/or flow over Van Arsdale Dam and the start of the steelhead and king salmon upstream migration.
4. The highest average-rate-of-passage of steelhead through the trap during the 1962-63 season was found to be between 2 PM and 5 PM.

TABLE 2

Daily Steelhead Counts  
 Snow Mountain Egg Collecting Station  
 January 30 - April 22, 1963

<u>Date</u>	<u>8 AM</u>	<u>Noon</u>	<u>2 PM</u>	<u>5 PM</u>	<u>9 PM</u>	<u>Totals</u>
Jan. 30	7	1		2	16	26
Feb. 1				1	3	4
3				12		12
4	2				8	10
5				7		7
6	4			18	8	30
7	1			26	7	34
8	4	5		31	20	60
9	7			20		27
10	15	6			25	46
11				2		2
12				5	6	11
13		1		5	19	25
14	5	7		10	2	24
15		4		6		10
16	1	9		17	18	45
17	6			5	3	14
18			6	5		11
19				5	27	32
20	23		27	25	7	82
21			19	19	9	47
22	2		14		22	38
23	13			14	14	41
24		2	3	9	55	69
25	9	18	28	9	88	
26	29	11		8	16	64
27	22			10	4	36
28	8					8
Mar. 1	32					32
2	11			2		13
3	5					5
4	5					5
7				6		6
9				23		23

TABLE 2  
continued

<u>Date</u>	<u>8 AM</u>	<u>Noon</u>	<u>2 PM</u>	<u>5 PM</u>	<u>9 PM</u>	<u>Total</u>
Mar. 10				4		4
13	30			12		42
14	18					18
15				9		9
17			4			4
19	8			6		14
20	10		17	6		33
21	7			4		11
22	4					4
23				36	22	58
24	29		12	<u>1/</u>	<u>1/</u>	41
25	<u>1/</u>	77			54	131
26	20			30		50
27		29		20		49
28		24	16	15	5	60
29	18		10			28
30			31			31
31		10				10
Apr. 1	7			11	5	23
2				31	22	53
3				13	2	15
4				29	21	50
5	4	7		7	8	26
6	5			2		7
16	37					37
17		7		4	3	14
18				4		4
19				3		3
21				4		4
22	11					11
Total	419	218	187	567	440	1831

1/ Fish in trap at this time were retained to accumulate sufficient numbers to demonstrate sorting-counting procedure to visiting field-trip group.

APPENDIX 1

Snow Mountain Egg Collecting Station  
Steelhead Data, 1934 to 1960  
(inclusive)

Season	No. Ascending Ladder <sup>1/</sup>			Fish spawned		Eggs taken	Fish transferred to Lake Pillsbury or other waters		Source of data
	Male	Female	Total	Male	Female		Male	Female	
1933-34			3,247	534	589				Author of report unknown.
1934-35 <sup>2/</sup>	681	1,574	2,255	1,071	1,834				Author of report unknown.
1935-36 <sup>2/</sup>	3,123	3,187	6,310	649	472				Author of report unknown.
1936-37 <sup>2/</sup>			6,861			4,795,000			Author of report unknown.
1937-38			3,413			3,084,900			Author of report unknown.
1938-39 <sup>3/</sup>			4,786			2,615,950			Author of report unknown.
1939-40	1,266	2,623	3,889	202	254	1,204,400			Report by E.G. Sack.
1940-41 <sup>4/</sup>			2,225			1,808,401	98	98 100	Report by L. Gates on Aug. 3, 1947.
1941-42							93	112	Pillsbury Plants reported by E. G. Sack.
1942-43						1,024,000			From records of Earl Leitritz.
1943-44						1,302,000			From records of Earl Leitritz.
1944-45	3,107	6,421	9,528	150	253	1,138,600			Report by E. G. Sack.
1945-46	1,451	3,603	5,054	185	316	1,367,200			Report by E. G. Sack.
1946-47	1,501	2,902	4,402 <sup>5/</sup>			1,182,600			Letter from E. G. Sack on Aug. 3, 1948. "Eggs taken" from Leitritz's records.

APPENDIX 1  
(continued)

<u>Season</u>	<u>No. Ascending Ladder<sup>1/</sup></u>			<u>Fish spawned</u>		<u>Eggs taken</u>	<u>Fish transferred to Lake Pillsbury or other waters</u>		<u>Source of data</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>		<u>Male</u>	<u>Female</u>	
1947-48	27	151	178			75,600			Letter from E.G. Sack on Aug.3,1948. "Eggs taken" from Leitritz's records.
1948-49	1,010	1,423	2,433	172	217	1,005,600			Period of operation from Nov.1,1948 to Apr.20,1949.
1949-50						1,605,840			Eggs taken from Leitritz's records.
1950-51	321	770	1,091 <sup>6/</sup>	103	169	775,400			Report by E.G.Sack. Summary of log book 1951 by R.C. Tharratt.
1951-52	2,383	3,061	5,444	274	302	1,269,400	105	123	Summary of log book for 1952 by A. J. Cordone.
1952-53	722	1,475	2,197	187	213	935,824	148	196	Summary of log book for 1953 by A. J. Cordone.
1953-54	1,026	1,564	2,590	217	245	1,046,200	145	159	Summary of log book for 1954 by A. J. Cordone.
1954-55	3,173	2,958	6,131	309	233	1,174,213	152	153	Summary of log book for 1954 by R. C. Tharratt.
1955-56	1,577	2,142	3,719	258	447	1,876,170	237	248	Summary of log book for 1956 by R. C. Tharratt.
1956-57	1,743	2,366	4,109	349	607	2,458,223	246	270	Summary of daily record for 1956-57 by R. C. Tharratt.



APPENDIX 1  
(continued)

<u>Season</u>	<u>No. Ascending Ladder<sup>1/</sup></u>			<u>Fish spawned</u>		<u>Eggs taken</u>	<u>Fish transferred to Lake Pillsbury or other waters</u>		<u>Source of data</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>		<u>Male</u>	<u>Female</u>	
1957-58	2,223	2,928	5,151	164	391	1,758,538			Summary of daily record for 1957-58 by J. H. Rowell, Jr.
1958-59	1,305	2,030	3,335	87	329	1,661,870			Summary of daily record for 1958-59 by J. H. Rowell, Jr.
1959-60	696	1,510	2,206	62	232	1,083,194			Summary of daily record for 1959-60 by J. H. Rowell, Jr.

1/ Includes fish taken for spawning and fish passed over dam.

2/ Letter report from H. H. Hewitt April 11, 1938, gives the following data:

1935 - 523 males, 944 females, 1,467 total. Totals include those released above dam and those held in tank for spawning.

1936 - 1,464 males, 2,269 females, 3,733 total. Not exact because of release of some fish below dam that did not return.

1937 - 2,106 males, 3,316 females, 5,422 total. No records for April 1935.

3/ 243 males, 263 females, 506 total steelhead counted over Snow Mountain Dam during January 1939, according to letter from Hewitt on February 1, 1939.

4/ Report of L. Gates gives fish and egg take record (totals only) for 1941.

5/ Does not include 326 male and 591 female king salmon and 47 silver salmon (sexes combined) reported in letter from E. G. Sack, August 3, 1951.

6/ Does not include 17 male and 38 female king salmon over dam December 1, 1950.

APPENDIX 2

Snow Mountain Station, Mendocino County  
Daily Record of Fish Counted Through Station in 1960-1961 Season

<u>Date</u>	<u>Steelhead</u>			<u>King salmon</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Dec. 7	8	12	20			
12	1	4	5			
18	20	44	64	9		9
31	13	14	27			
Jan. 10	11	11	22			
24	8	12	20			
28	12	15	27			
30	32	27	59			
Feb. 1	28	31	59			
3	29	43	72			
4	19	33	52			
5	32	52	84			
7	26	74	100			
14	24	37	61			
15	12	38	50			
19	28	48	76			
21	5	10	15			
Mar. 10	19	25	44			
14	9	23	32			
17	31	48	79			
18	17	26	43			
22	15	37	52			
25	6	23	29			
Apr. 6	12	26	38			
Total	417	713	1,130	9	0	9

Station closed on April 22, 1961.

APPENDIX 3

Snow Mountain Station, Mendocino County  
Daily Record of Fish Counted Through Station in 1961-1962 Season

<u>Date</u>	<u>Steelhead</u>			<u>King salmon</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Jan. 31	23	26	49			
Feb. 8	40	39	79			
14	33	54	87			
15	80	114	194			

APPENDIX 3  
(continued)

<u>Date</u>	<u>Steelhead</u>			<u>King salmon</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Feb. 17	14	43	57			
21	47	74	121			
23	37	63	100			
Mar. 2	24	30	54			
7	18	34	52			
10	63	91	154			
13	53	73	126			
23	49	54	103			
27	54	100	154			
29	24	55	79			
31	24	78	102			
Apr. 2	20	51	71			
10	34	61	95			
14	3	9	12			
<b>Total</b>	<b>640</b>	<b>1,049</b>	<b>1,689</b>			

Station closed on April 14, 1962.

APPENDIX 4

Snow Mountain Station, Mendocino County  
Daily Record of Fish Counted Through Station in 1962-1963 Season

<u>Date</u>	<u>Steelhead</u>			<u>King salmon</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Nov. 27				2		2
28				2		2
Dec. 2	2	5	7	1		1
3	2		2			
7	4		4			
13		2	2		1	1
14	14	32	46	2		2
15	10	25	35		1	1
16	6	7	13			
17	10	5	15			
19	1	8	9			
20	2	6	8			
21		5	5			
23	6	14	20			
24	3	5	8			
Jan. 3	9	20	29			
30	10	15	25			

APPENDIX 4  
(continued)

<u>Date</u>	<u>Steelhead</u>			<u>King salmon</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Feb. 1	3	1	4			
3	4	8	12			
4	7	3	10			
5	3	4	7			
6	14	16	30			
7	17	16	33			
8	21	39	60			
9	7	20	27			
10	13	33	46			
11	1	1	2			
12	7	4	11			
13	3	22	25			
14	10	14	24			
15	3	7	10			
16	16	29	45			
17	4	10	14			
18	5	6	11			
19	8	24	32			
20	25	57	82			
21	14	34	48			
22	14	24	38			
23	15	26	41			
24	18	52	70			
25	26	62	88			
26	28	36	64			
27	11	25	36			
28	2	6	8			
Mar. 1	6	26	32			
2	2	11	13			
3		5	5			
4	2	3	5			
7	2	4	6			
9	7	16	23			
10	4		4			
13	12	30	42			
14	5	13	18			
15	3	6	9			
17		4	4			
19	4	10	14			
20	13	20	33			
21	4	7	11			
22	2	2	4			
23	18	40	58			
24	13	28	41			
25	32	99	131			
26	14	36	50			
27	15	34	49			

APPENDIX 4  
(continued)

<u>Date</u>	<u>Steelhead</u>			<u>King salmon</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Mar. 28	16	44	60			
29	7	21	28			
30	4	27	31			
31	1	9	10			
Apr. 1	6	17	23			
2	20	33	53			
3	4	11	15			
4	12	38	50			
5	5	17	22			
6	1	6	7			
16	5	32	37			
17		14	14			
18	2	2	4			
19	1	2	3			
20	2	2	4			
21	3	8	11			
Total	625	1,405	2,030	7	2	9

Station closed April 22. However, some steelhead continued to migrate as late as May 7.