ANNUAL FISH PASSAGE REPORT

COLUMBIA RIVER PROJECTS

BONNEVILLE **JOHN DAY**
THE DALLES **McNARY**

SNAKE RIVER PROJECTS

ICE HARBOR
LOWER MONUMENTAL
LITTLE GOOSE
LOWER GRANITE

OREGON AND WASHINGTON

1980

NORTH PACIFIC DIVISION
Corps of Engineers
Prepared by
U.S. Army Engineer Districts
Portland and Walla Walla

1980

ANNUAL FISH PASSAGE REPORT

COLUMBIA AND SNAKE RIVERS

for

salmon, steelhead and shad

Bonneville
The Dalles
John Day
McNary
Ice Harbor
Lower Monumental
Little Goose
Lower Granite

North Pacific Division
Corps of Engineers
prepared by
U.S. Army Engineer District
Portland and Walla Walla

TABLE OF CONTENTS

BONNEVILLE

Text	Page
Salmon Passage	1
Miscellaneous Species	1
Sturgeon	2
Bonneville Fish Counting Schedule	2
Fishway In-Service Periods	2
Fishway Activities	3
THE DALLES DAM	
Fish Passage	4
The Dalles Dam Fish Counting Schedule	4
Fishway In-Service Periods	4
Fishway Activities	4
JOHN DAY DAM	
Fish Passage	5
John Day Fish Counting Schedule	5
Fishway In-Service Periods	5
Fishway Activities	5-6
McNARY DAM	
Fish Passage	7
McNary Fish Counting Schedule	7
Fishway In-Service Periods	8
Fishway Activities	8

TABLE OF CONTENTS (CONTD)

ICE HARBOR DAM

Text	Page
Fish Passage	9
Ice Harbor Fish Counting Schedule	9
Fishway In-Service Periods	9
Fishway Activities	10

LOWER MONUMENTAL DAM

Fish Passage	11
Lower Monumental Fish Counting Schedule	11
Fishway In-Service Periods	11
Fishway Activities	11-12

LITTLE GOOSE DAM

Fish Passage	13
Little Goose Fish Counting Schedule	13
Fishway In-Service Periods	13
Fishway Activities	13

LOWER GRANITE

Fish Passage	14
Lower Granite Fish Counting Schedule	14
Fishway In-Service Periods	14
Fishway Activities	14-15

LIST OF TABLES

GENERAL

Table No.

1 Fish Escapement at main stem dams Columbia & Snake 1976-1980

BONNEVILLE DAM

2 Yearly totals of salmonid fish counted over Bonneville Dam 1938-1980

3 Monthly totals of salmonids and shad counted over Bonneville Dam 1938-1980

4-14 Daily river temperature, stream flow turbidity, salmonid and shad count data 1980

15 Peak days of fish migration - 1938-1980

16 Monthly count of chinook salmon - 1938-1980

17 Monthly count of sockeye salmon - 1938-1980

18 Monthly count of coho salmon - 1938-1980

19 Monthly count of steelhead trout - 1938-1980

20 Monthly count of shad and percent counted over fish ladders 1938-1980

THE DALLES DAM

21 Yearly totals of salmonid counted over The Dalles Dam 1957-1980

22 Monthly totals of salmonid and shad counted over The Dalles Dam 1980

23-31 Daily water temperature, turbidity, stream flow, salmonid and shad counted in 1980

32 Peak days of fish migration - 1957-1980

33 Monthly count of chinook salmon - 1957-1980

LIST OF TABLES (CONTD)

THE DALLES DAM

Table No.

34 Monthly count of sockeye salmon - 1957-1980

35 Monthly count of coho salmon - 1957-1980

36 Monthly count of steelhead trout - 1957-1980

JOHN DAY DAM

37 Yearly totals of salmonid counted over John Day Dam 1968-1980

38 Monthly totals of salmonids and shad counted over John Day Dam 1980

39-47 Daily river temperature, turbidity, stream flow, salmonid and shad counts over John Day Dam 1980

48 Monthly count of chinook salmon - 1968-1980

49 Monthly count of sockeye salmon - 1968-1980

50 Monthly count of coho salmon - 1968-1980

51 Monthly count of steelhead trout - 1968-1980

52 Peak days of migration 1968-1980

McNARY DAM

53 Yearly totals of salmonids counted over McNary Dam 1954-1980

54 Monthly totals of salmonids and shad counted over McNary Dam 1980

55-65 Daily water temperature, turbidity, stream flow, salmonid and shad count data 1980

66 Peak days of fish migration - 1954-1980

67 Monthly count of chinook salmon - 1954-1980

LIST OF TABLES (CONTD)

McNARY DAM

Table No.

68 Monthly count of sockeye salmon - 1954-1980

69 Monthly count of coho salmon - 1954-1980

70 Monthly count of steelhead trout - 1954-1980

ICE HARBOR

71 Yearly totals of salmonids counted over Ice Harbor Dam 1962-1980

72 Monthly totals of salmonids and shad counted over Ice Harbor Dam 1980

73-83 Daily water temperature, turbidity, stream flow, salmonid and shad count 1980

84 Peak days of fish migration - 1962-1980

85 Monthly count of chinook salmon - 1962-1980

86 Monthly count of steelhead trout - 1962-1980

LOWER MONUMENTAL DAM

87 Yearly totals of salmonids counted over Lower Monumental Dam 1969-1980

88 Monthly totals of salmonids and shad counted over Lower Monumental Dam - 1980

89-97 Daily water temperature, turbidity, stream flow salmonid and shad count 1980

98 Peak days of fish migration - 1969-1980

99 Monthly totals of chinook salmon - 1969-1980

100 Monthly count of steelhead trout - 1969-1980

LIST OF TABLES (CONTD)

LITTLE GOOSE DAM

Table No.

101 Yearly totals of salmonids counted over Little Goose Dam 1970-1980

102 Monthly totals of salmonids counted over Little Goose Dam 1980

103-111 Daily water temperature, turbidity, stream flow, salmonid and shad counts 1980

112 Peak days of fish migration - 1970-1980

113 Monthly totals of chinook salmon - 1970-1980

114 Monthly totals of steelhead trout - 1970-1980

LOWER GRANITE DAM

115 Yearly totals of salmonids counted over Lower Granite Dam 1975-1980

116 Monthly totals of salmonids counted over Lower Granite Dam 1980

117-127 Daily water temperature, turbidity, stream flow, salmonid and shad counts 1980

128 Peak days of fish migration - 1975-1980

129 Monthly totals of chinook counted over Lower Granite Dam 1975-1980

130 Monthly totals of steelhead trout counted over Lower Granite Dam 1975-1980

GENERAL

131 Fish facility operation and maintenance costs - 1980

LIST OF PLATES

Plate No.

1 Chinook Salmon - fish count 1980 - Ice Harbor, Lower Monumental, Little Goose and Lower Granite Dams.

2 Chinook Salmon - fish count 1980 - Bonneville, The Dalles, John Day and McNary Dams.

3 Sockeye (Blueback) Salmon - fish count 1980 - Ice Harbor, Lower Monumental, Little Goose and Lower Granite Dams.

4 Sockeye (Blueback) Salmon - fish count 1980 - Bonneville, The Dalles, John Day and McNary Dams.

5 Coho (Silver) Salmon - fish count 1980 - Ice Harbor, Lower Monumental, Little Goose and Lower Granite Dams.

6 Coho (Silver) Salmon - fish count 1980 - Bonneville, The Dalles, John Day and McNary Dams.

7 Steelhead Trout - fish count 1980 - Ice Harbor, Lower Monumental, Little Goose and Lower Granite Dams.

8 Steelhead Trout - fish count 1980 - Bonneville, The Dalles, John Day and McNary Dams.

9 Chinook Salmon migration periods - 1938-1980 - Bonneville Dam.

10 Sockeye (Blueback) migration periods - 1938-1980 - Bonneville Dam.

11 Coho (Silver) migration periods - 1938-1980 - Bonneville Dam.

12 Steelhead Trout migration periods - 1938-1980 - Bonneville Dam.

13 Daily river discharges, water temperature and turbidity readings - Bonneville Dam - 1980.

14 Daily river discharges, water temperatures and turbidity readings - The Dalles Dam - 1980.

15 Daily river discharges, water temperatures and turbidity readings - John Day Dam - 1980.

16 Daily river discharges, water temperatures and turbidity readings - McNary Dam - 1980.

LIST OF PLATES (CONTD)

Plate No.

17 Daily river discharges, water temperatures and turbidity readings - Ice Harbor Dam - 1980.

18 Daily river discharges, water temperatures and turbidity readings - Lower Monumental Dam - 1980.

19 Daily river discharges, water temperatures and turbidity readings - Little Goose Dam - 1980.

20 Daily river discharges, water temperatures and turbidity readings - Lower Granite Dam - 1980.

21 General site map - fish passing facilities - Bonneville Dam

22 General site map - fish passing facilities - The Dalles Dam

23 General site map - fish passing facilities - John Day Dam

24 General site map - fish passing facilities - McNary Dam

25 General site map - fish passing facilities - Ice Harbor Dam

26 General site map - fish passing facilities - Lower Monumental Dam

27 General site map - fish passing facilities - Little Goose Dam

28 General site map - fish passing facilities - Lower Granite Dam

ANNUAL FISH PASSAGE REPORT
COLUMBIA AND SNAKE RIVER PROJECTS
CALENDAR YEAR 1980

BONNEVILLE DAM

Salmon Passage

Totals of 455,750 salmonids (including 44 chum) and 939,390 shad were counted at Bonneville Dam in 1980. The most salmon recorded in one day was 12,653 on 7 September, of these, 9,989 were fall chinook, 702 were Coho, 1,730 were steelhead and 1 was a sockeye. Counts were made of salmonids (unidentified as to species) under 12 inches in 1980. Totals of 10,179 salmonids under 12 inches were counted in 1980.

A brief summary of salmonid counts is shown below.

Species	1980 Count	43 Year Average
Spring Run Chinook	60,987	95,152
Summer Run Chinook	31,065	60,248
Fall Run Chinook	153,466	202,136
Chinook Jacks	37,748	50,288
Sockeye	58,882	89,132
Chum	44	-
Pink	-	-
Steelhead	129,254	140,965
Coho (Total)	22,052	27,769
Coho Jacks	9,078	24,134*

* 14 year average

Miscellaneous Species

Species other than salmonids and shad were disregarded in the 1980 fish counts. The greatest daily total of shad at Bonneville was 63,964 on 21 June.

Bonneville (cont'd)

Sturgeon

There were 27 sturgeon reported passing up the Bradford Island Ladder and one sturgeon passing down. On the Washington Shore Ladder, 5 were counted.

Bonneville 1980 Fish Counting Schedule

1 January - 14 March	No counting.
1 January - 16 January	Powerhouse collection system out of service for maintenance.
25 February - 29 February	Washington Shore fish ladder out of service to clean out trash.
29 February - 7 March	Powerhouse collection system out of service to clean the bubbler.
15 March - 31 March	Both ladders counted for one 8 hour shift each, 0800 to 1600 Pacific Standard Time Counting was 50 minutes an hour with a 1.2 factor applied to actual count to compensate for rest period.
1 April - 31 October	Both ladders counted for two 8 hour shifts each from 0400-2000 Pacific Standard Time.
1 November - 15 November	Both ladders counted for one 8 hour shift each from 0800 - 1600 Pacific Standard Time.
17 November - 31 December	Washington Shore fish ladder out of service for an overhaul.
16 November - 31 December	No counting.

Fishway 1980 In-Service Periods

Bradford Island "B" Branch	In service 1 January - 31 December
Bradford Island "A" Branch	Out of service 1 January - 16 January for maintenance. In service 17 January - 28 February. Out of service 29 February - 7 March to clean bubbler. In service 8 March - 31 December

Bonneville (cont'd)

Washington Shore Fish Ladder	In service 1 January - 24 February. Out of service 25 February - 29 February to clean out trash. In service 1 March - 16 November. Out of service 17 November - 31 December for an overhaul.

Fishway Activities

The Oregon Department of Fish and Wildlife operated and evaluated the first powerhouse ice-trash sluiceway as a bypass for juvenile salmonids. They also trapped and collected eggs for the bright fall chinook bank.

National Marine Fisheries Service used the north shore fisheries lab to evaluate adult returns from the fingerling transportation program. Other studies were concerned with delayed mortality of transported juvenile salmon and an evaluation of the first powerhouse intake and ice-trash sluiceway

THE DALLES DAM

Fish Passage

A total of 256,328 salmonids and 1,160,752 shad were counted over The Dalles Dam in 1980. The greatest number of salmonids in any one day was 4,869 on 7 September, of these 2,598 were fall chinook, 151 were coho and 1,908 were steelhead.

Species other than salmonids and shad were disregarded in the fish counts of 1980. Counts were made of salmonids (unidentified as to species) under 12 inches. A total of 12,366 salmonids under 12 inches was counted in 1980 The greatest number of shad in one day was 69,478 on 21 June.

The Dalles Dam 1980 Fish Counting Schedule

1 January - 31 March	No counting.
1 April - October 31	Two counters on duty 16 hours daily from 0400 to 2000 Pacific Standard Time. Counting was 50 minutes each hour with a 1.2 factor applied to compensate for the rest period.
1 November - 31 December	No counting.

Fishway 1980 In-Service Periods

East Fish Ladder	In service 1 January - 3 February, 1 March - 8 December and 19 December - 31 December. Out of service 4 February - 29 February and 9 December - 18 December.
North Fish Ladder	In service 1 January - 30 November and 10 December - 31 December. Out of service 1 December - 9 December.

Fishway Activities

Fish turbine #1 was out of service 28 January, 29 February, 13 August and 27 December - 31 December. Fish turbine #2 was out of service 1 January - 22 January, 16 June - 17 June, 8 July, 16 July and 22 July.

Portland District, Corps of Engineers, trapped adult spring chinook for radio tagging and release. The Oregon Department of Fish and Wildlife operated and evaluated the ice-trash sluiceway as a juvenile salmon bypass.

JOHN DAY DAM

Fish Passage

A total of 231,463 salmonids (including 1 pink) and 638,037 shad were counted over John Day Dam in 1980. The largest count of salmonids for one day was 5,507 on 6 July, of these 879 were chinook, 3,959 were sockeye and 52 were steelhead The largest count of shad for one day was 32,756 on 24 June In 1980 counts were made of salmonids (unidentified as to species) under 12 inches A total of 2,130 salmonids under 12 inches was counted.

John Day Dam Fish Counting Schedule

1 January - 31 March	No counting
1 April - 31 October	Two counters on duty on each of two shifts, from 0400 to 2000 Pacific Standard Time. Counting was for 50 minutes an hour with a 1.2 factor applied each hour to compensate for the rest periods.
1 November - 31 December	No counting.

Fishway In-Service Period

North Shore Fish Ladder	In service 1 January - 1 December and 13 December - 31 December. Ladder out of service 2 December - 16 December.
South Shore Fish Ladder	In service 1 January and 12 January - 31 December. Ladder out of service 2 January - 11 January.

Fishway Activities

In the north ladder fish pump #1 was out of service 3 December - 17 December for annual maintenance and to change the oil. Fish pump #2 was out of service 3 December - 17 December for annual maintenance and to change the oil. Fish pump #3 was out of service 3 December - 16 December for annual maintenance and 19 December to change the oil. Fish pump #4 was out of service 1 January - 2 January and 3 December - 16 December for annual maintenance and 19 December to change the oil. Fish pump #5 was out of service 2 January - 7 January and 3 December - 16 December for annual maintenance and 17 December - 19 December to change the oil. Fish pump #6 was out of service 3 December - 19 December for annual maintenance.

In the south ladder fish turbine #1 was out of service 2 January - 7 March for annual maintenance and 20 - 21 August and 23 - 25 August Fish turbine #2 was out of service 2 January - 7 March for annual maintenance Fish turbine #3 was out of service 2 January - 7 March for annual maintenance and 2 December - 4 December for repairs.

John Day (cont'd)

Portland District, Corps of Engineers, conducted radio tracking studies to evaluate the powerhouse fish collection system. The District also conducted sonar monitoring as part of the special spill program to pass downstream migrating juvenile salmonids.

National Marine Fisheries Service monitored juvenile salmonids entering the gatewalls and conducted radio tracking of juvenile salmon in the forebay to study their behavior.

McNARY DAM

Fish Passage

A total of 192,169 salmonids was counted over McNary Dam in 1980. The greatest number of salmonids in one day was 4,202 on 12 July, of this number 3,302 were sockeye, 837 were summer chinook and 63 were steelhead.

A total of 275,223 shad was counted in 1980. The greatest number of shad counted in one day was 20,633 on 29 June. In 1980, salmonids (unidentified as to species) under 12 inches were counted. A total of 3,652 salmonids under 12 inches was counted.

McNary Fish Counting Schedule

1 January - 18 February	Washington and Oregon ladders in operation. No counting.
19 February - 21 February	Washington ladder unwatered for maintenance. Oregon ladder in operation. No counting.
22 February - 24 February	Washington and Oregon ladders in operation. No counting.
25 February - 27 February	Washington ladder in operation, Oregon ladder unwatered for maintenance. No counting.
28 February - 29 February	Both ladders in operation. No counting.
1 March - 31 March	Both ladders in operation. Fish counting 8 hours a day from 0800 to 1600 hours with the fish counter counting direct visual on the Oregon ladder and TV from the Washington ladder. Counting done 50 minutes per hour.
1 April - 31 October	Both ladders in operation. Counting 0400 - 2000 hours Pacific Standard Time.
1 November - 16 November	Both ladders in operation. Fish counting from 0800 to 1600 hours.
17 November - 30 November	Washington ladder was unwatered for repair to water intake structures of the diffusers. Counting continued on the Oregon ladder from 0800 to 1600 hours.
1 December - 31 December	Washington ladder continued out of service. Oregon ladder in operation. No fish counting.

McNary (cont'd)

Fishway In-Service Periods

Washington Ladder	1 January - 18 February 22 February - 16 November
Oregon Ladder	1 January - 24 February 28 February - 31 December

Fishway Activities

One 8-hour counting shift was conducted from 1 March through 31 March and from 1 November to 30 November from 0800 to 1600 hours due to dredging below Ice Harbor dam.

Two 8-hour counting shifts were conducted from 1 April to 31 October from 0400 to 2000 hours Pacific Standard Time. The Oregon ladder was counted by direct observation and the Washington ladder was counted using closed circuit TV.

National Marine Fisheries Service had an adult fish trap installed in the Washington ladder that was used throughout the year to determine the return of marked fish.

The Washington Ladder was removed from service on 17 November to make repairs on the diffuser water intake system

ICE HARBOR DAM

Fish Passage

A total of 65,032 salmonids were counted at Ice Harbor Dam in 1980. The greatest number of salmonids in one day was 1,608 on 28 September, of this number 68 were fall chinook, 3 were coho and 1,531 were steelhead

A total of 2,857 shad was counted in 1980. The greatest number of shad in one day was 814 on 14 July. Counts were made of salmonids (unidentified as to species) under 12 inches. A total of 1000 salmonids under 12 inches was counted in 1980.

Ice Harbor Fish Counting Schedule

1 January - 19 February	North ladder in operation. South ladder unwatered for annual maintenance and weir modification contract work.
20 February - 29 February	North and south ladders in operation. No counting.
1 March - 13 March	North and south ladders in operation. Counting 0800-1600 hours daily.
14 March	South ladder in operation. North ladder unwatered for cleaning. Counting 0800-1600 hours daily.
15 March - 31 March	North and south ladders in operation. Counting 0800-1600 hours daily.
1 April - 31 October	North and south ladders in operation. Full count by manual counting on south ladder. Remote closed circuit color television on the north ladder. Two 8-hour shifts per day, 50-minutes per hour, from 0400 to 2000 hours Pacific Standard Time.
1 November - 30 November	North and south ladders in operation. Counting 0800-1600 hours daily.
1 December - 31 December	North and south ladders in operation. No counting.

Fishway in-service Periods

North ladder	1 January - 13 March 14 March - 31 December

Fishway in-service Periods (Ice Harbor cont'd)

South Ladder 20 February - 31 December

Fishway Activities

Special count one shift per day, 50 minutes per hour from 0800 - 1600 hours Pacific Standard Time from 1 March through 31 March and 1 November through 30 November due to dredging.

Two 8-hour counting shifts were conducted each day throughout the fish counting season. Fish counters counted 50-minutes per hour from 0400 to 2000 hours (PST) daily One counter was used to count both ladders by manual counting on the south shore, with closed circuit color television coverage of the north shore counting window.

Both ladders were out of service during the winter for weir modifications and annual maintenance. The counting season was increased two months from 1-31 March and 1-30 November to determine the effect on fish of dredging of the navigation channel below Ice Harbor.

The south shore ladder was unwatered on 29 November, 1979 through 19 February 1980 to complete the modification of fish ladder weirs.

Stoplogs remain in place in Spillway Bay No. 1 at the request of fisheries agencies to assist in the passage of fingerlings.

Sluice way gate 4C was opened on 1 May to assist passage of fingerlings, at the request of fisheries agencies. Gate was closed on 23 September.

LOWER MONUMENTAL DAM

Fish Passage

A total of 45,328 salmonid was counted over Lower Monumental in 1980. The greatest number of salmonid in one day was 1,245 on 30 September, of this number 57 were fall chinook, 6 were coho and 1,181 were steelhead.

A total of 4,584 shad was counted in 1980. The greatest number counted in one day was 279 on 18 July. Counts were made of salmonids (unidentified as to species) under 12 inches in 1980. A total of 120 salmonids under 12 inches was counted in 1980.

Lower Monumental Fish Counting Schedule

1 January - 5 January	North and south ladders in operation. No counting.
6 January - 20 February	South ladder in operation. North ladder unwatered for annual maintenance. No counting.
20 February - 18 March	North and south ladders in operation. No counting.
19 March - 20 March	North ladder in operation. South ladder unwatered for cleaning. No counting.
21 March - 1 April	North and south ladders in operation. No counting.
1 April - 31 October	North and south ladders in operation. Full count by manual counting on the north ladder and remote closed circuit color television on south ladder. Two 8-hour shifts per day, 50-minutes per hour from 0400 to 2000 hours, Pacific Standard Time.
1 November - 31 December	North and south ladders in operation. No counting.

Fishway in-service Periods

North ladder	1 January - 5 January 20 February - 31 December
South ladder	1 January - 19 March 20 March - 31 December

Fishway Activites

Two 8-hour counting shifts were conducted each day throughout the normal fish counting season. Fish counters counted 50-minutes per hour from 0400 to 2000 hours (PST) daily. One counter was used to count both ladders by manual counting on the north shore with closed circuit color television coverage of the south shore counting window.

Lower Monumental (cont'd)

Both ladders were out of service during the winter for annual maintenance.

Stoplogs were removed from Spillway Bay No. 8 and installed in Spillway No. 7 on 30 April at the request of fisheries agencies to assist in the passage of fingerlings and remain in place.

LITTLE GOOSE DAM

Fish Passage

A total of 49,444 salmonids was counted over Little Goose Dam in 1980 The greatest number for any one day was 1,117 on 30 September, of this number 24 were fall chinook, 1 was a coho and 1,088 were steelhead.

A total of 614 shad was counted over Little Goose Dam in 1980. The greatest number of shad counted in one day was 36 on 15 July. Counts were made of salmonids (unidentified as to species) under 12 inches in 1980. A total of 294 salmonids under 12 inches was counted

Little Goose Fish Counting Schedule

1 January - 29 January	Ladder in service. No counting.
30 January - 8 February	Ladder unwatered for annual maintenance. No count.
9 February - 31 March	Ladder in service No count
1 April - 31 October	Full count by manual counting. Two 8-hour shifts per day, 50 minutes per hour, from 0400 to 2000 hours Pacific Standard Time.
1 November - 31 December	Ladder in operation. No count.

Fishway In-Service Period

1 January - 29 January

9 February - 31 December

Fishway Activities

Two 8-hour counting shifts were conducted each day throughout the normal fish counting season from 1 April through 31 October Fish were counted 50 minutes per hour from 0400 to 2000 hours Pacific Standard Time.

The fish ladder was out of service from 30 January through 8 February for annual maintenance. Fish pump #1 was out of service from 10 January until 6 March for annual maintenance. Fish pump #2 was out of service from 10 January until 6 March for annual maintenance, on 18 March for 3 hours to change turbine bearing oil and replace the packing and on 15 and 16 April to replace the turbine packing Fish pump #3 was out of service from 10 January until 6 March for annual maintenance.

LOWER GRANITE DAM

Fish Passage

A total of 51,579 salmonids were counted over Lower Granite Dam in 1980. The greatest number of salmonids in any one day was 962 on 3 October, of that number 17 were fall chinook, 4 were coho and 935 were steelhead

A total of 308 shad were counted in 1980 The greatest number of shad in any one day was 57 on 11 August. Counts were made of salmonids (unidentified as to species) under 12 inches in 1980 A total of 396 salmonids under 12 inches was counted.

Lower Granite Fish Counting Schedule

1 January - 31 January	Ladder unwatered for annual maintenance. No count.
1 February - 29 February	Ladder in service. No count.
1 March - 31 March	One 8-hour manual count per day, 0800 to 1600 hours.
1 April to 31 October	Full count by manually counting. Two 8-hour shifts per day, 50 minutes per hour, from 0400 to 2000 hours Pacific Standard Time.
9 May	Ladder unwatered for 5 hours for repairs.
1 November - 30 November	One 8-hour manual count per day, 0800 to 1600 hours.
10 December - 31 December	Ladder in service. No count

Fishway In-Service Period

1 February - 9 May	
9 May	Ladder unwatered for 5 hours for work on diffuser #14 grating.
9 May - 31 December	

Fishway Activity

Two 8-hour counting shifts were conducted each day from 1 April - 31 October, 50 minutes per hour, from 0400 to 2000 hours Pacific Standard Time. One 8-hour shift from 0800 to 1600 hours was conducted from 1 March - 31 March and from 1 November - 30 November.

The fish ladder was out of service from 1 January - 31 January for annual maintenance. The ladder was out of service for 5 hours on 9 May for work on the diffuser #14 grating.

Lower Granite (cont'd)

Fish pumps #1 was out of service from 1 January to 7 March for annual maintenance and on 26 and 27 March because of excessive oil temperature on the lower guide bearing. It was also out of service on 27 and 28 March for repair of the brake air valve and from 7 May to 31 December because of broken gear teeth in the reduction gear Fish pump #2 was out of service from 1 January to 9 May for annual maintenance and to install the discharge bulkhead. It was also out of service from 11 July to 1 August and on 4 and 5 August because of excessive oil temperatures on the lower guide bearing. Fish pump #3 was out of service from 1 January to 10 March for annual maintenance and on 8 and 9 May for further maintenance.

TABLE 1
FISH ESCAPEMENT AT MAIN STEM DAMS
COLUMBIA & SNAKE RIVERS 1976 to 1980

1976										
CHINOOK*	507 773	216 163	175 911	163 314	36 556	34 395	37 339	[illegible]	19 [illegible]	31 6[illegible]
Spring*	113 448	56 570	45 418	38 505	25 056	24 372	2 385	13 306	3 3[illegible]	20 [illegible]
Summer*	69 013	38 733	36 037	36 818	10 026	7 938	8 906	19 34[illegible]	10 099	9 89[illegible]
Fall*	325 312	120 860	94 [illegible]55	87 991	1 474	2 085	1 065	10 774	6 152	1 298
Jacks	142 866	74 275	62 793	83 130	[illegible] 332	7 846	7 060	9 26	8 957	8 001
STEELHEAD	124 177	82 568	59 808	54 000	23 885	21 87[illegible]	20 894	9 2[illegible]8	5 688	13 017
SOCKEYE	43 611	27 747	30 446	24 632	771	364	6[illegible]	32 810	27 205	531
COHO*	53 150	19 392	5 808	7 539	1 991	361	733	2 275	5 303	900
Adults	36 666	6 309	4 061	3 370	409	214	323	778		[illegible]
Jacks	16 484	13 083	1 745	4 169	1 382	147	410	1 497		[illegible]5[illegible]
SHAD	305 219	508 876	193 000	70 [illegible]92	5 485	194	1	6 435	0	0
1977										
CHINOOK*	366 657	224 950	194 [illegible]31	165 581	[illegible]	49 [illegible]	49 [illegible]74	47 478	[illegible]5 905	49 123
Spring*	11[illegible] 508	90 373	75 782	66 934	4[illegible] 421	39 171	39 555	21 217	6 211	38 770
Summer*	41 023	44 378	29 194	32 277	10 337	8 183	8 365	19 605	13 496	8 [illegible]29
Fall*	206 126	90 199	89 955	84 370	1 756	1 947	1 256	6 856	6 198	1 924
Jacks	84 988	55 067	60 386	55 228	3 396	3 440	3 573	6 795		4 497
STEELHEAD	193 437	133 882	102 558	87 712	54 820	47 769	47 388	9 804	7 [illegible]14	53 037
SOCKEYE	99 829	86 252	85 701	80 781	582	293	574	95 412	25 648	458
COHO*	19 408	10 021	1 123	4 622	1 561	122	438	370	927	268
Adults	9 325	3 925	858	1 788	229	44	109	182		[illegible]6
Jacks	10 083	6 096	265	2 834	1 332	78	329	188		222
SHAD	495 723	856 507	476 407	432 7[illegible]9	41 192	3 362	10	26 515	0	25
1978										
CHINOOK*	394 600	199 228	174 852	144 148	61 352	58 835	56 069	44 377	19 551	54 246
Spring*	149 863	84 924	72 723	68 414	49 303	47 342	44 327	21 427	7 317	41 006
Summer*	[illegible]4 323	34 396	30 371	31 589	10 440	8 480	10 471	16 461	9 461	11 355
Fall*	200 414	79 908	71 758	44 145	1 609	1 013	1 271	6 489	2 773	1 485
Jacks	62 269	32 503	36 289	20 670	994	996	1 156	3 429	3 247	1 216
STEELHEAD	104 431	60 485	44 188	34 740	27 142	20 540	24 927	4 288	2 454	30 068
SOCKEYE	18 436	11 845	13 778	18 511	86	96	168	12 009	8 155	123
COHO*	52 590	18 877	8 355	20 356	652	218	307	597	1 438	152
Adults	30 278	5 344	1 055	4 653	159	88	146	157		25
Jacks	22 312	13 533	7 300	15 703	493	130	161	440		127
SHAD	861 16[illegible]	1 234 723	629 005	380 727	16 278	1 620	2	21 704	0	0
1979										
CHINOOK*	275 968	150 647	118 154	95 275	13 929	11 288	12 515	38 166	14 891	12 548
Spring*	51 124	27 297	21 981	21 153	9 247	7 921	7 880	7 750	2 186	7 539
Summer*	34 217	32 298	23 572	24 161	2 608	2 083	3 445	22 689	9 986	3 572
Fall*	190 627	91 052	72 601	49 961	2 074	1 284	1 190	7 727	2 719	1 437
Jacks	55 955	42 886	41 364	25 442	2 422	1 916	1 982	5 603	3 608	2 578
STEELHEAD	113 979	83 364	55 877	50 304	23 117	17 794	21 049	8 415	4 896	25 046
SOCKEYE	52 628	32 791	43 630	37 792	30	31	72	45 662	28 747	25
COHO*	45 328	8 726	5 061	12 800	398	194	390	311	344	158
Adults	29 612	3 890	3 891	6 519	125	120	200	272		50
Jacks	15 716	4 836	1 170	6 281	273	74	190	39		108
SHAD	1 039 857	1 398 224	646 187	361 024	10 489	4 908	121	20 196	0	75
1980										
CHINOOK*	245 318	113 951	100 664	80 773	14 717	10 885	10 605	38 286	10 163	10 986
Spring*	60 897	28 237	27 202	23 001	9 668	7 259	6 850	11 136	2 033	6 758
Summer*	31 063	21 133	19 664	18 862	3 305	2 712	3 057	18 708	6 068	3 447
Fall*	153 466	64 581	53 798	38 910	1 744	914	698	8 442	2 062	781
Jacks	37 748	20 016	25 877	17 564	2 934	2 214	1 772	7,727	2 139	2 385
STEELHEAD	129 254	93 963	78 199	66 524	50 221	34 322	38 627	8 506	4 345	40 454
SOCKEYE	58 882	72 088	50 675	44 301	36	48	88	52 055	29 906	96
COHO*	22 052	6 326	1 924	571	58	73	124	316	713	43
Adults	12 974	3 356	1 016	307	50	61	89	148		30
Jacks	9 078	2 970	908	264	8	12	35	168		13
SHAD	939 390	1 160 752	638 037	275 223	2 857	4 834	614	23 701	0	308
Assumed Dates for Chinook Runs										
Spring	15 Mar** 31 May	1 Apr 3 June	1 Apr 5 June	1 Mar** 8 June	1 Apr- 11 June	1 Apr- 13 June	1 Apr** 15 June	1 Apr** 13 June	17 Apr** 19 June	1 Apr** 17 June
Summer	1 June 31 July	4 June 3 Aug	6 June- 5 Aug	9 June 8 Aug	12 June 11 Aug	14 June 13 Aug	16 June 15 Aug	14 June 13 Aug	20 June- 19 Aug	18 June 17 Aug
Fall	1 Aug 15 Nov	4 Aug 31 Oct**	6 Aug 31 Oct	9 Aug- 30 Nov**	12 Aug 30 Nov**	14 Aug 31 Oct	16 Aug- 31 Oct**	14 Aug 15 Nov**	20 Aug 20 Nov**	18 Aug 30 Nov**

* Includes Jack counts Fish classified as jacks are under 22 inches in length

** Current Schedule May vary for previous years

TABLE 2

YEARLY TOTALS OF SALMONID FISH COUNTED OVER BONNEVILLE DAM

1938 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Chum	Pink	Total Salmonid
1938	271,799	107,003	75,040	15,185	2,117		471,144
1939	286,189	122,032	73,382	14,383	1,168		497,154
1940	391,587	185,174	148,807	11,917	1,729		739,214
1941	461,443	118,089	65,741	17,911	5,269	4	668,457
1942	401,942	151,800	55,464	12,402	1,865	11	623,484
1943	313,123	92,133	39,845	2,547	788		448,436
1944	240,764	100,518	15,072	4,207	954	1	361,516
1945	297,478	120,133	9,501	790	728	1	428,631
1946	446,052	142,807	74,376	3,898	1,178	2	668,313
1947	480,377	135,444	171,139	11,174	199	3	798,336
1948	419,555	139,062	131,541	4,081	3,636	2	697,877
1949	277,697	119,285	51,444	1,004	2,028	6	451,464
1950	357,375	114,087	77,993	10,151	1,069	8	560,683
1951	331,788	140,689	169,428	5,201	1,044	7	648,157
1952	420,879	260,990	184,645	7,768	1,505	9	875,796
1953	332,479	223,914	235,215	13,018	1,728	10	806,364
1954	320,947	176,260	130,107	4,062	1,569	4	632,949
1955	359,853	198,411	237,748	3,725	318	9	800,064
1956	300,917	131,116	156,418	6,127	693	4	595,275
1957	403,286	139,183	82,915	4,675	569	12	630,640
1958	426,419	131,437	122,389	3,673	455	6	684,379
1959	345,028	129,026	86,560	2,695	906	22	564,237
1960	256,049	113,676	59,713	3,268	1,026		433,732
1961	281,980	139,719	17,111	3,456	896	12	443,174
1962	286,625	164,025	28,179	14,788	1,013	27	494,657
1963	278,560	129,418	60,319	12,658	739	34	481,728
1964	344,422	117,252	99,856	53,602	632	45	615,809
1965	317,957	166,453	55,125	76,032	496	64	616,127
1966	340,111	143,661	156,661	71,891	872	58	713,254
1967	366,237	121,872	144,158	96,488	352	50	729,157

TABLE 2 (CONTD)

YEARLY TOTALS OF SALMONID FISH COUNTED OVER BONNEVILLE DAM

1938 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Chum	Pink	Total Salmonid
1968	341,154	106,974	108,207	63,488	79	21	619,923
1969	507,543	140,782	59,636	49,378	143	86	757,568
1970	384,780	113,510	70,762	80,116	209	150	649,527
1971	405,702	193,966	87,447	75,989	29	176	763,309
1972	394,456	185,886	56,323	65,932	1	51	702,649
1973	398,635	157,823	58,979	54,609	43	12	670,101
1974	366,759	137,054	43,837	60,955	23	2	608,630
1975	425,566	85,540	58,212	58,307	11	309	627,945
1976	507,773	124,177	43,611	53,150	11	2	728,724
1977	366,657	193,437	99,829	19,408	17	-	679,348
1978	394,600	104,431	18,436	52,590	28	-	570,085
1979	275,968	113,979	52,628	45,328	1	23	487,927
1980	245,518	129,254	58,882	22,052	44		455,750
Total	15,374,029	6,061,482	3,832,681	1,194,079	38,180	1,243	26,501,694
43-Year Average	357,536	140,965	89,132	27,769			616,318

TABLE 3

TABLE 3

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER BONNEVILLE DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	535	30,732	29,720	15,384	15,681	26,106	118,669	8,404	287	-	245,518
STEELHEAD	-	-	1,139	3,378	1,409	7,790	28,448	51,073	32,277	3,233	507	-	129,254
SOCKEYE	-	-	-	-	-	22,949	35,764	164	4	1	-	-	58,882
COHO	-	-	-	-	-	-	10	781	13,601	3,327	4,333	-	22,052
CHUM	-	-	-	-	-	-	-	-	1	4	39	-	44
PINK	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	1,674	34,110	31,129	46,123	79,903	78,124	164,552	14,969	5,166	-	455,750
SHAD	-	-	-	-	1,460	766,473	170,705	685	51	15	1	-	939,390

TABLE 4
WATER TEMPERATURE AND STREAM FLOW DATA
BONNEVILLE - 1980

DATE	JANUARY			FEBRUARY		
	WATER TEMP.	STREAM FLOW	TURBIDITY	WATER TEMP.	STREAM FLOW	TURBIDITY
1	44	119,000	5.0	36	169,100	2.4
2	44	129,000	5.0	36	138,300	2.4
3	44	133,100	5.0	36	137,200	2.4
4	44	131,100	5.0	36	138,200	4.0
5	43	151,200	5.0	36	130,000	4.0
6	36	133,200	4.0	36	134,800	4.0
7	41	185,000	5.0	37	137,300	1.8
8	41	179,300	5.0	37	159,000	1.4
9	39	218,900	5.0	38	155,500	1.4
10	39	204,500	5.0	38	132,800	0.9
11	37	190,900	1.1	37	134,200	1.1
12	39	156,500	5.0	36	159,300	1.5
13	37	154,500	1.5	37	180,700	1.5
14	40	175,000	1.5	36	195,400	1.5
15	40	182,500	5.0	35	219,700	1.5
16	40	187,200	1.2	35	139,800	1.5
17	40	151,600	0.5	35	135,100	1.5
18	40	136,900	0.5	37	137,000	1.4
19	39	166,900	1.4	37	137,300	1.4
20	37	144,600	1.4	37	136,700	1.4
21	38	148,500	0.5	38	171,700	1.4
22	38	165,600	0.5	39	190,800	1.4
23	38	171,100	0.5	38	135,400	1.4
24	38	150,600	0.5	38	132,400	1.4
25	38	136,000	0.5	38	133,200	1.0
26	38	185,200	0.5	38	138,900	1.0
27	38	151,600	0.5	38	186,200	0.9
28	37	186,600	0.5	39	159,700	0.6
29	37	225,500	0.5	39	171,200	0.8
30	36	200,400	1.6			
31	36	181,600	2.4			

TABLE 5

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 5

BONNEVILLE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MAR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1										151.7	18.0	.8	39.0
2										132.5	.0	.6	39.0
3										132.5	.0	.6	40.0
4										180.2	42.8	.6	40.0
5										216.8	71.9	.7	41.0
6										185.9	42.8	1.4	41.0
7										187.4	42.5	1.4	41.0
8										144.1	5.0	1.4	41.0
9										138.0	.0	1.4	41.0
10										138.8	.0	1.9	41.0
11										167.6	27.9	1.9	41.0
12										205.2	59.5	1.9	42.0
13										217.7	70.7	1.9	42.0
14										195.1	48.0	1.0	42.0
15	1							16		141.3	2.1	1.4	42.0
16	-1							55		142.7	.0	1.0	43.0
17	1							58		158.3	15.9	1.4	43.0
18	1							68		163.2	18.5	1.4	43.0
19	1							73		146.6	5.1	1.4	43.0
20	3			1				74		141.8	.0	1.4	45.0
21	27							150		141.1	.0	2.0	45.0
22	14							48		139.2	.0	2.0	45.0
23	19							84		138.1	.0	2.0	43.0
24	32							69		140.3	.0	2.5	46.0
25	81			2				95		131.0	.0	2.0	46.0
26	35							72		119.3	.0	2.0	46.0
27	70							51		132.2	.0	2.0	46.0
28	71			1				68		130.2	.0	2.0	46.0
29	43							74		135.8	.0	2.0	46.0
30	71			1				46		139.2	.0	2.0	46.0
31	60			1				38		137.5	.0	2.0	46.0
TOTALS	529			6				1139					
AVERAGES	31			1				67		153.9	15.2		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 6

BONNEVILLE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	198							61		136.3	.0	2.2	47.0
2	166			4				100		135.3	.0	2.2	45.0
3	132			8				104		134.5	.0	2.4	45.0
4	194			5				117		136.6	.0	2.5	46.0
5	293			2				171		135.8	.0	2.5	46.0
6	393			0				144		121.9	.0	2.5	47.0
7	471			6				141		120.8	.0	2.5	47.0
8	319			2				159		153.8	33.6	2.5	48.0
9	305			6				155		165.3	38.6	3.0	48.0
10	429			13				161		174.0	47.6	2.0	49.0
11	408			22				172		176.2	48.3	2.5	49.0
12	785			54				125		120.8	.0	3.0	48.0
13	1045			68				152		117.6	.0	3.0	49.0
14	1435			73				94		114.4	.0	3.6	49.0
15	969			41				115		124.1	2.8	3.6	49.0
16	1286			42				213		172.1	46.3	3.6	49.0
17	1614			49				158		150.8	23.8	3.0	50.0
18	972			68				128		176.2	49.2	3.0	50.0
19	1290			54				118		144.6	16.7	2.8	50.0
20	810			59				75		142.1	18.9	3.0	51.0
21	1369			81				103		192.5	63.8	3.0	51.0
22	1147			79				88		206.5	73.9	3.0	51.0
23	1408			124				78		225.4	99.1	2.5	51.0
24	1378			100				86		244.5	109.4	2.0	51.0
25	1400			142				81		219.0	78.4	2.0	52.0
26	1341			119				54		184.8	39.1	2.0	52.0
27	2181			222				59		149.2	8.0	2.0	52.0
28	2440			225				52		205.0	57.6	2.0	54.0
29	1438			156				58		241.0	90.7	2.0	54.0
30	1107			187				56		296.5	143.8	2.0	55.0
TOTALS	28721			2011				3378					
AVERAGES	957			69				113		167.3	36.3		

TABLE 7

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 7 — BONNEVILLE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	1132			234				63		263.1	110.8	2.0	56.0
2	1117			247				79		268.7	116.8	2.0	55.0
3	945			270				27		263.1	112.4	2.0	57.0
4	1453			319				52		229.6	79.6	2.0	57.0
5	1948			347				49		245.7	95.3	2.0	57.0
6	1648			374				51		269.1	117.6	2.0	57.0
7	1407			261				50		297.1	144.0	2.0	58.0
8	1033			231				48		298.6	146.4	2.0	58.0
9	1153			346				47		288.6	137.2	1.8	57.0
10	1047			304				32		280.9	129.9	1.8	57.0
11	1181			289				22		271.5	121.8	1.8	57.0
12	1318			356				55		272.6	123.6	2.5	57.0
13	1328			327				67	1	255.0	107.1	2.5	57.0
14	1193			260				68	1	237.9	90.3	2.9	57.0
15	696			162				54	1	226.3	80.7	2.9	57.0
16	527			209				52		242.7	95.3	2.0	57.0
17	525			195				49	1	256.2	107.4	2.0	57.0
18	413			187				58	2	246.6	97.2	2.0	57.0
19	527			184				49	42	241.1	90.9	2.2	58.0
20	481			115				26	41	229.0	81.6	2.2	58.0
21	427			104				47	65	232.2	83.0	2.2	58.0
22	331			83				40	39	258.0	109.1	2.2	58.0
23	335			84				39	39	274.0	124.8	2.0	58.0
24	211			65				15	103	289.0	138.0	2.0	58.0
25	200			33				14	41	240.5	91.0	2.0	57.0
26	188			33				16	43	248.9	99.8	2.0	57.0
27	208			50				28	45	244.5	96.2	2.0	57.0
28	242			49				52	104	271.0	124.3	2.0	57.0
29	226			59				56	230	273.9	124.0	1.6	57.0
30	184			64				64	259	304.9	153.9	1.7	58.0
31	226			29				40	403	337.5	155.5	1.7	58.0
TOTALS	23850			5870				1409	1460				
AVERAGES	769			189				45	81	262.2	112.4		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 8 — BONNEVILLE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SFECHI)	(DEG F)
1		247		49				66	761	287.5	136.9	2.0	58.0
2		250		60				83	883	292.7	146.6	2.0	58.0
3		310		57			1	72	2316	292.2	146.4	2.0	58.0
4		309		60			8	98	4809	293.3	148.3	2.0	58.0
5		361		61			8	127	7183	274.5	129.0	2.0	59.0
6		261		45				119	4559	277.8	132.4	2.0	59.0
7		156		41			9	130	4650	289.6	139.0	2.0	58.0
8		165		42			9	176	8283	300.4	149.6	2.0	58.0
9		335		43			18	183	7418	306.7	163.6	2.0	58.0
10		326		36			23	157	13850	294.8	158.1	2.0	59.0
11		379		39			23	177	22699	287.9	155.3	1.8	59.0
12		290		51			36	180	17788	293.5	156.7	1.8	59.0
13		333		46			65	224	10087	295.7	147.9	2.0	59.0
14		255		31			69	188	29708	303.2	152.3	2.0	59.0
15		493		57			150	270	29107	281.4	130.2	2.1	60.0
16		464		52			221	238	56143	298.1	147.7	2.1	58.0
17		471		61			179	273	34311	316.1	165.7	2.1	60.0
18		308		55			237	260	28515	334.8	183.9	2.1	60.0
19		350		43			374	250	37485	334.1	187.1	2.1	61.0
20		369		78			440	285	51874	289.9	139.3	2.0	60.0
21		457		99			700	271	63964	282.5	131.9	2.0	61.0
22		545		79			976	356	56958	272.9	122.2	2.2	62.0
23		691		91			1423	457	49407	297.2	145.0	2.2	62.0
24		739		117			2162	513	51598	293.8	142.2	2.2	62.0
25		828		98			2505	561	35104	292.9	141.6	2.3	62.0
26		951		111			2752	505	30935	290.0	138.5	2.3	63.0
27		773		72			2759	406	24724	268.7	117.1	2.0	63.0
28		673		75			2565	438	14348	205.2	55.6	2.0	63.0
29		633		83			2254	316	27770	182.7	35.0	2.0	63.0
30		731		99			2983	411	39236	206.2	58.2	2.0	63.0
TOTALS		13453		1931			22949	7790	766473				
AVERAGES		448		64			850	260	25549	284.5	136.8		

TABLE 9

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 9

BONNEVILLE PROJECT

JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		503		78			2879	339	14040	223.1	79.2	2.0	63.0
2		692		84			3166	478	44022	165.2	21.1	3.0	63.0
3		730		49			3026	441	26537	177.6	37.0	3.0	63.0
4		667		61			3311	382	20997	163.2	18.5	3.0	64.0
5		698		55			2688	481	16828	169.7	28.4	3.0	63.0
6		652		57			2875	399	4406	206.4	62.7	3.0	64.0
7		599		71			3060	636	4919	208.0	60.3	3.0	64.0
8		585		64			2792	665	6053	201.4	66.2	2.8	65.0
9		564		58			2135	557	6321	209.0	61.0	2.8	65.0
10		529		83			2069	745	6087	193.7	47.1	2.8	65.0
11		489		71			1361	667	3698	204.8	57.3	2.8	64.0
12		414		84			924	720	5351	148.9	9.5	2.8	64.0
13		395		53			809	626	2674	140.5	.0	2.8	66.0
14		250		39			824	636	1970	143.8	.0	2.8	66.0
15		295		83			682	626	1050	170.9	33.9	2.8	66.0
16		391		97			689	979	1035	173.1	29.9	2.8	67.0
17		368		50			477	866	586	146.3	17.1	2.8	67.0
18		463		72			421	886	662	152.5	14.3	2.8	67.0
19		402		71			277	819	690	140.2	1.4	2.8	67.0
20		485		50			199	1311	632	158.3	18.8	2.8	68.0
21		398		70			204	1324	572	168.4	34.5	2.8	67.0
22		476		89			248	1474	374	179.0	36.4	2.8	68.0
23		309		70			122	1169	205	161.0	29.5	2.8	68.0
24		346		66	1		81	1540	146	157.4	35.7	2.8	69.0
25		330		89	1		126	1306	209	141.4	2.4	4.2	69.0
26		302		57			111	1062	171	138.7	.0	4.2	70.0
27		269		80	1		76	1628	164	121.0	.0	4.3	70.0
28		397		71			55	1676	95	118.9	.0	4.2	69.0
29		210		90	2		23	1428	74	117.8	.0	4.3	71.0
30		150		93			27	1253	78	137.6	.0	4.5	71.0
31		175		77	5		27	1329	59	138.2	.0	4.5	71.0
TOTALS		13499		2182	10		35764	28448	170705				
AVERAGES		435		70	2		1154	918	5507	163.7	25.9		

MUNTHLY FISH PASSAGE SUMMARY REPORT

TABLE 10

BONNEVILLE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

AUG 1980

FISH COUNTS

RIVER CONDITIONS

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1			190	49	3		32	1300	41	138.3	.0	4.0	70.0
2			246	63			21	1858	67	111.0	2.7	4.0	70.0
3			168	65	2		18	1205	32	108.6	2.2	4.0	70.0
4			127	67			12	872	42	131.8	.0	4.0	70.0
5			246	77	2	5	9	1703	46	137.9	.0	4.0	71.0
6			210	69		1	14	1606	41	135.9	.0	4.4	70.0
7			229	69			8	1448	45	135.2	.0	4.4	70.0
8			387	69			16	2582	33	128.9	13.8	4.2	70.0
9			327	92			6	2627	60	101.3	17.8	4.2	70.0
10			332	109		1		2452	43	100.6	8.4	4.0	70.0
11			251	102	3	5	6	1905	23	130.4	4.7	4.2	71.0
12			342	47	1	1	3	2101	17	150.3	8.6	4.2	71.0
13			214	69			2	1906	14	130.7	.0	5.2	71.0
14			228	111		1	2	1708	14	108.2	.0	5.0	71.0
15			365	103	1	1	4	1533	24	104.7	.0	5.0	70.0
16			296	125	1	4	4	1763	18	116.7	.0	5.0	69.0
17			230	117	1		2	1279	11	113.9	.0	5.0	69.0
18			359	126	3	1	1	1470	11	116.9	.0	5.0	69.0
19			221	121	2	3	1	990	1	138.8	.0	5.0	68.0
20			422	146		6		1449	15	129.7	.0	5.0	68.0
21			580	171	4	2		1412	10	128.1	.0	5.0	69.0
22			1009	211	4	4		1937	9	110.6	.0	5.0	68.0
23			1117	220	2	2		1539	13	100.1	.0	4.8	68.0
24			1283	282	5	5	1	2031	11	96.0	.0	4.8	68.0
25			1357	353	10	4	1	2170	8	102.3	.0	4.7	69.0
26			1001	260	15	18		1544	5	121.4	.0	3.7	69.0
27			1156	332	20	19		1477	6	120.7	.0	4.0	68.0
28			1536	406	46	25		1307	8	119.2	.0	4.4	68.0
29			1470	316	74	46	1	1180	3	119.6	1.3	4.4	69.0
30			2285	409	100	84		1260	7	119.4	1.3	4.4	68.0
31			2676	490	166	78		1459	7	120.6	1.3	4.4	68.0
TOTALS			20860	5246	465	316	164	51073	685				
AVERAGES			673	169	21	14	8	1648	22	120.3	2.0		

TABLE 10

TABLE 11

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 11

BONNEVILLE PROJECT

SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			2665	527	149	103		1369	5	123.4	1.3	4.7	67.0
2			3002	564	241	180		1289	2	123.0	1.3	4.5	67.0
3			3084	657	181	187	1	1282	3	105.9	1.3	4.5	67.0
4			5112	633	239	165		1458	1	107.4	1.3	4.7	67.0
5			6326	774	395	239		1771	1	104.7	1.3	4.7	67.0
6			6403	922	283	233		1759	0	97.5	1.3	4.7	68.0
7			8990	999	427	275	1	1917	2	97.9	1.3	4.4	68.0
8			8667	842	323	265		1746	6	105.8	1.3	4.4	68.0
9			7013	850	308	292		1304	5	114.1	1.3	4.4	68.0
10			5825	909	275	310		1561	6	106.0	1.3	4.6	68.0
11			4059	807	189	289		1432	2	101.9	1.3	4.6	68.0
12			2676	625	142	257		1007	1	101.1	1.3	4.7	67.0
13			2409	519	145	224		1002		91.5	1.3	4.2	67.0
14			2337	758	190	273		992	2	86.2	1.3	4.2	67.0
15			2294	751	206	228		946		95.4	1.5	4.2	67.0
16			2178	558	206	217		946	5	110.3	1.3	5.5	67.0
17			1578	431	130	162		882	1	115.7	1.3	5.0	67.0
18			2253	456	106	129	1	992		117.0	1.3	5.0	67.0
19			2436	382	128	150		892		117.9	.0	3.5	67.0
20			2993	514	210	219		1035		108.9	.0	3.3	67.0
21			2784	642	276	406		941	8	100.8	.0	3.5	67.0
22			1959	508	176	371		998		100.3	.0	3.5	67.0
23			1687	518	162	296		755		101.4	.0	3.3	67.0
24			2416	720	205	363		693		102.8	.0	4.0	66.0
25			1914	656	215	440		736		106.3	.0	4.0	66.0
26			2090	504	244	316	1	847		117.5	.0	4.0	66.0
27			1417	343	148	279		475	1	115.0	.0	4.0	66.0
28			954	281	139	153		431		116.6	.0	4.0	66.0
29			1643	352	164	182		404		109.8	.0	4.5	66.0
30			1275	228	100	96		417		114.2	.0	4.3	66.0
TOTALS			100439	18230	6302	7299	4	32277	51				
AVERAGES			3348	608	210	243	1	1076	3	107.1	.8		

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 12

BONNEVILLE PROJECT

OCT 1980

FISH COUNTS

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD
1			1030	261	89	123		339	1
2			1175	231	89	108		425	
3			748	180	74	58		350	
4			345	203	45	78		228	
5			303	196	36	56		213	
6			335	151	31	67		147	
7			230	115	17	37		113	
8			224	98	55	50		148	
9			282	63	21	32		99	1
10			225	63	31	22		76	
11			162	64	26	21		62	
12			98	88	24	22		77	2
13			92	41	29	17		60	
14			54	43	55	10		71	2
15			41	43	33	12		61	
16			48	44	37	11		68	5
17			93	36	34	23		35	4
18			67	34	55	29		42	
19			33	31	53	36		52	
20			36	22	47	38		29	
21			102	31	75	46		40	
22			99	32	76	29		67	
23			55	16	81	11		47	
24			45	17	106	39		51	
25			34	16	52	22		63	
26			66	15	132	25		64	
27			46	11	125	20	1	41	
28			35	10	166	35		46	
29			27	10	150	40		49	
30			31	7	104	37		45	
31			17	11	214	31		25	
TOTALS			6181	2223	2142	1185	1	3233	15
AVERAGES			199	72	69	38	1	104	2

RIVER CONDITIONS

DATE	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1	113.3	.0	4.3	66.0
2	120.4	.0	4.2	66.0
3	124.3	.0	5.0	64.0
4	92.6	.0	5.0	64.0
5	90.1	.0	5.0	64.0
6	92.3	.0	6.4	64.0
7	91.7	.0	5.0	64.0
8	83.7	.0	5.0	65.0
9	102.6	.0	5.0	65.0
10	93.8	.0	5.0	64.0
11	95.4	.0	5.0	63.0
12	95.0	.0	5.0	63.0
13	78.1	.0	5.0	63.0
14	105.6	.0	5.0	63.0
15	119.7	.0	5.0	63.0
16	119.0	.0	5.0	63.0
17	123.1	.0	5.0	63.0
18	126.3	.0	5.0	62.0
19	106.9	.0	5.0	62.0
20	114.9	.0	5.0	63.0
21	108.2	.0	5.0	63.0
22	106.2	.0	5.0	63.0
23	114.8	.0	5.0	59.0
24	107.9	.0	3.5	59.0
25	104.6	.0	3.5	59.0
26	99.2	.0	3.5	59.0
27	114.0	.0	3.5	59.0
28	119.8	.0	3.5	59.0
29	116.8	.0	3.8	59.0
30	116.7	.0	3.8	59.0
31	114.8	.0	3.4	59.0
AVERAGES	106.8	.0		

TABLE 13

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 13

BONNEVILLE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

NOV 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			7	8	148	12		24	1	116.8	.0	3.4	59.0
2			20	7	330	22		32		119.0	.0	5.7	58.0
3			27	2	176	11		33		121.4	.0	5.4	57.0
4			33	3	168	27		28		121.9	.0	5.4	57.0
5			25	13	204	21		20		121.6	.0	5.4	56.0
6			19	5	491	25		36		106.6	.0	5.4	56.0
7			21	3	422	39		53		121.9	.0	4.4	56.0
8			19	1	487	33		41		121.2	.0	4.0	56.0
9			16	3	207	8		27		107.1	.0	4.0	56.0
10			14	1	104	11		20		125.4	.0	1.8	55.0
11			6	1	266	18		37		123.7	.0	2.8	56.0
12			4		262	14		50		151.4	30.8	4.0	54.0
13			6		220	9		28		183.1	56.9	3.5	54.0
14			7	2	191	9		44		164.9	38.7	3.1	54.0
15			12		379	19		34		117.8	.0	3.6	53.0
16										117.2	.0	3.6	53.0
17										119.4	2.3	3.6	53.0
18										121.8	1.1	4.4	54.0
19										135.7	9.5	3.5	54.0
20										138.4	10.7	4.5	54.0
21										145.1	9.9	4.5	54.0
22										169.7	32.2	4.5	54.0
23										146.8	8.5	4.5	54.0
24										138.9	.0	4.5	53.0
25										136.5	.0	4.5	53.0
26										158.0	22.5	4.5	53.0
27										136.0	.0	4.5	53.0
28										135.0	.0	3.8	53.0
29										134.6	4.1	3.8	53.0
30										135.2	.0	3.8	53.0
TOTALS			238	49	4055	278		507	1				
AVERAGES			16	4	270	19		34	1	133.0	7.6		

TABLE 14
WATER TEMPERATURE AND STREAM FLOW DATA
BONNEVILLE - 1980

DATE	DECEMBER		
	WATER TEMPERATURE	STREAM FLOW	TURBIDITY
1	52	126,100	3.6
2	51	134,400	3.6
3	50	179,600	3.4
4	49	187,500	3.8
5	49	179,200	3.8
6	49	169,300	3.8
7	48	159,300	4.8
8	48	178,200	4.8
9	47	177,400	4.8
10	46	170,900	4.8
11	46	173,200	4.8
12	46	168,400	4.8
13	46	161,600	4.5
14	46	143,100	4.5
15	46	160,600	4.5
16	45	162,400	4.6
17	45	164,500	4.5
18	45	182,100	5.5
19	44	167,600	4.5
20	44	154,100	2.7
21	44	145,400	2.7
22	44	146,900	2.7
23	45	173,300	2.7
24	35	204,300	2.7
25	45	199,700	1.8
26	45	252,800	1.0
27	46	270,300	0.5
28	46	292,400	0.5
29	45	284,300	1.0
30	45	254,800	1.0
31	46	271,800	1.0

TABLE 15

TABLE 15

PEAK DAYS OF FISH MIGRATION

BONNEVILLE DAM - 1938-1980

Year	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho		Chum		Shad	
	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1938*	May 10	2,978	Aug 11	1,102	Sep 9	16,736	Sep 2	4,356	Jul 13	8,407	Aug 31	1,941	Oct 28	190	Jul 20	285
1939	Apr 23	5,220	Jul 27	1,173	Sep 8	13,531	Jul 30	3,857	Jun 29	3,654	Sep 5	1,233	Oct 28	131	Jun 29	306
1940	Apr 19	3,303	Aug 15	719	Sep 1	33,900	Sep 8	6,783	Jun 30	7,371	Sep 7	1,274	Nov 3	140	Jun 25	2,030
1941	Apr 27	4,215	Jul 6	480	Sep 6	33,263	Sep 10	4,357	Jul 2	3,599	Sep 6	2,311	Nov 14	376	Jul 3	2,483
1942	May 7	2,579	Jun 7	949	Sep 8	44,507	Sep 10	9,410	Jul 3	3,248	Sep 3	1,261	Nov 9	164	Jun 21	1,115
1943	Apr 30	4,168	Jun 30	473	Sep 4	20,623	Sep 9	3,918	Jul 7	2,070	Sep 4	372	Nov 10	54	Jul 19	485
1944	Apr 26	2,182	Aug 14	758	Sep 3	16,800	Sep 5	3,654	Jul 9	811	Sep 5	540	Nov 4	61	Jul 10	2,343
1945	May 3	3,836	Jul 15	1,050	Sep 11	19,913	Sep 9	3,906	Jul 10	618	Sep 7	65	Nov 1	49	Jul 10	6,634
1946	May 7	4,135	Jun 14	2,424	Sep 10	34,619	Aug 6	4,333	Jul 12	5,079	Sep 10	618	Nov 18	96	Jul 11	1,285
1947	Apr 18	14,735	Aug 15	3,002	Sep 4	32,680	Sep 4	6,511	Jun 26	11,101	Sep 7	1,559	Oct 31	17	Jul 2	3,665
1948	Apr 16	3,927	Jun 25	5,298	Sep 4	25,708	Sep 4	4,131	Jul 4	11,840	Sep 5	601	Nov 21	156	Jul 17	1,199
1949	May 12	4,422	Jul 5	1,862	Sep 7	19,618	Aug 1	4,211	Jul 5	4,129	Sep 7	115	Nov 24	121	Jul 15	2,393
1950	May 10	5,055	Jul 10	2,841	Sep 8	27,677	Aug 13	4,073	Jul 8	6,254	Sep 2	1,274	Nov 29	61	Jul 24	804
1951	May 9	10,673	Jun 5	3,610	Sep 10	10,196	Jul 18	4,272	Jun 28	12,288	Sep 7	559	Nov 18	115	Jul 3	603
1952	May 27	7,594	Jun 19	4,116	Sep 4	17,322	Jul 28	8,920	Jun 24	19,571	Aug 30	737	Nov 16	92	Jul 15	441
1953	Apr 22	12,950	Jun 26	3,897	Sep 3	9,083	Jul 27	6,884	Jul 5	20,351	Aug 29	1,012	Nov 7	116	Jul 9	1,786
1954	May 5	7,735	Jun 28	3,124	Sep 5	8,312	Jul 28	5,631	Jun 28	10,537	Sep 4	607	Nov 14	120	Jul 30	320
1955	May 2	13,763	Jun 23	4,912	Sep 5	8,645	Jul 27	9,337	Jul 7	27,112	Sep 5	374	Nov 9	28	Jul 26	533
1956	May 7	5,291	Jun 23	6,419	Sep 6	8,924	Jul 26	4,069	Jul 5	12,958	Sep 6	645	Nov 4	43	Jul 13	1,236
1957	Apr 30	13,222	Jun 18	11,030	Sep 5	8,834	Jul 25	5,093	Jun 24	5,288	Sep 11	287	Nov 12	46	Jul 11	1,336
1958	May 9	4,833	Jun 17	4,634	Sep 15	22,380	Jul 25	5,053	Jul 6	7,174	Sep 2	345	Nov 6	43	Jul 10	1,051
1959	Apr 24	2,827	Jun 23	5,242	Sep 6	14,656	Jul 22	7,472	Jul 9	7,369	Sep 6	249	Nov 20	95	Jul 17	899
1960	Apr 29	6,231	Jun 14	7,151	Sep 5	7,848	Jul 25	4,816	Jun 23	3,695	Sep 4	285	Nov 11	67	Jun 30	9,584
1961	Apr 27	7,620	Jun 19	3,322	Sep 6	8,210	Jul 31	4,611	Jul 2	1,037	Sep 12	411	Nov 23	42	Jul 4	36,835
1962	Apr 23	4,767	Jun 16	4,930	Sep 1	7,750	Sep 2	6,134	Jul 1	1,925	Sep 12	1,435	Nov 23	89	Jul 14	32,518
1963	Apr 24	4,028	Jun 18	2,749	Sep 6	12,955	Jul 31	6,051	Jun 30	4,100	Sep 6	549	Nov 8	44	Jul 6	23,473
1964	Apr 29	5,256	Jun 25	3,713	Sep 8	16,086	Jul 29	5,079	Jul 1	9,631	Sep 13	3,899	Nov 10	38	Jul 12	22,359
1965	May 10	4,959	Jun 23	3,588	Sep 8	12,599	Jul 27	6,405	Jun 30	3,408	Sep 10	5,408	Nov 15	35	Jul 16	40,018
1966	Apr 16	6,077	Jun 21	2,882	Sep 17	8,121	Jul 16	3,523	Jul 1	3,768	Sep 20	8,121	Nov 15	57	Jul 10	27,744
1967	Apr 21	5,325	Jul 2	4,188	Sep 15	13,838	Sep 8	2,807	Jul 5	10,235	Sep 15	5,988	Nov 12	33	Jul 6	14,760

* Fish counting initiated on 7 May 1938

TABLE 15 (CONTD)

PEAK DAYS OF FISH MIGRATION

BONNEVILLE DAM - 1938-1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho		Chum		Shad	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1968	Apr 22	5,245	Jun 10	2,716	Sep 7	10,607	Jul 31	2,760	Jun 25	7,359	Sep 1	4,611	Nov 17	7	Jul 4	15,961
1969	May 7	8,182	Jun 19	4,598	Sep 9	16,995	Jul 23	3,771	Jul 3	4,466	Sep 15	3,225	Nov 3	9	Jun 20	36,293
1970	May 1	5,047	Jun 24	1,938	Sep 11	19,363	Aug 5	2,986	Jul 5	3,498	Sep 11	8,576	Oct 23	11	Jun 26	25,537
1971	Apr 27	7,155	Jul 1	2,247	Sep 9	14,097	Jul 27	5,438	Jul 7	5,926	Sep 6	6,798	Sep 6	6	Jul 16	11,977
1972	Apr 26	19,241	Jun 23	3,743	Sep 9	10,752	Sep 11	5,359	Jul 6	4,000	Sep 13	3,774	Oct 1	1	Jul 5	19,490
1973	Apr 23	8,735	Jun 12	1,203	Sep 8	15,858	Sep 4	3,469	Jun 30	4,186	Sep 7	2,723	Sep 2	31	Jun 12	46,892
1974	May 6	7,318	Jun 30	2,061	Sep 15	12,216	Aug 2	2,951	Jul 3	3,721	Sep 16	2,480	Nov 15	5	Jul 8	9,737
1975	May 8	4,604	Jul 10	1,329	Sep 7	23,326	Jul 27	1,804	Jul 2	4,353	Sep 9	3,516	None		Jul 9	22,974
1976	Apr 29	6,556	Jun 25	2,064	Sep 6	26,509	Jul 23	2,358	Jun 30	2,778	Sep 13	3,779	None		Jul 3	24,692
1977	Apr 18	6,370	Jun 21	1,010	Sep 9	13,050	Sep 3	5,517	Jun 25	6,306	Sep 9	812	None		Jun 10	51,801
1978	Apr 22	8,284	Jun 18	1,243	Sep 11	17,087	Sep 10	2,146	Jun 24	1,119	Sep 12	3,738	Nov 8	6	Jun 12	62,509
1979	Apr 23	1,949	Jul 28	836	Sep 9	13,944	Aug 2	2,144	Jun 26	2,909	Sep 7	3,821	Oct 31	1	Jun 10	126,646
1980	Apr 28	2,665	Jun 26	1,062	Sep 7	9,989	Aug 9	2,627	Jul 4	3 311	Sep 7	702	Nov 11	10	Jun 21	63,964

TABLE 15 (CONTD)

TABLE 16

TABLE 16

MONTHLY COUNT OF CHINOOK SALMON

BONNEVILLE DAM - 1938-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Jan 1- May 31	SUMMER Jun 1- Jul 31	FALL Aug 1- Dec 31
1938					22 371	8,221	6,556	34,765	197,294	2,302	263	27	271,799	22 371	14 777	234,651
1939	6	12	121	51,410	25,159	5 602	17,828	32,909	150,851	2,197	78	16	286,189	76,708	23,430	186,051
1940			504	37,253	28,621	7,027	14,938	58,643	240,515	3,765	287	34	391,587	66,378	21,965	303 244
1941	4		1,360	51,486	19 445	7,013	9,395	12,590	351,967	7,179	866	138	461,443	72,295	16,408	372,740
1942	1	15	34	9,506	30 915	11,816	12,821	27,581	303,919	4,485	639	190	401,942	40,471	24,637	336,834
1943	11	6	43	12,172	53,268	5,440	8 044	28,985	201,414	3,354	365	21	313 123	65,500	13 484	234 139
1944	1	2	65	15,671	15 127	4,363	8,241	55,468	139,254	2,388	164	20	240,764	30,866	12,604	197,294
1945	6	4	81	17,148	26,276	11,293	16,317	32,254	189 675	4,281	137	6	297,478	43,515	27,610	226,353
1946	1	2	25	14 196	53 313	30,253	20,967	45,422	277,152	4,523	173	25	446,052	67 537	51,220	327,295
1947		2	141	83 520	49,899	25,502	13,358	43,062	260,385	3,945	526	37	480,377	133,562	38,860	307,955
1948	10		251	21,205	20 262	44,137	23,100	35 934	270,238	3,928	467	23	419,555	41,728	67 237	310 590
1949			5	5 765	44,304	24,232	22,500	41,500	137,599	1,571	215	6	277,697	50,074	46,732	180,891
1950			21	6,630	50,638	16,667	32 937	40,462	205,521	4,356	143		357,375	57,289	49,604	250,482
1951			32	28,801	86,055	54,889	24,394	33,785	97,131	6,489	212		331,788	114,888	79 283	137 617
1952			255	8,130	107,807	62,491	21,800	82,290	135,053	2,576	477		420,879	116,192	84 291	220,396
1953			1 254	126,450	42 583	27 228	30,593	27 398	75,145	1,495	333		332,479	170,287	57,821	104,371
1954		2	657	82 877	51,230	46,801	32,596	24,969	80,426	1,189	200		320,947	134,766	79,397	106 784
1955			1,391	84 436	85,769	45,502	37 437	32,833	70,558	1 803	124		359,853	171,596	82,939	105,318
1956			161	8 850	54,438	64,262	36 938	42 203	92,030	1,854	179	2	300,917	63 449	101 200	136 268
1957			328	90 984	45,128	104,243	30,790	34,829	95,457	1,352	175		403,286	136,440	135,033	131,813
1958			468	15 361	59,377	74,375	27 524	19,735	227 504	1,948	127		426,419	75 206	101,899	249,314
1959			182	26,944	34,007	39,581	49,371	24,945	168,187	1,643	168		345,028	61,133	88,952	194,943
1960			184	37,064	32,349	65,247	19,923	22 719	76,327	2,012	224		256,049	69,597	85 170	101 282
1961			476	72 526	25,693	41,302	25,159	22 675	90,688	3,108	353		281,980	98,695	66 461	116,824
1962			1 278	56,201	33 637	52,392	25 093	23 526	91,320	2,759	419		286 625	91,116	77,485	118,024
1963			2,802	43,859	28 810	36,836	27,178	28 586	104 415	5,571	503		278 560	75,471	64,014	139 075
1964			2 418	69,031	19 979	35,814	44 717	26,546	141,525	4,157	235		344,422	91 428	80,531	172 463
1965			1 238	47,083	35,945	38,482	37 515	38 727	112 664	6 074	229		317 957	84,266	75 997	157,694
1966			2,168	92,637	17,864	40,233	31,764	20 608	128 421	6,052	364		340 111	112 669	71 997	155 445
1967			1 620	71,957	11,358	41 847	53,812	25 760	154 323	5,405	155		366,237	84,935	95 659	185 643

TABLE 16 (CONTD)

MONTHLY COUNT OF CHINOOK SALMON

BONNEVILLE DAM - 1938 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Jan 1- May 31	SUMMER Jun 1- Jul 31	FALL Aug 1- Dec 31
1968			1,342	69,420	28,425	46,793	36,126	27,779	126,994	4,010	265		341,154	99,919	82,187	159,048
1969			1,910	65,371	106,281	59,177	42,976	38,456	187,502	5,511	359		507,543	173,562	102,153	231,828
1970			2,020	78,605	30,351	35,091	29,811	44,559	159,710	4,364	269		384,780	110,976	64,902	208,902
1971			683	60,849	63,985	37,757	40,154	26,749	166,346	8,820	359		405,702	125,517	77,911	202,274
1972			426	154,443	31,271	36,758	34,072	23,577	109,820	3,939	150		394,456	186,140	70,830	137,486
1973			1,585	128,495	12,068	24,164	21,196	31,513	170,895	8,457	262		398,635	142,148	45,360	211,127
1974			434	57,516	76,585	13,424	32,472	15,554	156,543	13,923	308		366,759	134,535	45,896	186,328
1975			162	48,295	55,647	16,989	27,362	37,907	234,145	4,847	212		425,566	104,104	44,351	277,111
1976			587	58,978	53,883	39,130	29,883	48,776	262,615	13,395	526		507,773	113,448	69,013	325,312
1977			3,569	98,710	17,229	21,790	19,233	21,992	171,303	11,805	1,026		366,657	119,508	41,023	206,126
1978			4,291	100,712	44,860	27,125	17,198	23,513	165,411	11,104	386		394,600	149,863	44,323	200,414
1979			790	29,751	20,583	15,924	18,293	41,273	142,241	6,865	248		275,968	51,124	34,217	190,627
1980			535	30,732	29,720	15,384	15,681	26,106	118,669	8,404	287		245,518	60,987	31,065	153,466
Total	40	45	37,897	2,271,030	1,782,515	1,462,599	1,128,063	1,429,463	7,039,172	209,205	13,457	545	15,374,029	4,091,527	2,590,660	8,691,842
43-Year Average			881	52,815	41,454	34,014	26,234	33,243	163,702	4,865	313		357,536	95,152	60,248	202,136

TABLE 17

MONTHLY COUNT OF SOCKEYE SALMON

BONNEVILLE DAM - 1938-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1938					1,025	17,811	53,865	2,097	235	6	2		75,041
1939				48	189	29,386	43,124	616	19				73,382
1940					206	59,639	85,885	3,063	13	1			148,807
1941				299	1,052	23,536	39,193	1,615	46				65,741
1942					13	12,624	41,301	1,477	49				55,464
1943					9	4,525	33,613	1,697	1				39,845
1944			1		16	3,099	11,171	659	126				15,072
1945			10	51	521	1,507	6,903	498	10	1			9,501
1946				9	67	7,815	64,715	1,747	21	2			74,376
1947					5	59,378	108,175	3,564	15	1		1	171,139
1948						12,023	117,652	1,849	13	4			131,541
1949					151	9,013	41,619	655	6				51,444
1950						341	75,784	1,826	42				77,993
1951					25	81,045	87,104	1,214	40				169,428
1952			7	1	3	136,939	47,188	467	30	2	8		184,645
1953			57	27	663	45,711	186,933	1,774	50				235,215
1954			1		13	52,359	76,505	1,212	17				130,107
1955					79	21,923	214,860	866	11	9			237,748
1956					10	29,649	125,185	1,564	7	3			156,418
1957					21	38,616	43,938	323	14	3			82,915
1958					25	38,736	82,719	878	23	8			122,389
1959				2	153	10,155	75,325	906	14	5			86,560
1960					4	41,758	17,615	321	15				59,713
1961				3	22	7,960	9,059	56	9	2			17,111
1962				1	21	9,713	18,310	82	47	5			28,179
1963					492	25,010	34,275	216	304	17	5		60,319
1964				3	570	32,079	66,857	213	110	10	14		99,856
1965					457	21,860	31,776	744	285	3			55,125
1966				10	338	57,509	97,845	800	155	4			156,661
1967				18	38	36,091	107,558	344	106	3			144,158

TABLE 17 (CONTD)

MONTHLY COUNT OF SOCKEYE SALMON

BONNEVILLE DAM - 1938 - 1980

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1968				54	372	74,226	33,245	199	101	9	1		108,207
1969				5	165	24,238	34,970	120	124	13	1		59,636
1970				5	269	22,977	46,062	1,147	290	12			70,762
1971					70	14,789	72,203	313	69	2	1		87,447
1972					614	16,505	37,939	1,254	9	2			56,323
1973					17	29,314	29,308	337	3				58,979
1974					14	8,073	35,407	340	3				43,837
1975					2	17,961	40,050	192	7				58,212
1976					94	22,532	20,661	297	26	1			43,611
1977				1	38	74,551	25,178	61					99,829
1978				1	2	12,442	5,884	101	6				18,436
1979					1	25,474	26,297	826	30				52,628
1980						22,949	35,764	164	4	1			58,882
Total			76	538	7,846	1,293,841	2,489,020	38,694	2,505	129	32	1	3,832,682
43-Year Average					182	30,089	57,884	900	58				89,132

TABLE 18

MONTHLY COUNT OF COHO SALMON

BONNEVILLE DAM - 1938-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (Incl Jacks)	Jacks
1938								3,070	10,995	972	141	7	15,185	
1939	3							1,811	12,226	310	15	18	14,383	
1940	3							1,451	10,212	213	33	5	11,917	
1941	2							1,317	16,061	369	160	2	17,911	
1942								1,193	11,062	147			12,402	
1943								762	1,676	89	20		2,547	
1944								1,052	3,021	103	29	2	4,207	
1945							2	239	533	15		1	790	
1946		10	4				22	228	3,609	1		24	3,898	
1947	12	2	1					217	10,928	10	3	1	11,174	
1948	1						11	158	3,893	10	3	5	4,081	
1949							17	270	703	5	8	1	1,004	
1950								1,570	8,545	36			10,151	
1951								197	4,773	225	6		5,201	
1952							10	2,581	5,131	22	24		7,768	
1953							1	7,094	5,890	22	11		13,018	
1954								668	3,319	74	1		4,062	
1955								443	3,188	94			3,725	
1956							7	1,158	4,879	83			6,127	
1957								1,564	3,046	63	2		4,675	
1958								341	3,220	99	13		3,673	
1959								122	2,551	22			2,695	
1960								538	2,502	224	4		3,268	
1961								277	2,867	306	6		3,456	
1962							1	1,116	13,091	543	37		14,788	
1963							4	1,071	8,664	2,724	195		12,658	
1964							23	3,776	46,535	3,069	199		53,602	
1965						2	21	5,911	61,335	8,566	197		76,032	
1966						46	874	4,921	59,457	6,361	232		71,891	34,919*
1967						33	715	3,814	87,254	4,560	112		96,488	47,893

* In 1966 Jacks were classified as those Cohos under 12 inches in length
Beginning with 1967 Jacks were classified as under 22 inches

TABLE 18 (CONTD)

MONTHLY COUNT OF COHO SALMON

BONNEVILLE DAM - 1938 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (Incl. Jacks)	Jacks
1968						48	124	10,450	50,900	1,868	98		63,488	20,435
1969						38	443	4,671	41,176	2,998	52		49,378	25,216
1970						2	128	6,604	70,631	2,631	120		80,116	25,248
1971							57	7,292	58,235	9,753	652		75,989	22,172
1972							66	9,481	52,456	3,792	137		65,932	31,716
1973							636	12,656	33,736	6,715	866		54,609	25,849
1974							539	8,805	40,761	8,631	2,219		60,955	29,350
1975							56	5,373	39,167	11,892	1,819		58,307	25,535
1976							143	5,970	40,505	5,417	1,115		53,150	16,484
1977							55	1,134	15,163	2,582	474		19,408	10,083
1978				1			2	2,643	38,308	10,531	1,105		52,590	22,312
1979							68	7,324	28,732	7,583	1,621		45,328	15,716
1980							10	781	13,601	3,327	4,333		22,052	9,078
Total	21	12	5	1		169	4,035	132,114	934,537	107,057	16,062	66	1,194,079	362,006
43-Year Average							94	3,072	21,733	2,490	374		27,769	24,134**

**15-Year Average

TABLE 19

TABLE 19

MONTHLY COUNT OF STEELHEAD TROUT

BONNEVILLE DAM - 1938-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Jan 1-May 31	SUMMER Jun 1-Aug 25	FALL Aug 26-Dec 31
1938					6 622	2 382	19,455	29 231	46,618	2 264	339	92	107,003	6,622	42 684	57 697
1939	23	19	570	8,110	1,587	1 490	36,681	38 062	33 891	1 264	216	119	122 032	10 309	69 787	41 936
1940	5	96	1,688	4 125	998	4,489	61,188	46,071	64,377	1,786	292	59	185 174	6,912	99 812	78 450
1941	37	76	1 641	6,392	1,518	996	21 940	29 600	50,542	3 980	1,063	304	118,089	9,664	48 445	59,980
1942	4	37	256	3 642	4,159	1 588	19 905	41,973	77 076	2,412	566	182	151 800	8 098	57,121	86 581
1943	14	18	654	3,374	4 698	1 564	7 755	29,894	41 051	2,444	573	94	92 133	8,758	32 461	50 914
1944	50	157	1 019	6,142	2,224	1 169	21 868	24 508	35,907	6 129	1 119	226	100,518	9,592	41 993	48,933
1945	1,003	1 078	3 008	4,685	1,557	1 109	24,537	40 593	40,194	1 925	302	142	120,133	11 331	61 354	47,448
1946	64	551	3,040	9 839	5,482	3 265	20,600	58 466	38,399	2 070	262	769	142 807	18 976	74 446	49 385
1947	197	321	1,968	6 889	2 025	1,595	28,134	40 819	50,025	2 905	443	123	135,444	11 400	63,635	60 409
1948	154	119	1 631	4 473	1 170	1,895	33 191	53,621	40 609	1,742	381	76	139 062	7 547	79 906	51,609
1949	1		1 689	3 293	1 712	1,264	34 314	54,281	20 786	1,161	686	98	119,285	6,695	84 067	28 523
1950	13	8	1 156	4 537	1,667	691	25 142	53 904	24,226	1 932	811		114,087	7 381	72,610	33 896
1951			375	2 338	1 568	5,187	74 980	39 712	15,357	947	225		140,689	4 281	116,819	19 589
1952			278	1,248	1 751	8,202	118,110	79,735	48,293	2,735	638		260 990	3,277	186 735	70 978
1953			1 310	5 308	1,456	5 313	10[illegible],712	64 006	36,107	2 797	905		223 914	8,074	165 061	50,779
1954		6	679	5 511	1,571	6 115	59,443	65 234	34,941	2 209	551		176 260	7,767	118 318	50,175
1955			1 00[illegible]	2,100	1 149	2 418	79 124	84,746	24,239	3 361	268		198,411	4 255	157 359	36,797
1956			1 409	2,718	1 582	3,122	48 306	47 148	23 343	2,846	635	7	131,116	5 709	93 983	31 424
1957			926	2 081	760	8,434	66,738	34 915	24,029	1 069	231		139 183	3 767	101 412	34 004
1958			495	651	1 437	5,645	53 734	22 827	44,478	1 859	291		131 437	2,603	76 930	51 904
1959			219	746	1 236	2,562	60 549	38 417	23,579	1 540	178		129,026	2 201	95 997	30 828
1960			412	904	1,090	4,314	44 026	33,571	28 058	1,090	211		113 676	2 406	74 735	36 535
1961			374	1,161	692	2 246	44,379	41 237	47 409	1,561	660		139 719	2,227	77 042	60 450
1962			381	1 957	1,491	3,737	49 789	40,177	64,084	1 798	611		164,025	3 829	83 161	77,035
1963			503	1,035	1,385	4 192	51,951	31,441	35,446	2 920	545		129,418	2 923	80 935	45 560
1964			490	1,609	769	1 940	50,640	26 892	32 406	1,954	552		117 252	2 868	73 267	41 117
1965			211	1 516	1 419	4,265	89 405	29,506	37,529	1,971	631		166 453	3,146	117 414	45 893
1966			658	2 682	2,389	13 051	57,975	25,779	37,733	2 657	737		143 661	5 724	91 816	46 116
1967			416	1 182	899	3 062	40 881	36,787	35,472	2 701	472		121 872	2 447	76 247	43 078

TABLE 19 (CONTD)

MONTHLY COUNT OF STEELHEAD TROUT

BONNEVILLE DAM 1938 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Jan 1 May 31	SUMMER Jun 1 Aug 25	FALL Aug 26 Dec 31
1968			340	861	1 31[illegible]	3 664	29 773	41,006	27 865	1 645	505		106,974	2 516	65 907	38 551
1969			911	2 164	2 897	6 889	63 222	36 077	26 565	1 484	573		140 782	5 972	98 079	36 731
1970			244	1 267	1 331	4 208	30 866	46 307	27 073	1 909	305		113 510	2 842	75 264	35 404
1971			463	1 377	1 810	4 469	84 877	58 249	38 619	3 739	363		193 966	3 650	137 404	52 912
1972			492	2 562	2 137	3 444	59 933	48 223	65,523	3 432	140		185 886	5 191	102 036	78 659
1973			830	2 534	1 367	5 360	53 820	46,399	43 275	3 918	320		157 823	4 731	95 280	57 812
1974			1 292	4 127	5 547	6 349	57 212	44 266	14 654	3 080	527		137 054	10 966	73 436	52 652
1975			1 080	4 284	4 324	6 058	30 823	28 623	9 106	904	338		85 540	9 688	61 898	13 954
1976			1 285	3 459	3 677	9 130	38 907	44 204	21,084	1 953	478		124 177	8 421	83 949	31 807
1977			1 159	4 121	4 115	11,395	67 554	35 161	66 084	3 298	550		193 437	9 395	104 287	79 75[illegible]
1978			1 750	3 327	4 587	10 883	25 284	25 637	30 461	2 168	334		104,431	9 664	54 524	40 243
1979			1 333	1 905	1 785	7 585	33 379	39 399	23 592	4,710	291		113 979	5 023	74 449	34 507
1980			1 13[illegible]	3 378	1,409	7 790	28 448	51,073	32,277	3,233	507		129,254	5 926	79 084	44 244
Total	1 565	2 486	40 [illegible]	135 614	94 384	94 526	2 055 550	1 827,777	1,582,382	103,502	20,625	2 291	6 061,482	274 829	3 721,[illegible]	2 065 254
43-Year Average			948	3 154	2 195	45,234	47 803	42 506	36 800	2 407	480		140 965	6 391	86 544	48 025

TABLE 19 (CONTD)

TABLE 20

TABLE 20

MONTHLY COUNT OF SHAD AND PERCENT COUNTED OVER FISH LADDERS

BONNEVILLE DAM - 1938-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Percent by Fish Ladders Bradlis	Wash Shore
1938						39	3,184	1,502	527	21			5,273	58 1	41 9
1939					14	1,539	3,065	157	28				4,803	27 9	72 1
1940					48	12,931	9,178	72	1				22,230	42 3	57 7
1941					5	2,417	16,010	197	12	16			18,657	57 9	42 1
1942					2	38	11,341	1,473	5				12,859	70 3	29 7
1943						18	2,545	265	20				2,848	87 0	13 0
1944						287	16,568	248					17,103	62 8	37 2
1945						2,801	90,773	948	4				94,526	77 2	22 8
1946						3,895	16,073	415					20,383	44 3	55 7
1947					8	5,645	20,280	105	3				26,041	69 4	30 6
1948						8	6,458	1,953	2	1			8,422	69 1	30 9
1949						2,647	19,609	322	1				22,579	54 9	45 1
1950							7,265	548	3				7,816	92 7	7 3
1951						1,269	6,792	277	15				8,353	63 2	36 8
1952						487	2,595	45	4				3,131	54 8	45 2
1953						53	14,856	1,502	19				16,430	60 5	39 5
1954						34	3,848	1,136	11				5,029	57 5	42 5
1955						21	4,411	1,358	18				5,808	64 6	35 4
1956					1	67	6,838	1,168	11				8,085	27 9	72 1
1957						1,695	11,039	422	1	2			13,159	64 2	35 8
1958						3,885	6,257	59					10,201	49 1	50 9
1959					3	32	6,315	369	1				6,720	54 9	45 1
1960						35,259	57,443	594	72				93,368	53 2	46 8
1961						18,952	245,471	1,236	33	5			265,697	67 1	32 9
1962						43,689	387,554	4,657	82	4	2		435,988	55 1	44 9
1963					70	77,961	307,466	4,044	217	14			389,772	65 7	34 3
1964					19	3,203	236,321	13,008	121	2			252,674	63 6	36 4
1965					1	33,815	570,432	12,844	194	35	2		617,323	57 7	42 3
1966					94	181,187	367,643	7,988	545	51	5		557,513	58 9	41 1
1967			1	1		6,673	212,681	2,944	152	8			222,460	65 3	34 7

TABLE 20 (CONTD)

MONTHLY COUNT OF SHAD AND PERCENT COUNTED OVER FISH LADDERS

BONNEVILLE DAM - 1938- 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Percent by Fish Ladders Brad Is	Wash Shore
1968					800	107,881	183,878	1,387	121	10	1		294,078	59 0	41 0
1969			2	5	158	233,018	81,159	2,846	163	7			317,358	58 0	42 0
1970				2	250	228,519	99,659	566	262	18			329,276	71 8	28 2
1971					30	34,345	154,215	951	55	1			189,597		
1972					38	16,689	192,608	5,301	88	1			214,725	52 6	47 4
1973					116,057	377,830	24,701	577	38	4			519,207	82 9	17 1
1974					7	6,122	91,302	1,496	17	1			98,945	5 1	94 9
1975					11	43,712	219,133	1,349	38	3			264,246	42 8	57 2
1976					4	123,053	179,994	2,112	49	7			305,219	43 2	56 8
1977					51,709	431,540	11,818	568	76	12			495,723	67 4	32 6
1978					30	802,110	57,997	991	33	5			861,166	72 4	27 6
1979					800	994,253	43,734	658	258	141	13		1,039,857	86 4	13 6
1980					1,460	766,473	170,705	685	51	15	1		939,390	81 3	18 7
Total			3	8	171,619	4,605,092	4,181,214	81,343	3,351	384	24		9,044,038		
43-Year Average					3,991	107,095	97,238	1,892	78	9			210,326		

TABLE 20 (CONTD)

TABLE 21

YEARLY TOTALS OF SALMONID COUNTED OVER THE DALLES DAM

1957 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Chum	Pink	Total Salmonid
1957	312,678	129,361	90,201	6,793	75	4	539,112
1958	301,960	121,420	111,039	2,395	31	5	536,850
1959	207,461	156,090	86,259	2,709	25	9	452,553
1960	196,962	111,189	59,441	3,000	35	5	370,632
1961	201,335	134,572	16,689	2,139	-	4	354,739
1962	187,132	163,301	27,127	3,696	-	5	381,261
1963	180,969	118,957	56,931	3,716	23	3	360,599
1964	183,842	110,033	79,042	5,978	-	5	378,900
1965	195,049	141,052	44,279	17,468	1	3	397,852
1966	240,671	146,172	147,886	32,279	-	1	567,009
1967	280,112	121,614	120,589	32,015	1	4	554,335
1968	262,975	147,481	116,897	42,687	-	1	570,041
1969	314,258	112,529	37,226	17,054	-	1	481,068
1970	261,457	99,187	77,678	23,219	-	4	461,545
1971	250,528	151,348	76,103	29,061	-	3	507,043
1972	268,628	135,303	44,671	16,562	-	-	465,164
1973	280,945	100,082	52,303	11,152	-	1	444,483
1974	217,181	70,875	28,827	14,655	-	-	331,538
1975	217,283	57,675	43,198	13,976	-	-	332,132
1976	216,163	82,568	27,747	19,392	-	-	345,870
1977	224,950	133,882	86,252	10,021	-	-	455,105
1978	199,228	60,485	11,845	18,877	-	-	290,435
1979	150,647	83,364	32,791	8,726	-	4	275,532
1980	113,951	93,963	42,088	6,326	-	-	256,328
Total	5,466,365	2,782,503	1,517,109	343,896			10,110,126
24-Year Average	227,765	115,938	63,213	14,329			421 255

Table 22

TABLE 22

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER THE DALLES DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	12,434	15,441	7,948	12,832	12,881	43,675	8,740	-	-	113,951
STEELHEAD	-	-	-	2,885	790	2,134	15,114	30,755	34,447	7,838	-	-	93,963
SOCKEYE	-	-	-	-	-	11,096	30,046	927	19	-	-	-	42,088
COHO	-	-	-	-	-	-	-	287	5,064	975	-	-	6,326
TOTAL SALMONID	-	-	-	15,319	16,231	21,178	57,992	44,850	83,205	17,553	-	-	256,328
SHAD	-	-	-	-	4,966	774,495	379,615	1,526	146	4	-	-	1,160,752

TABLE 23
WATER TEMPERATURE AND STREAM FLOW DATA
THE DALLES - 1980

DATE	JANUARY			FEBRUARY			MARCH		
	WATER TEMP	DISCHARGE	TURBIDITY	WATER TEMP	DISCHARGE	TURBIDITY	WATER TEMP	DISCHARGE	TURBIDITY
1	43	101,800	5 5	35	148,100	3 0	38	128,200	1 0
2	43	132,000	5 2	35	141,900	3 0	39	108,200	1 5
3	42	125,400	4 9	35	120,100	3 0	39	128,800	1 5
4	42	125,300	4 9	35	126,500	3 0	40	158,300	1 2
5	42	142,800	5 0	35	125,000	3 0	39	196,500	1 3
6	42	122,300	5 2	35	130,600	1 5	40	167,100	1 3
7	41	184,700	5 2	35	120,300	1 7	40	170,400	1 5
8	41	170,000	5 0	35	148,400	1 8	41	127,300	1 7
9	40	219,700	5 0	35	140,200	1 3	41	116,800	2 0
10	40	189,900	5 0	35	112,400	1 5	41	131,900	2 0
11	40	185,900	5 0	35	131,700	1 4	42	162,800	2 0
12	40	139,500	5 5	35	160,400	1 5	42	190,300	1 8
13	40	123,800	6 0	35	171,300	1 4	42	199,100	1 8
14	40	149,200	0 6	35	196,200	1 4	42	181,600	1 2
15	39	160,900	0 4	36	213,500	1 3	42	119,700	1 0
16	39	176,200	0 2	35	131,800	1 7	42	116,200	1 1
17	39	129,400	0 2	36	108,500	1 6	42	163,600	1 9
18	39	127,100	0 4	36	142,300	1 6	42	148,700	2 0
19	38	158,600	0 7	36	133,000	0 6	42	130,900	2 3
20	38	120,100	0 8	37	129,900	1 0	42	127,600	2 3
21	38	148,300	0 8	37	164,600	0 8	42	140,900	2 5
22	38	159,500	0 8	37	177,900	0 6	43	133,800	2 5
23	37	168,500	0 8	37	127,600	0 8	43	115,800	2 5
24	37	147,500	1 0	37	119,000	1 0	43	128,900	2 5
25	37	130,000	1 5	37	123,400	1 2	43	113,200	2 4
26	37	183,900	1 6	38	118,900	1 1	43	123,100	2 3
27	37	136,500	1 8	38	155,400	1 1	43	120,200	2 2
28	37	195,800	1 8	38	135,000	1 0	43	129,400	2 3
29	36	225,800	1 8	38	142,900	1 0	44	123,000	2 3
30	36	184,000	3 0				44	113,300	2 3
31	35	196,600	3 0				44	132,300	2 3

TABLE 24

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 24

THE DALLES PROJECT

APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	CHUM				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1	21							54		129.4	.0	2.5	44.0
2	21							55		132.6	.0	2.3	44.0
3	24							45		122.3	.0	2.0	44.0
4	35			1				49		120.8	.0	2.2	45.0
5	43			5				54		118.1	.0	2.4	44.0
6	52			0				49		105.3	.0	2.4	45.0
7	55			7				58		130.0	.0	2.3	46.0
8	77			2				83		141.2	.0	2.6	46.0
9	55			4				60		142.2	.0	2.7	46.0
10	70			0				66		159.7	.0	3.0	46.0
11	170			10				131		148.6	.0	2.8	46.0
12	174			11				102		98.6	.0	3.0	46.0
13	178			21				97		103.0	.0	3.2	47.0
14	301			24				137		114.1	.0	3.2	48.0
15	420			41				174		109.7	.0	3.5	48.0
16	417			32				151		149.3	.0	3.3	48.0
17	434			35				181		140.2	.0	3.2	47.0
18	414			30				188		156.8	.0	3.2	48.0
19	716			28				175		130.4	.0	3.2	49.0
20	574			21				130		129.4	.0	3.2	50.0
21	404			47				134		174.5	.0	3.2	50.0
22	511			23				99		190.8	.0	3.0	50.0
23	531			70				126		210.1	.0	2.7	51.0
24	765			70				104		227.5	.0	2.5	51.0
25	750			41				74		195.5	.0	2.2	52.0
26	641			41				65		168.9	.0	2.1	52.0
27	855			56				46		142.8	.0	2.2	53.0
28	850			108				77		185.1	.0	2.4	53.0
29	1292			150				82		241.9	.0	2.4	53.0
30	783			94				43		256.8	.0	2.4	53.0
TOTALS	11578			1060				2885					
AVERAGES	574			59				96		152.8	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 25

THE DALLES PROJECT

U S. ARMY ENGINEER DISTRICT, PORTLAND

MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	725			87				27		263.4	.0	1.8	54.0
2	554			91				30		272 8	.0	1.5	54 0
3	616			134				20		275.9	.0	2.5	55.0
4	782			159				23		219.3	.0	2.0	55.0
5	884			242				28		233.2	.0	1.8	56.0
6	700			218				49		257.5	5.8	1.7	56.0
7	710			173				26		295.6	.0	1.9	56.0
8	663			177				45		286.4	.0	2.0	56.0
9	732			215				28		281.9	.0	2.0	56.0
10	487			158				30		271.2	.0	1.9	56.0
11	425			114				15	1	272 9	.0	2.0	56.0
12	493			125				30	7	244.9	.0	2.2	57.0
13	423			111				23	17	246.4	.0	2.2	57.0
14	374			177				23	33	235.4	.0	2.2	56.0
15	453			117				20	24	215.4	0	1.8	56.0
16	436			165				29	23	241.3	.0	1.8	56.0
17	286			84				44	97	236.4	.0	2.0	56.0
18	189			91				26	211	241.3	.0	2.2	57.0
19	202			77				36	244	210.5	.0	1.8	57.0
20	279			184				20	543	232.8	.0	2.0	57.0
21	295			160				38	842	238.4	.0	2.2	57.0
22	214			97				27	276	250.5	.0	1.8	58.0
23	221			86				23	172	285.4	.0	1.8	57.0
24	180			61				19	234	269.4	.0	2.0	57.0
25	158			46				17	272	236.3	.0	1.8	57.0
26	56			23				16	143	235.4	.0	1.8	57.0
27	61			21				11	49	234.0	.0	1.8	56.0
28	50			18				9	238	252.2	28.2	1.8	56.0
29	82			14				24	370	285.0	.0	2.0	56.0
30	89			46				8	367	306.5	91.7	2.0	56.0
31	88			63				26	803	287.3	84.2	2.3	56.0
TOTALS	11907			3534				790	4966				
AVERAGES	384			114				25	236	253.7	6.8		

TABLE 26

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 26 — THE DALLES PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	87			43				23	1265	269.5	88.5	2.0	57.0
2	68			32				13	896	297.3	19.3	2.4	57.0
3	98			34				15	1230	287.1	.3	2.4	57.0
4		132		50				26	4089	274.8	.0	2.2	57.0
5		137		34				19	1865	252.6	2.6	2.0	58.0
6		115		17				22	1633	278.9	25.0	1.6	58.0
7		129		14				31	3219	295.0	105.9	1.6	57.0
8		147		20				35	6318	290.2	165.0	1.6	58.0
9		106		21				33	5023	282.0	37.3	1.7	57.0
10		140		30			4	36	8731	289.8	35.9	1.7	58.0
11		99		36			7	44	17190	287.5	29.0	1.7	58.0
12		113		36			8	38	21745	295.5	26.9	1.7	59.0
13		226		35			22	54	27441	286.0	35.1	1.7	59.0
14		145		26			18	41	18030	291.7	114.5	2.0	59.0
15		194		21			32	48	22416	269.0	96.2	2.3	59.0
16		127		23			51	43	30358	279.2	43.1	2.3	59.0
17		200		33			57	56	18533	312.0	88.0	2.1	59.0
18		187		30			61	77	30306	338.0	98.7	2.6	59.0
19		229		18			78	63	43212	323.2	79.9	2.6	60.0
20		260		43			212	81	54595	286.9	39.7	2.5	60.0
21		234		22			239	77	69478	288.9	28.7	2.5	61.0
22		314		25			458	89	64818	277.3	64.6	2.5	62.0
23		266		23			444	88	51959	280.0	20.2	2.6	62.0
24		331		37			689	148	65660	292.0	17.6	2.6	62.0
25		368		47			888	118	49639	290.6	.0	2.4	62.0
26		444		48			987	165	29121	292.0	2.9	2.0	62.0
27		409		46			1408	120	23342	248.1	.0	2.3	62.0
28		462		51			1212	155	32917	191.7	.0	2.2	62.0
29		738		76			2617	175	40099	175.3	.0	2.8	62.0
30		441		31			1604	201	29367	218.6	0	2.6	62.0
TOTALS	253	6693		1002			11096	2134	774495				
AVERAGES	84	248		33			528	71	25816	277.4	42.2		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 27

THE DALLES PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SFFCHI)	(DEG F)
1		522		49			2546	176	44747	207.9	.0	2.6	62.0
2		488		28			2321	197	38434	152.4	.0	3.2	62.0
3		387		61			2114	162	54306	182.0	.0	2.7	63.0
4		579		69			2419	221	59640	134.3	.0	3.0	62.0
5		541		63			2063	237	32459	192.6	.0	3.0	62.0
6		689		91			2724	294	35433	196.3	.0	2.5	63.0
7		455		120			1915	273	25137	189.1	.0	3.0	63.0
8		350		74			1041	172	19006	191.3	.0	3.0	64.0
9		425		82			1929	290	14279	199.1	.0	3.0	65.0
10		325		82			1571	255	5503	187.8	.0	3.0	64.0
11		379		38			1705	290	12587	201.1	.0	3.0	65.0
12		431		51			1365	251	6858	136.3	.0	3.1	65.0
13		529		61			1233	396	6681	113.8	.0	3.1	65.0
14		315		67			680	377	4489	152.8	.0	3.5	65.0
15		325		52			624	414	3219	177.3	.0	3.5	65.0
16		186		41			660	337	3560	167.5	.0	3.5	66.0
17		299		58			592	400	2960	142.6	.0	4.0	66.0
18		222		43			448	417	2370	143.3	.0	4.0	66.0
19		271		29			348	393	1313	130.3	.0	4.0	66.0
20		470		50			356	537	1222	145.6	.0	4.0	66.0
21		239		24			181	466	1011	170.4	.0	3.9	67.0
22		339		48			212	774	1275	170.1	.0	4.0	67.0
23		368		23			172	816	677	147.2	.0	4.0	69.0
24		331		35			223	1148	500	144.9	.0	4.0	69.0
25		282		27			117	651	571	138.9	.0	4.0	68.0
26		324		42			118	1172	541	134.9	.0	4.5	69.0
27		292		42			106	881	239	112.4	.0	4.5	69.0
28		251		42			55	768	216	114.5	.0	5.0	69.0
29		228		18			90	622	135	119.2	.0	5.0	69.0
30		247		29			52	988	102	134.3	.0	5.0	69.0
31		237		11			66	739	145	134.8	.0	5.0	69.0
TOTALS		11282		1550			30046	15114	379615				
AVERAGES		364		50			969	488	12246	156.9	.0		

TABLE 28

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 28

THE DALLES PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

AUG 1980

FISH COUNTS

RIVER CONDITIONS

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1		168		36			49	661	97	135.6	.0	5.0	70.0
2		234		43			77	657	96	101.5	.0	5.1	70.0
3		195		39	2		35	847	61	109.8	.0	4.0	70.0
4			249	56			83	800	71	128.4	.0	4.0	70.0
5			141	39			44	934	92	137.5	.0	4.7	70.0
6			196	41			74	484	100	134.5	.0	5.0	69.0
7			234	60	2		106	569	110	132.4	.0	4.9	69.0
8			270	71	3	1	128	704	152	123.3	.0	4.4	70.0
9			230	26	16	5	42	660	68	93.2	.0	4.4	70.0
10			210	28	31	2	68	618	86	86.6	.0	4.7	71.0
11			239	15	44		24	775	50	135.4	.0	4.6	71.0
12			269	38	13		17	952	36	131.4	.0	4.6	71.0
13			142	29	18		24	639	41	127.7	.0	4.5	70.0
14			291	32	13	2	19	1118	14	104.1	.0	4.8	70.0
15			180	34	1		1	1193	24	107.2	.0	4.8	70.0
16			285	51	2		2	1469	33	107.4	.0	5.0	70.0
17			326	52	1	1	1	1307	29	92.1	.0	5.0	70.0
18			162	47	6	1	3	947	15	119.6	.0	4.5	70.0
19			165	30	3		8	1009	13	138.4	.0	4.5	69.0
20			312	53	17		37	1032	27	123.4	.0	4.5	69.0
21			227	30	3	4	6	941	14	110.9	.0	4.5	69.0
22			437	109	2		8	1257	19	119.4	.0	4.0	69.0
23			355	102	1	1	5	1046	9	90.3	.0	4.0	69.0
24			909	150	1		22	1630	10	69.8	.0	4.5	69.0
25			458	97	2		4	1138	25	95.8	.0	4.0	69.0
26			638	129	4	3	2	1064	10	136.6	.0	4.5	69.0
27			625	165	5	3	7	1623	10	117.9	.0	4.8	68.0
28			399	81	3	2	18	1038	59	121.0	.0	4.5	68.0
29			731	108	20	4	8	1208	80	118.2	.0	4.5	68.0
30			756	186	8	7		1217	19	114.8	.0	4.5	67.0
31			710	161	25	5	5	1218	56	110.3	.0	4.5	67.0
TOTALS		597	10146	2138	246	41	927	30755	1526				
AVERAGES		199	362	69	9	3	31	992	49	115.3	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 29

THE DALLES PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			843	105	24	2	16	1039	13	111.5	.0	4.5	67.0
2			836	261	14	9		1132	6	112.4	.0	4.0	67.0
3			577	181	12	2		964	9	105.5	.0	4.0	67.0
4			549	253	17	10		1010	21	113.9	.0	4.7	67.0
5			907	349	26	36		1463	6	107.4	.0	4.5	68.0
6			1641	279	47	46		1720	7	92.6	.0	4.5	67.0
7			2237	361	75	76		1908	14	67.2	.0	4.5	67.0
8			1543	308	129	31		1175	12	118.7	.0	4.5	67.0
9			1401	217	65	73		857	5	108.7	.0	4.5	66.0
10			1757	509	57	86		1330	13	99.7	.0	4.5	67.0
11			1168	332	67	93		1230	4	101.3	.0	4.5	67.0
12			1631	540	223	168		1563	5	98.6	.0	4.5	66.0
13			1621	441	72	60		2034	2	81.2	.0	4.5	66.0
14			1220	361	103	91		1444	3	71.0	.0	4.5	66.0
15			610	259	52	53		640	2	95.3	.0	4.5	66.0
16			1161	313	108	132		1060	3	110.4	.0	4.5	66.0
17			453	357	44	69		998	2	121.3	.0	4.5	66.0
18			1122	362	99	128		1516	2	114.2	.0	4.0	66.0
19			941	242	119	123	1	896	4	115.6	.0	4.5	66.0
20			1123	221	133	91	2	857	3	96.5	.0	4.5	65.0
21			1739	289	163	112		1280	4	77.1	.0	5.0	65.0
22			1127	373	166	105		1056	2	98.8	.0	4.7	64.0
23			1375	372	78	65		1386	1	118.6	.0	4.8	64.0
24			1191	271	126	110		1231	1	99.4	.0	5.0	65.0
25			977	290	87	118		841		107.5	.0	5.0	65.0
26			1525	373	109	161		784		113.8	.0	5.0	65.0
27			1042	256	107	127		888	1	113.9	.0	5.3	65.0
28			1094	252	115	140		994		96.8	.0	5.0	65.0
29			684	160	84	88		681	1	111.0	.0	4.7	65.0
30			603	90	69	69		468		118.9	.0	5.0	65.0
TOTALS			34698	8977	2590	2474	19	34447	146				
AVERAGES			1157	299	86	82	6	1148	6	103.3	.0		

TABLE 30

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 30

THE DALLES PROJECT

OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			1136	211	127	76		557		99.5	.0	5.3	64.0
2			551	100	40	33		509		112.4	.0	5.0	64.0
3			528	131	48	27		562		132.0	.0	5.0	65.0
4			403	176	91	59		503		84.2	.0	5.0	65.0
5			666	147	44	23		502		65.7	.0	5.0	65.0
6			255	119	55	49		374		93.2	.0	5.0	65.0
7			407	171	39	54		414		88.6	.0	5.0	65.0
8			293	111	18	13		367		86.7	.0	5.0	65.0
9			156	66	10	14		286		97.9	0	5.0	64.0
10			102	60	9	15		227		95.2	.0	5.0	64.0
11			298	55	12	21		213		94.9	.0	5.0	64.0
12			307	43	4	6		245		58.6	.0	5.0	64.0
13			151	29	4	10		236		80.2	.0	5.0	64.0
14			71	46	4	12		325		114.0	.0	5.0	64.0
15			121	45	7	7		295		123.4	.0	5.0	63.0
16			156	35	4	5		292		113.6	.0	5.0	63.0
17			90	33	6	7		271	2	122.3	.0	5.0	62.0
18			86	22	5	2		240		113.6	.0	5.0	64.0
19			103	15	4	2		199	1	88.2	.0	5.0	64.0
20			52	22	1	2		104	1	123.6	.0	4.5	63.0
21			22	10	0	3		87		105.3	.0	5.0	61.0
22			30	12	0	0		177		100.8	.0	4.5	61.0
23			47	5	1	4		124		111.3	.0	4.5	60.0
24			44	10	2	3		156		107.9	0	4.8	59.0
25			36	10	1	1		107		102.0	.0	5.5	59.0
26			40	13				134		73.5	.0	4.8	59.0
27			36	16				100		128.6	.0	4.5	58.0
28			44	9				108		119.6	.0	5.0	58.0
29			53	12	2	2		102		111.7	.0	4.5	58.0
30			67	15	5	2		122		107.8	.0	4.5	57.0
31			37	6	1	1		95		121.4	.0	4.5	56.0
TOTALS			6985	1755	520	455		7638	4				
AVERAGES			225	57	19	16		253	1	102.6	.0		

TABLE 31
WATER TEMPERATURE AND STREAM FLOW DATA
THE DALLES - 1980

DATE	NOVEMBER			DECEMBER		
	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY
1	56	113,000	4.5	48	124,900	5.1
2	56	94,100	4.5	49	126,600	5.0
3	56	119,800	4.5	48	155,500	5.0
4	56	111,600	4.5	48	172,100	4.8
5	56	114,300	4.5	48	176,200	4.5
6	55	109,900	5.0	48	157,700	4.8
7	55	113,900	5.0	47	133,900	4.8
8	55	105,700	5.0	47	175,000	4.8
9	55	91,900	5.0	46	176,400	6.0
10	54	135,500	5.0	46	159,900	5.0
11	54	122,400	5.0	46	175,000	6.0
12	53	147,000	5.0	46	165,300	6.0
13	53	170,500	5.0	46	160,100	6.0
14	54	157,300	5.0	44	127,800	5.5
15	54	111,300	5.0	44	152,800	5.5
16	53	109,100	5.0	44	153,600	5.5
17	53	124,200	5.0	43	159,800	5 0
18	53	114,700	5.0	43	170,300	5.0
19	52	134,100	5.0	43	163,700	5.0
20	52	133,200	5.0	43	141,300	5.5
21	53	145,800	4.6	43	121,000	5.5
22	52	156,300	4.6	43	137,000	6.0
23	51	123,000	4.5	44	152,200	6 0
24	50	143,500	4.4	44	182,100	6.0
25	50	140,700	4.4	44	137,800	6.0
26	50	148,500	4.5	44	184,900	5.0
27	50	122,300	4.4	44	237,400	4.0
28	50	144,000	4.5	44	265,800	5.0
29	49	121,800	4.8	44	245,300	3.0
30	49	105,900	4.9	44	253,400	4.0
31				45	253,200	4.0

Table 32

TABLE 32

PEAK DAYS OF FISH MIGRATION

THE DALLES DAM - 1957-1980

Year	Spring Chinook Date	Spring Chinook Number of Fish	Summer Chinook Date	Summer Chinook Number of Fish	Fall Chinook Date	Fall Chinook Number of Fish	Steelhead Date	Steelhead Number of Fish	Sockeye Date	Sockeye Number of Fish	Coho Date	Coho Number of Fish	Chum Date	Chum Number of Fish	Shad Date	Shad Number of Fish
1957	May 1	11,098	Jun 21	8,066	Sep 7	4,353	Jul 31	3,368	Jun 25	4,753	Sep 16	500	Nov 22	12	Jul 13	629
1958	May 10	5,407	Jun 19	4,134	Sep 17	9,694	Sep 15	5,409	Jul 9	6,346	Sep 4,5	174	Oct 31	4	Jun 26	336
1959	Apr 26	2,202	Jun 24	2,882	Sep 16	4,228	Jul 27	4,784	Jul 10	6,583	Sep 13	254	Nov 24	4	Jul 20	400
1960	May 4	4,414	Jun 16	4,827	Sep 7	3,336	Jul 28	3,144	Jun 25	3,661	Sep 3	258	Nov 3	4	Jul 3	4,934
1961	Apr 30	5,762	Jun 22	2,093	Sep 7	4,251	Sep 8	6,030	Jun 29	1,199	Sep 8	159	None		Jul 6	9,172
1962	Apr 28	4,104	Jun 17	3,005	Sep 3	3,463	Sep 10	5,731	Jul 8	1,511	Sep 16	227	None		Jul 15	14,039
1963	May 2	2 777	Jun 17	1,575	Sep 7	5,032	Jul 31	4,075	Jul 2	3,930	Sep 17	413	Oct 24	5	Jul 6	9,917
1964	Apr 26	3,35[illegible]	Jun 29	2,390	Sep 7	4,134	Jul 28	3,235	Jul 7	6,571	Sep 14	310	None		Jul 13	13,859
1965	May 13	2,155	Jun 26	2,115	Sep 10	7,726	Jul 27	5,217	Jul 2	3,866	Sep 13	841	Oct 23	1	Jul 6	24,203
1966	Apr 18	5,607	Jul 1	2,004	Sep 18	3,275	Jul 19	3,242	Jul 1	8,436	Sep 4	1,743	None		Jul 12	15,926
1967	Apr 23	5,320	Jul 2	3,444	Sep 17	8,273	Sep 18	4,427	Jul 8	9,551	Sep 9	3,061	Sep 30	1	Jul 8	9,733
1968	Apr 24	5,129	Jun 30	2,054	Sep 10	5,299	Aug 31	4,634	Jun 28	10,962	Sep 7	2,895	None		Jul 6	14,582
1969	May 10	6,638	Jun 21	3,633	Sep 13	8,182	Sep 7	2,725	Jul 5	2,185	Sep 18	849	None		Jun 22	32,588
1970	Apr 18	4,557	Jun 27	1,618	Sep 13	9,321	Sep 11	4,087	Jul 4	3,859	Sep 13	1,746	None		Jun 27	20,903
1971	Apr 30	4,961	Jul 4	1,734	Sep 11	8,072	Sep 4	7,004	Jul 9	5,673	Sep 6	2,542	None		Jul 18	13,921
1972	Apr 25	7,510	Jul 8	1,879	Sep 11	7,910	Sep 18	5,473	Jul 7	2,554	Sep 16	1,367	None		Jul 7	18,477
1973	Apr 21	10,513	Jul 2	991	Sep 9	10,512	Sep 8	2,803	Jul 3	3,394	Sep 9	729	None		Jun 6	40,725
1974	May 9	2,917	Jul 6	1,313	Sep 11	7,276	Jul 21	1,472	Jul 5	2,385	Sep 11	745	None		Jul 7	15,189
1975	May 11	2,331	Jul 16	1,356	Sep 7	7,633	Jul 28	1,363	Jul 6	4,111	Sep 13	788	None		Jul 8	27,816
1976	Apr 30	2,959	Jul 4	1,125	Sep 14	7,421	Jul 27	1,786	Jul 1	1,720	Sep 16	1,328	None		Jul 3	29,617
1977	Apr 17	5,162	Jun 25	1,259	Sep 11	4,967	Sep 10	3,890	Jun 26	6,128	Sep 16	568	None		Jun 10	72,772
1978	Apr 23	4,324	Jul 4	1,043	Sep 14	4,543	Sep 13	2,043	Jun 27	803	Sep 13	840	None		Jun 9	71,286
1979	Apr 28	1,149	Jun 27	811	Sep 13	4,744	Aug 31	1,956	Jun 27	1,872	Sep 15	491	None		Jun 24	93,494
1980	Apr 29	1 442	Jun 29	814	Sep 9	2 598	Sep 13	2 034	Jul 6	2,724	Sep 12	391	None		Jun 21	69 478

TABLE 33
MONTHLY COUNT OF CHINOOK SALMON
THE DALLES DAM - 1957 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Jan 1- Jun 3	SUMMER Jun 4- Aug 3	FALL Aug 4- Dec 31	Jacks
1957			22	42,161	59,410	86,096	35,643	28,828	56,753	3,564	201		312 678	109,723	116,661	86,294	37 374
1958			114	8,268	47,862	59,955	24,381	17,211	141,262	2 788	119		301,960	61 747	80,139	160,074	19 747
1959			8	16,771	32,634	27,799	42,817	20,142	65,229	2,022	39		207,461	50,874	71,362	85,225	39,857
1960				17,073	40,091	52,577	22,549	15,225	46,453	2,720	274		196,962	58,406	75 315	63,241	30,847
1961				43,822	35,059	24,478	24,596	16,866	53,371	3,143			201,335	79,183	50,824	71,328	35,409
1962				33,069	35,629	34,488	21,515	13,461	46,135	2,835			187,132	69,139	57,007	60,986	17 835
1963				19 119	33,207	25,063	20,414	21,865	57,248	4,053			180,969	52,937	47,333	80,699	54,749
1964			340	35,551	24,447	16,801	37,697	17,452	49,811	1,743			183,842	60,691	56,360	66 791	30,900
1965			190	17,870	24,930	17,900	31,072	25,119	74,904	3,064			195,049	43,617	50,527	100,905	67,552
1966			1,068	72,267	22,837	25,530	33,712	14,978	65,380	4,899			240,671	96,628	61,062	82 981	36,482
1967				48,744	22,817	24,718	45,346	23,927	107,427	7,133			280,112	71,976	72,582	135,554	98,817
1968			100	52,144	45,057	32,827	33,272	22,361	72,209	4,800	205		262,975	98,742	67,391	96,842	64,644
1969			65	19,025	80,162	33,432	27,750	29,330	118,890	5,604			314,258	100,482	61,978	151,798	96,244
1970				53 370	29,670	22 903	23,318	34,906	93,633	3,657			261,457	83,549	48,115	129,793	85,471
1971				28,227	44,181	22,011	29,655	16,190	103,370	6,894			250,528	73,655	51,847	125,026	75,329
1972				68,955	33,508	17,354	29,756	21,828	91,666	5,561			268,628	103,107	48,660	116,861	81,668
1973				94,334	15,040	19,548	19,181	23,341	101,771	7,730			280,945	111,088	38,774	131,083	72,088
1974				13,415	41,902	7 141	22,709	13,964	103,804	14,246			217,181	56,397	30,273	130 511	79,840
1975				18,526	32,869	12 155	26,447	28,973	90,193	8,120			217,283	52,483	39,062	125,738	74 418
1976				20,266	35,434	17,828	20,129	17,278	90,933	14,295			216,163	56,570	38 733	120 860	74,275
1977				72,726	16,672	22,084	22,059	12,266	69,927	9,216			224,950	90,373	44,378	90,199	55,067
1978				52,425	30,472	19,477	15,978	11,251	57,786	11,839			199 228	84,924	34,396	79,908	32 503
1979				13,993	12,569	14,310	17,687	20,458	61,757	9,516	357		150,647	27,297	32 298	91 052	42,886
1980				12,434	15,441	7,948	12,832	12,881	43,675	8,740			113,951	28,237	21,113	64,581	20,016
Total			1 907	874,555	811,900	644,423	640,515	480,101	1,863,587	148 182	1,195		5,466,365	1,721,825	1 296,190	2,448,330	1,324,018
24-Year Average				36 440	33,829	26,851	26 688	20,004	77,649	6,174			227 765	71,743	54,008	102,014	55 167

Table 34

TABLE 34

MONTHLY COUNT OF SOCKEYE SALMON

THE DALLES - 1957 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1957					125	33,476	54,294	2,081	221	4			90,201
1958					29	28,854	80,324	1,583	248	1			111,039
1959					413	7,176	76,347	2,245	77	1			86,259
1960					2	36,907	22,228	297	7				59,441
1961					66	5,863	10,629	116	15				16,689
1962					55	8,333	18,545	180	14				27,127
1963					199	17,914	38,633	185	-				56,931
1964					23	9,984	68,205	758	72				79,042
1965					184	11,023	31,622	1,438	12				44,279
1966					65	36,539	109,167	2,106	9				147,886
1967					114	15,713	103,862	892	8				120,589
1968					5	77,878	38,542	462	10				116,897
1969					22	15,165	21,933	102	3	1			37,226
1970					1	18,309	56,903	2,387	75	3			77,678
1971					-	8,887	66,841	369	6				76,103
1972					-	9,276	34,924	466	5				44,671
1973					8	19,510	32,674	105	6				52,303
1974					4	3,935	24,790	98	-				28,827
1975					-	7,679	35,291	225	2	1			43,198
1976					1	10,988	16,637	121	-				27,747
1977					5	60,049	26,146	52	-				86,252
1978					24	7,158	4,559	104	-				11,845
1979					-	14,750	17,734	307	-				32,791
1980					-	11,096	30,046	927	19				42,088
Total					1,345	476,462	1,020,876	17,606	809	11			1,517,109
24-Year Average					56	19,853	42,536	734	34				63,213

TABLE 35

MONTHLY COUNT OF COHO SALMON

THE DALLES - 1957 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total*	Jacks
1957							220	605	5,615	342	11		6,793	
1958								96	2,132	161	6		2,395	
1959								46	2,428	234	1		2.709	
1960								475	2,288	227	10		3,000	
1961							4	5	1,898	232			2,139	
1962							5	258	3,194	239			3,696	
1963							2	361	2,931	422			3,716	
1964								506	4,723	749			5,978	
1965							7	200	13,064	4,197			17,468	
1966							225	3,850	25,476	2,728			32,279	
1967							192	494	27,860	3,469			32,015	20,456
1968							372	3,319	36,568	2,346	82		42,687	13,035
1969							412	970	13,179	2,493			17,054	11,218
1970							96	2,064	19,983	1,076			23,219	11,327
1971							1	1,589	26,066	1,405			29,061	11,174
1972							3	1,090	14,564	905			16,562	10,272
1973								793	9,443	916			11,152	5,256
1974								522	10,715	3,418			14,655	9,054
1975								465	10,356	3,155			13,976	8,534
1976								608	14,609	4,175			19,392	13,083
1977							1	91	8,131	1,798			10,021	6,096
1978								355	13,069	5,453			18,877	13,533
1979								211	7,109	1,367	39		8,726	4,836
1980								287	5,064	975			6,326	2,970
Total							1,540	19,260	280,465	42,482	149		343,896	140,844
24-Year Average							64	802	11,686	1,770			14,329	10,060**

* *Total including Jacks*

** 14-Year average Coho Jacks

Table 36

TABLE 36

MONTHLY COUNT OF STEELHEAD TROUT

THE DALLES DAM - 1957 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Spring & Summer Run Total *	Sep	Oct	Nov	Dec	Total
1957			1,603	951	977	4,782	45,445	33,319	87,077	35,396	6,545	343		129,361
1958			122	274	1,898	4,906	20,384	11,442	39,026	75,036	6,846	512		121,420
1959			1	541	502	2,227	46,271	60,841	110,383	41,026	4,502	179		156,090
1960				289	557	2,591	28,218	32,667	64,322	42,447	4,021	399		111,189
1961				305	307	1,396	21,906	17,850	41,764	87,344	5,464			134,572
1962				528	252	1,068	36,609	31,507	69,964	87,463	5,874			163,301
1963				153	451	1,361	30,485	25,360	57,810	48,066	13,081			118,957
1964			50	369	127	493	36,773	31,742	69,554	38,197	2,282			110,033
1965			36	502	484	896	60,522	21,132	83,572	53,389	4,091			141,052
1966		25	788	933	600	3,816	52,975	26,382	85,519	53,721	6,932			146,172
1967				258	183	435	27,914	22,746	51,536	56,082	13,996			121,614
1968			23	691	344	973	20,974	58,866	81,871	57,666	7,456	488		147,481
1969			54	953	414	1,442	33,952	22,963	59,778	44,146	8,605			112,529
1970				337	172	733	15,905	32,752	49,899	44,823	4,465			99,187
1971				408	233	821	40,712	31,812	73,986	69,602	7,760			151,348
1972				463	159	604	35,569	30,631	67,426	63,748	4,129			135,303
1973				723	326	1,981	29,067	25,437	57,534	38,017	4,531			100,082
1974				529	1,362	1,859	24,779	21,835	50,364	15,059	5,452			70,875
1975				1,018	1,334	1,973	18,046	20,531	42,902	11,519	3,254			57,675
1976				768	1,604	3,357	22,021	30,386	58,136	21,586	2,846			82,568
1977				1,666	1,332	5,038	42,859	13,022	63,917	61,678	8,287			133,882
1978				834	1,378	3,459	13,493	11,457	30,621	26,189	3,675			60,485
1979				478	244	1,942	23,054	21,974	47,692	20,961	14,079	632		83,364
1980				2,885	790	2,134	15,114	30,755	51,678	34,447	7,838			93,963
Total		25	2,677	16,857	16,030	50,287	743,047	667,409	1,496,332	1,127,608	156,011	2,553		2,782,504
24-Year Average				782	668	2,095	30,960	27,809	62,347	46,984	6,500			115,938

* Subtotal through 31 August

TABLE 37

YEARLY TOTALS OF SALMONID FISH COUNTED OVER JOHN DAY DAM

1968-1980

Year	Chinook	Steelhead	Sockeye	Coho	Total Salmonid
1968	233,654	121,256	87,847	38,233	480,990
1969	276,051	86,348	39,847	13,589	415,835
1970	222,506	82,440	78,133	19,543	402,622
1971	193,881	115,977	72,232	40,830	422,920
1972	225,631	141,628	51,793	17,533	436,585
1973	249,492	101,440	64,744	13,359	429,035
1974	167,888	43,756	33,121	14,651	259,416
1975	159,079	32,651	50,774	6,305	248,809
1976	175,911	59,808	30,446	5,806	271,971
1977	194,931	102,558	85,701	1,123	384,313
1978	174,852	44,188	13,778	8,355	241,173
1979	118,154	55,877	43,630	5,061	222,722
1980	100,664	78,199	50,675	1,924	231,462
Total	2,492,694	1,066,126	702,721	186,312	4,447,853
13-Year Average	191,746	82,010	54,055	14,332	342,142

TABLE 38

TABLE 38

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER JOHN DAY DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	7,995	18,311	7,125	12,522	9,063	37,023	8,625	-	-	100,664
STEELHEAD	-	-	-	4,131	555	577	5,850	18,114	34,700	14,272	-	-	78,199
SOCKEYE	-	-	-	-	-	9,596	40,536	530	13	-	-	-	50,675
COHO	-	-	-	-	-	-	-	27	1,431	466	-	-	1,924
CHUM	-	-	-	-	-	-	-	-	-	-	-	-	-
PINK	-	-	-	-	-	-	-	-	-	1	-	-	1
TOTAL SALMONID	-	-	-	12,126	18,866	17,298	58,908	27,734	73,167	23,364	-	-	231,463
SHAD	-	-	-	-	687	332,549	304,451	331	18	1	-	-	638,037

TABLE 39
WATER TEMPERATURE AND STREAM FLOW DATA
JOHN DAY - 1980

DATE	JANUARY			FEBRUARY			MARCH		
	WATER TEMP	DISCHARGE	TURBIDITY	WATER TEMP	DISCHARGE	TURBIDITY	WATER TEMP	DISCHARGE	TURBIDITY
1	41 2	106,600	5 0	33 2	154,000	4 5	36 6	122,200	1 3
2	41 1	134,200	5 0	33 1	137,500	4 6	36 9	104,900	1 3
3	40 8	124,100	5 5	33 0	123,300	4 4	37 7	126,400	1 3
4	40 7	132,300	5 5	32 5	127,700	4 4	38 9	152,700	1 3
5	40 3	144,500	5 5	33 1	124,900	4 4	38 5	191,900	1 3
6	40 0	125,900	5 5	32 6	130,700	1 5	38 8	168,100	1 3
7	39 7	182,300	5 5	32 7	123,000	1 5	39 0	170,700	1 3
8	39 5	174,800	4 0	33 0	149,500	1 5	39 6	128,800	1 3
9	39 2	223,600	5 0	33 2	142,700	1 7	39 7	113,800	1 5
10	39 0	200,200	5 0	33 5	112,300	1 4	39 8	128,700	1 3
11	38 7	191,400	5 0	33 6	133,400	1 4	40 0	162,600	1 3
12	38 4	140,700	5 0	33 8	163,100	1 4	40 3	190,400	1 4
13	38 3	109,800	4 0	34 1	173,000	1 4	40 6	197,800	1 5
14	37 9	137,900	3 4	34 5	207,600	1 4	40 6	178,100	1 2
15	37 6	152,000	3 4	34 9	218,500	1 7	37 6	118,200	1 2
16	37 1	178,400	2 7	34 9	134,600	1 7	38 8	113,700	1 0
17	37 0	122,000	2 7	34 9	107,900	1 7	39 0	166,500	1 0
18	36 8	125,300	1 2	35 0	143,600	1 9	39 2	149,200	1 8
19	36 8	152,700	1 3	35 1	132,900	2 0	39 4	130,100	1 8
20	36 5	118,100	1 3	35 1	129,000	2 0	39 8	125,700	1 8
21	36 6	146,200	1 3	35 1	167,800	2 0	40 1	144,900	2 0
22	36 3	157,500	1 0	34 7	181,900	2 1	39 9	137,200	2 0
23	36 2	167,100	1 0	35 5	126,500	1 8	40 1	116,900	2 0
24	36 3	148,200	1 0	35 8	118,500	2 0	40 1	129,700	2 0
25	36 2	130,100	1 0	35 7	124,200	2 0	40 1	114,700	2 0
26	35 7	184,600	2 3	35 9	115,200	1 2	40 4	125,100	2 0
27	35 3	142,400	2 4	35 9	153,100	1 1	40 5	121,800	1 7
28	35 3	198,500	2 5	36 0	132,400	1 2	40 7	129,800	2 0
29	34 7	232,400	2 5	36 3	142,500	1 3	41 0	122,600	2 0
30	33 8	183,600	2 5				41 2	113,500	2 0
31	33 5	200,800	4 5				41 3	135,100	2 0

TABLE 40

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 40 — JOHN DAY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	0							47		127.3	.0	2.1	41.6
2	7							77		141.2	.0	2.2	41.7
3	2							158		120.0	.0	2.2	41.7
4	10							98		128.7	.0	2.5	41.8
5	13							171		120.2	.0	2.9	42.8
6	12							105		104.4	.0	2.9	42.7
7	8							152		131.5	.0	2.5	42.5
8	15							173		142.5	.0	2.5	42.6
9	23			1				138		141.3	.0	2.9	43.3
10	52							133		163.3	.0	2.5	43.1
11	24							149		151.8	.0	2.5	43.5
12	42			1				223		91.2	.0	2.2	43.6
13	145							219		110.2	.0	2.2	45.4
14	108							112		115.1	.0	2.2	44.8
15	67			10				189		111.0	.0	2.2	44.6
16	234			9				252		151.4	.0	2.5	44.9
17	130			5				225		142.9	.0	2.5	46.3
18	364			13				197		158.2	.0	2.7	45.8
19	591			13				225		134.0	.0	2.7	46.3
20	484			12				195		130.1	.0	2.7	47.1
21	250			15				125		168.1	.0	2.0	48.2
22	222			13				141		194.1	.0	2.0	48.5
23	189			12				104		214.8	.0	1.8	48.8
24	477			45				96		237.3	2.3	2.7	49.0
25	751			45				54		189.4	.0	2.3	50.3
26	567			26				98		175.6	.0	2.0	49.8
27	918			78				95		141.1	1.1	2.0	50.6
28	670			117				73		187.6	.0	2.0	51.1
29	478			58				45		255.7	1.5	2.2	50.8
30	778			91				62		270.4	3.0	2.2	51.6
TOTALS	7431			564				4131					
AVERAGES	248			51				138		155.0	.3		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 41

JOHN DAY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1	507			49				57		276.9	2.5	1.5	51.4
2	491			75				31		283.9	4.8	1.5	51.6
3	498			81				40		243.7	4.5	1.1	52.2
4	950			93				27		221.3	4.5	1.6	52.6
5	949			220				17		249.4	2.7	1.6	53.7
6	999			247				50		268.9	7.5	2.4	53.2
7	863			184				20		316.5	37.9	2.4	53.3
8	959			307				23		302.1	23.6	2.4	53.1
9	684			248				31		300.8	18.9	2.4	53.2
10	597			216				50		284.6	5.2	2.4	53.4
11	753			250				29		291.2	4.6	2.4	53.4
12	456			201				19		251.3	3.8	2.0	53.8
13	538			158				21		260.8	3.1	1.5	54.4
14	375			124				9		238.2	6.2	2.1	53.1
15	324			174				13		221.5	4.3	2.1	52.8
16	446			227				21	1	252.3	1.1	2.1	52.9
17	360			205				9		242.4	3.1	1.8	53.1
18	325			112				-5	5	245.4	1.7	1.8	53.1
19	320			187				1	18	218.7	3.0	1.8	54.8
20	253			220				-3	2	237.7	4.1	1.8	54.4
21	322			217				23	77	237.1	7.2	1.8	54.4
22	320			221				2	49	261.0	11.5	2.1	53.9
23	227			101				6	34	300.9	16.1	1.8	53.8
24	241			141				3	41	272.9	18.5	2.5	54.0
25	208			123				7	61	241.1	17.6	1.8	53.6
26	90			60				4	12	245.6	19.3	1.8	52.9
27	75			67				8	37	239.0	16.2	1.8	52.8
28	62			104				10	53	262.3	33.3	1.8	52.6
29	97			46				5	71	290.8	30.2	2.0	52.6
30	97			40				3	80	325.9	32.5	2.6	52.7
31	151			76				24	146	298.5	41.3	2.5	53.2
TOTALS	13537			4774				555	687				
AVERAGES	437			154				18	46	264.0	12.6		

TABLE 42

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 42 — JOHN DAY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	175			117				4	291	285.5	41.5	2.8	53.6
2	102			78				4	142	305.8	41.4	2.3	53.8
3	101			53				0	433	293.8	62.0	2.0	54.5
4	84			45				8	485	286.5	64.5	2.0	54.4
5	104			37				6	214	263.4	56.7	1.7	54.1
6		66		41				5	398	293.4	53.2	1.6	53.4
7		66		30			1	13	425	310.0	61.0	1.6	53.8
8		120		36			1	18	528	305.9	60.1	1.8	53.8
9		181		46			0	13	989	286.7	60.2	1.8	53.9
10		158		73			2	8	1404	305.0	60.0	2.0	54.5
11		142		56			5	15	2297	303.8	60.1	2.1	55.2
12		186		91			6	23	5889	306.9	59.9	2.1	55.8
13		97		50			8	12	6599	299.7	59.9	2.1	55.6
14		82		37			20	30	8273	298.5	61.2	1.9	56.2
15		113		33			24	11	5710	283.1	60.0	2.4	55.4
16		114		24			26	15	10176	287.5	57.9	3.0	55.3
17		84		38			32	18	7673	327.7	60.2	2.5	56.0
18		126		35			61	23	9096	354.1	54.7	2.6	55.9
19		144		46			102	52	20167	334.6	58.2	2.2	56.4
20		155		56			143	28	21787	289.7	77.2	2.2	59.7
21		244		58			277	23	19387	285.5	80.3	2.2	58.7
22		204		38			353	14	19160	288.0	80.3	2.6	58.9
23		244		59			486	19	32454	290.9	64.7	2.6	59.3
24		196		54			439	-1	32756	300.9	68.3	2.7	59.3
25		246		38			683	21	20483	304.2	58.8	2.7	56.9
26		302		101			912	29	17301	297.3	56.6	2.7	58.6
27		538		121			1223	58	20735	254.8	11.4	2.7	58.4
28		229		49			1012	35	28940	197.3	.0	3.0	58.3
29		321		39			1245	33	13765	174.9	.0	2.9	58.7
30		554		68			2535	40	24588	211.6	.0	3.0	58.7
TOTALS	566	4912		1647			9596	577	332549				
AVERAGES	113	196		55			400	19	11085	287.6	53.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 43

JOHN DAY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JUL 1980

FISH COUNTS

RIVER CONDITIONS

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SFECHI)	WATER TEMP (DEG F)
1		303		68			1636	16	23796	203.0	.0	2.8	60.0
2		390		112			2329	50	26195	164.7	.0	3.4	59.7
3		531		73			2134	34	29678	184.2	.0	3.0	59.7
4		423		150			3145	34	27292	135.8	.0	3.7	59.5
5		244		31			2090	33	11827	197.1	47.8	3.5	59.4
6		813		66			3959	52	27013	197.8	20.6	4.0	60.1
7		584		44			2987	33	31993	195.2	.0	4.0	60.8
8		412		83			2181	71	27073	192.7	.0	4.0	62.7
9		519		93			3089	102	15852	201.5	.0	4.0	61.4
10		582		72			2608	132	8168	191.0	.0	2.8	61.6
11		323		51			2452	97	15038	200.1	.0	2.8	61.6
12		253		51			1456	84	11355	138.6	.0	2.5	61.9
13		520		51			2048	121	8925	112.8	.0	3.8	61.9
14		469		55			1346	173	4810	148.7	.0	2.8	62.1
15		404		37			1178	156	5600	180.9	.0	3.8	62.2
16		218		66			748	108	7986	168.3	.0	3.8	62.6
17		337		37			975	169	4771	142.4	.0	3.8	62.8
18		298		92			850	194	4734	143.2	.0	4.3	63.2
19		224		41			503	212	2580	133.7	.0	4.1	63.6
20		255		72			490	198	2570	147.8	.0	4.1	64.0
21		182		22			315	227	2237	169.9	.0	4.1	65.0
22		196		44			310	203	1645	174.9	.0	4.5	66.7
23		417		83			354	401	917	148.5	.0	4.4	64.9
24		226		47			307	285	821	145.7	3.6	4.3	65.0
25		259		76			283	339	504	139.0	.0	3.6	65.6
26		311		36			214	383	356	136.5	.0	4.3	65.8
27		156		53			108	313	259	112.1	.0	5.0	66.2
28		171		21			156	409	173	117.2	.0	5.0	66.9
29		434		37			114	502	128	119.3	.0	4.0	66.1
30		130		25			39	338	52	134.0	.0	4.1	66.6
31		145		44			132	381	103	136.8	.0	4.2	67.1
TOTALS		10689		1833			40536	5850	304451				
AVERAGES		345		59			1308	189	9821	158.5	2.3		

TABLE 44

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 44

JOHN DAY PROJECT

AUG 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		193		49			102	343	34	136.1	.0	4.5	66.9
2		229		31			111	369	19	99.1	.0	4.5	67.3
3		107		26			84	306	30	109.0	.0	4.5	67.1
4		107		33			28	357	39	134.4	.0	3.7	67.2
5		103		35			38	399	3	138.1	.0	3.7	67.1
6			77	29			32	347	29	137.9	.0	3.9	66.8
7			144	34			49	345	13	128.9	.0	3.8	67.1
8			93	32			3	263	38	122.9	.0	3.9	67.1
9			124	29			21	462	29	93.5	.0	4.5	66.6
10			90	31			3	401	30	89.6	.0	4.5	67.2
11			76	22			2	401	7	137.7	.0	4.5	67.9
12			198	35			18	414	11	131.6	.0	4.1	66.6
13			181	34			11	497	7	130.0	.0	4.4	67.7
14			228	35			13	505	9	104.2	.0	4.5	67.4
15			169	55				610	0	104.5	.0	4.5	67.0
16			165	37				774	1	110.8	.0	4.5	66.7
17			201	65			2	611	-1	90.9	.0	4.5	66.7
18			145	34			1	738	1	122.3	.0	3.2	66.4
19			118	50			3	623	8	137.6	.0	3.2	66.5
20			60	34			1	438	1	125.2	.0	3.5	66.3
21			84	62	1			664	5	114.0	.0	3.5	66.0
22			142	70	3			679	5	116.0	.0	3.6	65.8
23			416	86				594	3	92.5	.0	3.6	65.5
24			340	71	5			890	5	67.4	.0	3.5	65.3
25			429	102	1			993	1	95.7	.0	4.0	65.2
26			407	74				985		137.1	.0	4.4	65.4
27			600	157	4			744	2	121.5	.0	4.5	65.1
28			470	166	6			950		121.3	.0	4.5	62.7
29			223	137	5			749	1	119.7	.0	3.4	64.8
30			473	202	2		1	753		116.2	.0	3.2	64.8
31			560	254			7	910	1	107.0	.0	3.0	64.4
TOTALS		739	6213	2111	27		530	18114	331				
AVERAGES		148	239	68	3		25	584	12	115.9	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 45 — JOHN DAY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			380	196	4	2		888		112.4	.0	3.2	64.0
2			504	195	11	1		1049	2	113.5	.0	2.9	63.9
3			412	243	3	0		1171	3	106.1	.0	2.8	63.6
4			415	233	21	10		928	4	116.0	.0	2.8	63.6
5			492	332	3	3		940		107.5	.0	2.9	63.7
6			691	435	3	5		1100	2	90.8	.0	2.9	63.2
7			1131	398	8	8		1776	-2	68.9	.0	3.0	63.3
8			939	386	3	8	2	1382	2	118.7	.0	3.1	63.2
9			886	449	9	10		1387		109.7	.0	4.6	63.5
10			862	383	14	4		892		102.1	.0	4.5	64.4
11			1307	710	3	9		854		100.8	.0	4.3	63.3
12			991	498	36	25	2	1394	1	95.5	.0	4.2	63.4
13			1306	630	10	20	4	1395		85.6	.0	4.2	63.1
14			1054	484	33	38		1357		68.2	.0	4.2	63.1
15			520	419	17	26		1053		95.4	.0	4.0	63.1
16			483	317	16	13		1053	1	107.8	.0	5.1	64.5
17			995	439	22	9	1	1169	0	122.0	.0	5.0	64.0
18			299	363	15	12	4	953		116.3	.0	4.5	63.2
19			737	505	37	38		1020		117.6	.0	4.8	62.9
20			1196	533	16	15		1294		96.0	.0	4.8	62.7
21			1019	355	40	36		1095		75.0	.0	4.8	62.4
22			1036	307	19	14		880	1	99.9	.0	4.4	62.2
23			853	344	55	58		1278		120.6	.0	5.0	63.8
24			805	400	64	58		1602	3	99.8	.0	5.0	63.7
25			1446	590	104	87		1657		105.4	.0	4.5	62.5
26			747	336	29	20		1095	1	115.6	.0	4.6	61.8
27			841	346	36	26		947		114.4	.0	4.4	61.9
28			1158	491	57	59		1156		98.5	.0	3.6	61.5
29			544	333	24	23		900		113.5	.0	3.8	61.5
30			988	336	47	35		1035		115.0	.0	3.9	61.2
TOTALS			25037	11986	759	672	13	34700	18				
AVERAGES			835	400	25	22	3	1157	1	103.6	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 46 — JOHN DAY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			677	252	22	23		947		99.9	.0	4.0	61.1
2			970	232	21	20		604		113.2	.0	4.0	61.2
3			535	212	25	25		641		133.3	.0	4.0	61.3
4			408	193	20	22		581		86.3	.0	4.3	61.5
5			056	309	31	34		561		66.9	.0	4.3	61.4
6			226	152	24	13		523		90.1	.0	4.3	61.4
7			212	178	17	18		619		86.3	.0	4.4	61.4
8			406	206	17	13		598		87.1	.0	4.4	61.2
9			110	134	6	11		631		97.5	.0	4.3	61.0
10			191	112	13	9		496		93.0	.0	4.3	60.8
11			171	84	2	2		403		96.5	.0	4.3	60.7
12			125	64	0	10		268		57.3	.0	4.3	60.5
13			102	67	4	11		348		79.8	.0	4.2	60.5
14			80	53	0	4		391		113.1	.0	5.2	60.2
15			93	82	2	5		630		125.7	.0	5.0	59.8
16			46	57	2	3		532		116.8	.0	5.0	59.6
17			41	32	5	2		531		121.4	.0	5.0	59.4
18			43	41	4	2		518		117.7	.0	5.0	58.9
19			31	35	1	4		401	1	90.4	.0	4.9	58.4
20			37	36	1			430		124.6	.0	4.8	58.0
21			42	44		1		364		106.1	.0	4.2	57.5
22			24	23				351		99.8	.0	5.0	57.1
23			23	41				336		111.9	.0	5.0	56.7
24			16	33		1		324		107.7	.0	5.0	56.3
25			20	43	2			339		102.0	.0	5.0	56.1
26			31	48	2			313		73.0	.0	5.0	55.5
27			38	61	3	1		502		129.0	.0	5.0	55.5
28			37	35				371		121.5	.0	5.0	55.2
29			21	41	1	1		271		109.4	.0	5.0	55.0
30			24	31	3	2		218		108.0	.0	5.0	54.2
31			20	29	2	1		230		121.8	.0	4.9	53.6
TOTALS			5063	2962	230	236		14272	1				
AVERAGES			183	96	9	9		460	1	102.8	.0		

TABLE 47
WATER TEMPERATURE AND STREAM FLOW DATA
JOHN DAY 1980

DATE	NOVEMBER			DECEMBER		
	WATER TEMP.	DISCHARGE(in KCFS)	TURBIDITY	WATER TEMP.	DISCHARGE(in KCFS)	TURBIDITY
1	53.5	112.4	4.9	45.8	125.2	5.1
2	53.7	96.0	4.9	45.5	129.1	5.3
3	53.2	119.2	4.9	45.5	152.2	4.0
4	53.0	112.6	3.9	45.1	172.6	4.0
5	52.8	112.0	4.1	45.0	181.4	4.0
6	52.4	105.3	4.0	44.0	158.7	4.0
7	52.2	116.8	4.2	43.8	134.9	4.0
8	51.9	104.9	4.1	43.5	175.5	4.2
9	51.7	91.2	4.4	43.1	177.6	4.2
10	51.6	131.9	3.8	42.6	162.5	5.2
11	51.4	124.7	3.8	42.2	178.1	5.2
12	51.1	144.7	3.8	41.9	164.9	5.8
13	51.1	178.3	3.8	41.6	161.2	5.5
14	50.0	153.5	3.4	41.4	129.1	5.2
15	50.0	109.0	3.4	41.1	154.9	4.9
16	49.7	105.0	3.4	40.7	155.4	5.5
17	49.6	119.8	5.1	40.5	161.1	3.7
18	49.5	110.4	5.0	40.4	172.9	3.7
19	49.3	129.5	4.5	40.3	167.9	6.5
20	49.1	128.9	4.5	40.2	139.6	6.5
21	48.6	147.6	4.6	40.2	116.7	6.2
22	47.9	153.8	4.0	40.3	137.0	7.5
23	47.6	119.3	4.0	40.4	155.4	5.0
24	47.1	145.7	4.2	40.3	180.0	5.0
25	47.1	143.8	4.2	40.3	137.5	5.0
26	47.0	149.6	4.0	40.4	180.9	5.5
27	47.0	117.7	4.5	40.6	241.9	5.0
28	47.0	144.2	5.0	40.9	278.0	4.5
29	47.0	121.6	4.3	41.3	245.1	4.5
30	47.0	104.5	5.3	41.6	268.6	3.4
31				41.9	260.5	3.4

TABLE 48

MONTHLY COUNT OF CHINOOK SALMON OVER JOHN DAY DAM

1968 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Apr 1*- Jun 5	SUMMER Jun 6- Aug 5	FALL Aug 6- Oct 31*	Jacks
1968				29,973	46,272	30,702	42,212	16,726	62,709	4,851	209		233,654	77,482	75,494	80,678	67,284
1969			6	4,266	72,966	35,899	31,071	18,523	103,778	9,542			276,051	81,724	64,732	129,595	93,928
1970				35,750	35,248	20,439	21,542	24,784	80,969	3,774			222,506	72,555	43,093	106,858	74,090
1971				13,995	40,620	24,364	25,692	10,403	73,157	5,650			193,881	56,625	50,030	87,226	61,380
1972				28,535	41,882	15,833	27,484	14,208	90,181	7,508			225,631	71,569	44,542	109,520	82,646
1973				67,467	27,091	18,972	15,067	16,995	89,913	13,987			249,492	96,710	34,206	118,576	73,687
1974				5,174	38,058	8,115	18,985	8,112	77,296	12,148			167,888	46,191	25,865	95,832	61,669
1975				7,727	27,989	11,058	21,359	18,250	65,367	7,329			159,079	37,716	32,179	89,184	62,403
1976				10,428	32,985	17,836	18,506	10,114	72,467	13,575			175,911	45,419	36,037	94,455	62,793
1977				55,061	19,422	15,674	13,764	7,853	71,302	11,855			194,931	75,782	29,194	89,955	60,386
1978				34,735	35,206	15,104	16,764	8,149	52,975	11,919			174,852	72,723	30,371	71,758	36,289
1979				8,224	12,568	9,537	13,580	14,128	50,977	8,566	574		118,154	21,981	23,572	72,601	41,364
1980				7,995	18,311	7,125	12,522	9,063	37,023	8,625			100,664	27,202	19,664	53,798	25,877
Total			6	309,330	448,618	230,658	278,548	177,308	928,114	119,329	783		2,492,694	785,679	508,979	1,200,036	803,796
13-Year Average				23,795	34,509	17,743	21,427	13,639	71,393	9,179			191,746	60,283	39,152	92,310	61,830

* 1968, 1969 and 1979 counting seasons varied slightly from these dates

TABLE 49

MONTHLY COUNT OF SOCKEYE SALMON

JOHN DAY DAM - 1968-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1968						42,175	44,942	690	32	7	1		87,847
1969						13,383	26,174	245	37	8			39,847
1970						18,029	58,176	1,909	19				78,133
1971						5,219	66,183	787	38	5			72,232
1972						6,762	43,704	1,257	68	2			51,793
1973					2	21,283	42,588	864	6	1			64,744
1974						2,024	30,687	403	6	1			33,121
1975						6,154	44,454	163	2	1			50,774
1976						8,907	21,278	258	1	2			30,446
1977					6	52,852	32,269	537	34	3			85,701
1978						5,633	8,006	119	20				13,778
1979						13,466	29,603	560	1				43,630
1980						9,596	40,536	530	13				50,675
Total					8	205,483	488,600	8,322	271	30	1		702,721
13-Year Average						15,806	37,581	640	21	2			54,055

TABLE 50

MONTHLY COUNT OF COHO SALMON

JOHN DAY DAM - 1968-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1968							4	1,311	32,882	3,848	188		38,233
1969							25	308	9,879	3,377			13,589
1970							14	1,026	17,272	1,231			19,543
1971								944	36,401	3,485			40,830
1972								1,253	14,965	1,315			17,533
1973								788	11,350	1,221			13,359
1974								730	11,253	2,668			14,651
1975								85	4,266	1,954			6,305
1976								57	3,739	2,010			5,806
1977								8	534	581			1,123
1978								6	2,676	5,673			8,355
1979							1	132	2,853	1,753	322		5,061
1980								27	1,431	466			1,924
Total							44	6,675	149,501	29,582	510	1	186,312
13-Year Average								513	11,500	2,276			14,332

TABLE 51

MONTHLY COUNT OF STEELHEAD TROUT

JOHN DAY DAM - 1968-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1968				3,939	2,659	151	6,094	26,824	68,791	11,405	1,393		121,256
1969			314	3,986	3,691	714	12,004	13,267	40,082	12,290			86,348
1970				1,987	1,279	253	7,373	19,412	46,036	6,100			82,440
1971				1,472	592	263	17,459	19,693	63,868	12,630			115,977
1972				1,523	1,966	356	17,656	20,502	78,138	21,487			141,628
1973				8,019	3,546	785	12,134	15,608	46,566	14,782			101,440
1974				1,713	2,363	1,361	9,713	8,419	12,479	7,708			43,756
1975				760	428	648	6,251	8,583	9,977	6,004			32,651
1976				929	1,248	1,868	9,254	17,964	22,754	5,791			59,808
1977				1,319	418	2,341	18,366	7,088	56,134	16,892			102,558
1978				741	631	1,601	5,573	6,911	22,896	5,835			44,188
1979				602	136	253	8,012	10,717	16,202	18,072	1,883		55,877
1980				4,131	555	577	5,850	18,114	34,700	14,272			78,199
Total			314	31,121	19,512	11,171	135,739	193,102	518,623	153,268	3,276		1,066,126
13-Year Average				2,394	1,501	859	10,441	14,854	39,894	11,790			82,010

TABLE 52

PEAK DAYS OF MIGRATION

JOHN DAY DAM - 1968-1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1968	Apr 28	11,114	Jul 19	2,694	Sep 8	4,532	Sep 8	3,735	Jun 29	7,677	Sep 4	2,256
1969	May 11	6,096	Jun 22	2,505	Sep 14	9,013	Sep 14	2,581	Jul 10	2,564	Sep 20	791
1970	May 4	5,485	Jul 11	1,897	Sep 13	6,728	Sep 12	4,159	Jul 6	4,119	Sep 11	1,319
1971	May 1	4,037	Jun 27	1,372	Sep 12	6,383	Sep 6	4,862	Jul 10	6,084	Sep 11	3,373
1972	Apr 27	6,484	Jun 29	1,805	Sep 12	6,280	Sep 19	6,149	Jul 9	3,049	Sep 19	1,381
1973	Apr 22	8,161	Jun 15	1,267	Sep 12	9,500	Sep 12	3,148	Jul 4	4,192	Sep 13	1,117
1974	May 22	2,773	Jul 15	1,039	Sep 17	6,004	Sep 27	724	Jul 6	2,534	Sep 17	1,237
1975	May 13	2,115	Jul 10	957	Sep 11	4,214	Sep 8	714	Jul 6	4,958	Sep 15	392
1976	May 6	2,795	Jul 2	1,168	Sep 15	6,259	Sep 18	1,343	Jul 2	1,871	Sep 15	463
1977	Apr 28	4,257	Jun 15	941	Sep 17	5,076	Sep 15	2,616	Jun 27	5,634	Sep 21	46
1978	Apr 1	4,081	Jun 7	1,106	Sep 15	4,941	Sep 15	1,913	Jul 1	940	Oct 12	376
1979	May 8	1,524	Jun 22	1,133	Sep 14	3,331	Sep 22	1,028	Jul 8	2,195	Oct 12	233
1980	May 8	1,266	Jul 6	879	Sep 25	2,036	Sep 7	1,776	Jul 6	3,959	Sep 25	191

TABLE 53

YEARLY TOTALS OF SALMONID FISH COUNTED OVER MCNARY DAM

1954 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Total Salmonid
1954	126,555	75,059	108,181	950	310,745
1955	108,915	85,575	173,758	643	368,891
1956	114,342	42,554	102,145	683	259,724
1957	292,696	105,728	85,460	2,855	486,739
1958	226,092	87,890	102,397	1,350	417,729
1959	171,490	110,475	83,977	1,970	367,912
1960	176,767	96,895	55,372	1,580	330,614
1961	154,996	103,743	16,388	2,045	277,172
1962	152,756	163,181	29,372	3,195	348,504
1963	154,459	113,646	59,744	3,113	330,962
1964	167,934	100,742	83,931	3,317	355,924
1965	150,907	118,960	42,052	2,700	314,619
1966	223,141	145,130	173,028	8,525	549,824
1967	195,653	77,700	105,635	27,226	406,214
1968	200,488	112,522	101,007	39,518	453,535
1969	213,407	76,681	29,787	53,716	373,591
1970	168,892	69,759	59,636	36,399	334,686
1971	171,448	109,630	52,867	39,358	373,303
1972	168,821	93,820	26,422	45,635	334,698
1973	184,112	64,620	42,731	17,682	309,145
1974	127,858	26,932	26,505	13,746	195,041
1975	133,150	22,663	43,143	3,975	202,931
1976	163,314	54,000	24,632	7,539	249,485
1977	183,581	87,712	80,781	4,622	356,696
1978	144,148	34,740	18,511	20,356	217,755
1979	95,275	50,304	37,792	12,800	196,171
1980	80,773	66,524	44,301	571	192,169
Total	4,451,970	2,297,185	1,809,555	356,069	8,914,779
27 Year Average	164,888	85,081	67,021	13,188	330,177

The dates for beginning and termination of counting have varied slightly.

TABLE 54

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER MCNARY DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	3	3,481	18,108	6,705	12,166	7,001	24,409	8,284	616	-	80,773
STEELHEAD	-	-	1,753	3,355	608	381	2,740	14,431	27,706	12,776	2,774	-	66,524
SOCKEYE	-	-	-	-	-	3,400	40,469	432	-	-	-	-	44,301
COHO	-	-	-	-	-	-	-	2	180	203	186	-	571
CHUM	-	-	-	-	-	-	-	-	-	-	-	-	-
PINK	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	7,756	6,836	18,716	10,486	55,375	21,866	52,295	21,263	3,576	-	192,169
SHAD	-	-	-	-	22	101,335	172,516	1,350	-	-	-	-	275,223

TABLE 55
WATER TEMPERATURE AND STREAM FLOW DATA
MCNARY - 1980

DATE	JANUARY			FEBRUARY		
	WATER TEMP	DISCHARGE	TURBIDITY	WATER TEMP	DISCHARGE	TURBIDITY
1	42	102,100	5.0	34	160,400	3 5
2	42	124,200	5.0	34	116,900	3.5
3	42	146,000	5.0	34	92,700	3.5
4	42	169,600	5.0	34	119,200	3.8
5	42	122,100	5.0	35	146,400	3.4
6	42	130,900	5.0	35	159,900	3.0
7	42	161,200	5.0	35	142,300	3.0
8	40	172,900	5.0	35	133,400	3 0
9	39	175,700	5.0	35	128,900	1.3
10	39	166,000	5 0	35	102,800	1.2
11	39	171,800	5 0	35	135,300	1.5
12	38	121,900	5 0	36	156,600	1 5
13	38	92,400	5.0	37	159,700	1.9
14	38	136,500	5.0	37	173,900	1.9
15	38	148,900	4.5	36	170,600	1.9
16	38	132,800	5.0	36	140,200	1.9
17	38	143,600	2.8	36	120,000	1.9
18	39	147,500	2.2	36	125,100	1.0
19	39	146,700	2.2	36	138,100	3 1
20	38	109,400	2.2	36	149,800	3 1
21	38	137,100	2 3	37	153,200	3.1
22	38	139,700	3.0	37	152,100	1.7
23	38	155,600	3 0	37	106,300	1.2
24	38	132,400	4.8	37	114,400	1 7
25	37	143,600	3.5	37	121,800	1 7
26	37	163,300	4.0	38	116,300	1.5
27	38	130,100	3 8	38	128,400	1.5
28	36	172,600	3.8	38	110,500	1.5
29	34	188,000	3.5	39	146,300	1.5
30	34	184,300	3.5			
31	34	179,900	3.5			

TABLE 56

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 56 — MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — MAR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO							
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1								23		107.1	.0	1.5	39.0
2								24		85.9	.0	1.5	39.0
3								16		122.0	.0	1.5	40.0
4								17		150.4	.0	1.5	40.0
5								10		152.7	.0	1.3	40.0
6								22		151.5	.0	1.3	40.0
7								38		159.7	.0	1.0	40.0
8								27		123.1	.0	1.0	40.0
9								22		113.6	.0	1.0	40.0
10								27		131.0	.0	1.0	40.0
11								51		156.0	.0	1.0	40.0
12								63		157.4	.0	1.0	40.0
13								57		149.6	.0	1.5	40.0
14								53		146.9	.0	1.5	40.0
15								44		125.9	.0	1.5	41.0
16								66		122.4	.0	1.5	40.0
17								69		151.7	.0	1.8	40.0
18								65		155.6	.0	1.5	40.0
19								72		131.4	.0	1.6	41.0
20								50		151.7	.0	1.5	41.0
21								51		112.1	.0	1.5	42.0
22								75		86.6	.0	1.6	42.0
23								88		80.5	.0	1.5	42.0
24								112		112.6	.0	1.6	42.0
25								63		149.3	.0	2.1	43.0
26								59		137.1	.0	2.0	43.0
27	1							50		135.7	.0	2.0	43.0
28								117		129.5	.0	2.2	44.0
29								103		106.2	.0	2.2	44.0
30	1							123		97.7	.0	2.2	44.0
31	1							96		116.0	.0	2.0	44.0
TOTALS	3							1753					
AVERAGES	1							57		129.3	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 57

MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1								84		145.6	.0	2.1	44.0
2								128		127.1	.0	2.1	44.0
3								101		114.1	.0	2.0	44.0
4								84		114.9	.0	2.7	44.0
5								74		124.6	.0	2.7	45.0
6								64		73.6	.0	2.7	45.0
7	1							69		144.2	.0	2.7	45.0
8	4							73		125.8	.0	2.7	46.0
9	4			1				61		135.6	.0	2.4	46.0
10	4							60		149.7	.0	2.4	46.0
11	16			1				128		132.3	.0	2.4	46.0
12	14							106		102.4	.0	2.5	46.0
13	20			3				69		47.5	.0	2.4	46.0
14	18			1				58		126.1	.0	2.6	48.0
15	25			3				104		131.6	.0	2.6	48.0
16	31			0				188		132.2	.0	2.7	48.0
17	64			5				86		140.8	.0	2.7	48.0
18	40			4				154		147.5	.0	2.7	50.0
19	65			10				164		121.6	.0	2.5	51.0
20	105			11				167		118.4	.0	2.5	51.0
21	164			7				139		160.3	.0	2.6	50.0
22	80			30				68		166.0	.0	2.6	50.0
23	210			11				196		169.5	1.2	2.6	50.0
24	253			26				233		165.8	.9	2.7	51.0
25	277			14				163		161.7	1.8	2.0	51.0
26	148			16				126		189.9	1.9	2.0	51.0
27	269			21				97		166.8	1.9	2.8	52.0
28	351			13				68		196.7	1.9	2.8	53.0
29	359			25				123		240.4	5.3	2.1	52.0
30	669			65				120		236.1	8.5	2.1	52.0
TOTALS	3214			267				3355					
AVERAGES	134			13				112		143.7	.8		

TABLE 58

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 58 — MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	369			50				69		254.5	31.4	2.1	53.0
2	355			44				44		243.4	19.9	2.4	53.0
3	912			114				73		241.1	19.2	.5	53.0
4	466			76				75		231.0	5.1	2.4	54.0
5	442			98				43		237.1	9.1	2.6	54.0
6	649			62				46		261.1	32.1	2.7	54.0
7	570			66				49		296.0	79.9	2.7	55.0
8	717			245				30		261.0	47.2	2.7	55.0
9	937			315				8		267.0	42.5	2.7	55.0
10	369			185				17		246.6	23.7	2.7	54.0
11	682			172				15		232.3	12.8	2.7	54.0
12	761			268				14		228.4	7.2	2.7	54.0
13	727			240				13		224.3	5.8	2.7	54.0
14	541			212				9		228.4	15.8	2.6	55.0
15	576			184				13		230.5	14.1	2.6	55.0
16	431			166				7		241.3	22.7	2.9	55.0
17	494			160				6		241.4	20.7	2.9	55.0
18	309			107				7		221.7	2.5	2.7	55.0
19	318			100				2		180.1	2.0	2.7	55.0
20	277			74				7		227.3	5.4	2.7	55.0
21	262			106				6		224.9	6.1	2.7	58.0
22	306			133				8		250.0	31.7	2.7	56.0
23	202			180				5		305.2	88.2	2.4	56.0
24	244			190				9		270.8	47.6	1.5	56.0
25	432			217				14		226.8	5.2	1.5	56.0
26	260			160				5	2	231.6	10.6	1.5	55.0
27	249			132				1		247.2	33.1	1.5	55.0
28	171			49				4	6	264.0	83.8	1.4	55.0
29	140			43				8	1	285.2	88.0	1.5	55.0
30	128			72				1	9	275.1	158.1	1.4	56.0
31	68			54					4	279.8	241.7	3.0	56.0
TOTALS	13834			4274				608	22				
AVERAGES	446			138				20	4	246.9	39.1		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 59 — MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1960

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	51			31				3		285.9	258.2	2.6	56.0
2	43			38						297.9	151.8	.6	56.0
3	97			62						303.1	100.6	.5	55.0
4	77			61				2		285.1	69.3	.5	55.0
5	142			72					3	267.0	64.2	1.1	55.0
6	138			88				7	62	286.4	141.2	1.1	55.0
7	203			92				3	33	287.0	255.0	1.4	56.0
8	148			66				7	27	290.1	256.3	1.4	56.0
9		136		86				11	234	288.6	158.8	1.5	56.0
10		112		78				7	689	287.4	150.1	2.0	56.0
11		91		67				4	411	292.0	159.3	2.0	56.0
12		134		98			1	69	141	304.9	176.1	2.0	56.0
13		150		77			1	14	39	308.2	187.9	3.3	56.0
14		184		69			5	12	185	299.7	264.3	2.4	56.0
15		137		48			9	5	79	277.4	249.8	2.5	56.0
16		109		79			21	8	2250	284.9	172.7	2.5	56.0
17		135		52			13	12	1046	330.3	222.1	2.6	56.0
18		158		40			10	5	3648	316.8	233.5	2.9	56.0
19		108		46			10	16	2068	328.3	194.0	2.6	60.0
20		98		70			17	18	2196	293.3	147.4	2.6	60.0
21		169		68			27	12	2771	292.1	192.2	2.6	60.0
22		107		44			28	6	539	270.1	217.7	2.6	60.0
23		90		51			65	12	699	301.8	129.9	1.7	60.0
24		143		151			176	26	3015	298.3	112.9	1.5	60.0
25		199		44			228	32	9992	295.2	122.3	1.5	61.0
26		266		69			323	18	9007	257.9	75.5	1.5	61.0
27		269		61			431	21	14032	241.0	22.3	1.5	61.0
28		268		113			593	20	12649	227.0	.0	2.0	61.0
29		351		94			786	15	20633	212.3	.0	2.9	61.0
30		318		59			656	16	14887	215.2	.0	2.9	61.0
TOTALS	899	3732		2074			3400	381	101335				
AVERAGES	112	170		69			179	14	3897	284.2	148.8		

TABLE 60

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 60

MCNARY PROJECT

JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		401		63			916	23	12520	202.6	.0	3.0	62.0
2		425		84			1458	28	11313	192.7	.0	3.0	64.0
3		411		63			1985	53	14639	165.2	.0	3.0	64.0
4		443		104			2412	50	20092	176.0	.0	3.0	63.0
5		280		68			1853	33	8658	192.1	12.9	3.0	63.0
6		473		118			2316	54	10394	187.8	.0	3.0	64.0
7		359		76			2154	32	7290	192.9	.0	3.0	65.0
8		371		74			3431	42	11944	177.0	.0	2.2	65.0
9		646		57			2974	28	7202	202.7	.0	2.5	63.0
10		419		59			2355	34	3389	190.9	.0	2.5	63.0
11		559		86			2956	50	6124	187.3	.0	2.5	64.0
12		736		101			3302	63	11325	130.9	.0	2.5	64.0
13		460		99			3098	58	10939	122.5	.0	2.5	64.0
14		339		100			2132	74	6315	154.1	.0	2.5	64.0
15		211		48			1026	40	1473	187.7	.0	2.5	65.0
16		518		30			937	77	5733	156.3	.0	2.6	66.0
17		339		40			1130	94	4115	147.7	.0	2.6	66.0
18		343		23			613	72	5775	144.3	.0	2.6	66.0
19		262		19			624	62	2661	146.3	.0	2.6	66.0
20		259		17			531	80	2315	138.6	.0	2.6	67.0
21		252		31			527	89	1931	166.8	.0	2.7	67.0
22		191		64			377	93	1488	152.2	.0	3.0	67.0
23		109		27			186	52	995	151.0	.0	3.0	68.0
24		140		32			207	123	907	136.8	.0	3.2	68.0
25		204		32			235	164	890	137.2	.0	3.2	68.0
26		289		23			197	184	562	127.3	.0	3.2	68.0
27		257		27			223	176	458	105.2	.0	3.2	68.0
28		151		26			97	129	375	134.3	.0	3.2	68.0
29		89		11			55	149	331	131.8	.0	2.5	68.0
30		107		34			81	192	228	140.6	.0	2.5	68.0
31		429		48			81	342	135	135.7	.0	2.5	68.0
TOTALS		10482		1684			40469	2740	172516				
AVERAGES		338		54			1305	88	5565	158.5	.4		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 61

MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

AUG 1980

FISH COUNTS

RIVER CONDITIONS

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		272		36			111	481	190	138.1	.0	4.0	69.0
2		219		28			82	458	83	115.4	.0	3.0	68.0
3		206		44			64	470	69	99.4	.0	3.4	68.0
4		110		18			38	298	79	125.0	.0	3.9	69.0
5		104		21			19	261	160	132.4	.0	3.9	68.0
6		87		13			23	260	123	114.5	.0	2.8	68.0
7		92		24			14	181	100	131.5	.0	2.8	68.0
8		105		21			4	283	64	118.2	.0	3.2	67.0
9			98	17			4	200	158	107.0	.0	3.2	67.0
10			102	21			5	229	67	88.5	.0	3.2	68.0
11			84	13			3	232	159	129.9	.0	3.2	68.0
12			88	15			8	175	70	122.6	.0	3.1	68.0
13			105	16			5	274	28	115.4	.0	3.4	68.0
14			122	27			1	313		144.0	.0	3.4	68.0
15			160	15			4	385		131.7	.0	3.4	68.0
16			115	25			2	354		113.5	.0	3.4	68.0
17			165	25			4	414		98.8	.0	3.4	69.0
18			290	54			20	505		113.2	.0	3.4	69.0
19			158	41			3	513		127.2	.0	3.4	69.0
20			159	27			6	497		118.9	.0	3.7	69.0
21			99	39				384		105.4	.0	3.4	68.0
22			159	54			2	471		110.2	.0	3.4	68.0
23			185	38			3	476		114.8	.0	3.4	68.0
24			181	68			2	687		57.7	.0	3.4	67.0
25			193	42			4	490		112.1	.0	3.4	67.0
26			264	48				661		140.4	.0	3.5	67.0
27			375	89				725		129.8	.0	3.5	67.0
28			444	91			1	1316		119.6	.0	3.3	67.0
29			301	50				763		117.8	.0	3.6	66.0
30			455	72	1	1		759		116.5	.0	3.6	66.0
31			317	95				716		102.9	.0	3.6	66.0
TOTALS		1195	4619	1187	1	1	432	14431	1350				
AVERAGES		149	201	38	1	1	17	466	104	116.5	.0		

TABLE 61

TABLE 62

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 62

MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			350	77	4	7		771		79.6	.0	3.6	66.0
2			473	86		2		758		111.7	.0	3.6	66.0
3			327	104		1		649		123.6	.0	3.6	66.0
4			256	43				597		113.8	.0	3.6	66.0
5			196	66				391		121.9	.0	2.9	66.0
6			494	133				571		94.3	.0	3.2	66.0
7			494	199				1026		68.2	.0	3.2	66.0
8			508	184				991		108.2	.0	3.2	66.0
9			684	195				1061		104.4	.0	3.2	66.0
10			400	123				796		100.4	.0	3.5	66.0
11			452	154				790		98.4	.0	3.5	66.0
12			485	285				1014		102.2	.0	3.5	66.0
13			994	267		2		1202		88.1	.0	3.5	66.0
14			881	242	5	6		1018		71.9	.0	3.5	66.0
15			790	240		4		695		91.8	.0	3.5	66.0
16			1155	483	6	10		1133		110.3	.0	2.8	67.0
17			647	255	5	4		1073		115.5	.0	2.8	66.0
18			473	172	4	18		1184		124.0	.0	2.8	66.0
19			765	251	0	0		1332		109.7	.0	2.8	66.0
20			636	231	5	5		1090		91.7	.0	2.8	66.0
21			373	180	0	0		812		77.4	.0	2.8	66.0
22			612	326	2	5		829		91.0	.0	2.8	66.0
23			550	187	0	0		759		114.9	.0	2.8	65.0
24			826	221	11	6		633		104.6	.0	2.8	65.0
25			719	181	17	13		784		101.9	.0	2.8	65.0
26			760	161	3	6		859		116.5	.0	3.2	64.0
27			730	201	2	8		1084		113.1	.0	3.2	65.0
28			1160	347	7	9		1443		74.1	.0	3.3	65.0
29			513	240	1	2		1133		105.0	.0	3.3	65.0
30			682	190				1228		133.1	.0	3.3	65.0
TOTALS			18385	6024	72	108		27706					
AVERAGES			613	201	4	5		924		102.1	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 63 — MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			1001	289				1406		87.7	.0	3.3	65.0
2			385	159	4	2		708		106.0	.0	3.3	65.0
3			610	145				649		129.4	.0	3.7	65.0
4			392	124	4	9		558		55.2	.0	3.7	65.0
* 5			722	180	17	20		454		61.2	.0	3.8	65.0
6			295	55	2	6		419		84.4	.0	3.4	65.0
7			464	105	3	2		477		90.1	.0	3.4	65.0
8			440	107	7	7		552		100.8	.0	3.4	64.0
9			251	80	11	10		592		106.9	.0	3.4	64.0
10			196	84	8	6		509		107.5	.0	3.5	64.0
11			190	71	12	7		467		87.9	.0	3.5	63.0
12			153	58	7	5		482		59.7	.0	3.5	63.0
13			174	60	5	2		341		80.4	.0	3.4	63.0
14			112	32	5	2		306		116.1	.0	3.6	63.0
15			143	36	3	2		403		103.5	.0	3.5	61.0
16			162	43	1	2		361		127.1	.0	3.5	61.0
17			73	19				342		106.2	.0	3.5	61.0
18			95	35	2	1		330		80.3	.0	3.5	61.0
19			86	22	2	1		443		72.9	.0	3.5	61.0
20			54	12		2		330		115.0	.0	3.3	60.0
21			60	21	6	5		397		97.1	.0	3.3	60.0
22			56	17				263		118.9	.0	2.5	60.0
23			27	37		1		296		106.2	.0	3.5	59.0
24			34	20	5	4		265		112.2	.0	3.5	59.0
25			85	25	1	1		263		100.1	.0	3.5	58.0
26			28	14				226		60.2	.0	3.5	58.0
27			27	11				215		109.3	.0	2.4	58.0
28			15	16				259		114.9	.0	2.4	57.0
29			31	10				212		103.8	.0	5.7	57.0
30			18	7	1			154		111.5	.0	3.5	57.0
31			28	9				147		104.0	.0	3.5	56.0
TOTALS			6379	1905	106	97		12776					
AVERAGES			206	61	5	3		412		97.0	.0		

* Fish count from 0500 to 1700 hours only

TABLE 64

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 64 — MCNARY PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — NOV 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			26	10				105		78.1	.0	3.5	56.0
2			15	7				95		76.7	.0	3.6	56.0
3			10	4				129		99.1	.0	3.6	56.0
4			6	2				94		114.6	.0	3.6	56.0
5			15	14	1			75		95.6	.0	3.6	56.0
6			22	11				95		123.6	.0	3.0	56.0
7			23	12				115		112.1	.0	3.0	56.0
8			15	5	1	4		99		108.0	.0	3.0	56.0
9			37	13				190		99.3	.0	3.2	56.0
10			55	10	6	5		144		134.9	.0	3.2	56.0
11			26	15	3			171		137.0	.0	3.1	55.0
12			16	5		1		128		143.3	.0	3.0	55.0
13			23	7	2			227		136.5	.0	2.4	54.0
14			48	6	11	4		183		155.9	.0	3.2	52.0
15			18	8	10	10		129		120.1	.0	3.0	52.0
16			13	2	4	1		114		120.2	.0	3.8	52.0
17			16	4	10	4		113		121.1	.0	3.8	52.0
18			19		6	4		62		123.5	.0	4.1	52.0
19			8		1	1		84		126.2	.0	3.1	51.0
20			10	2	12	6		46		133.0	.0	3.6	51.0
21			4		2	1		36		152.3	.0	3.6	51.0
22			2					44		130.7	.0	3.6	51.0
23			1		10			29		123.3	.0	3.6	51.0
24			11	1	2	1		42		144.4	.0	3.6	51.0
25			5	2	4	1		28		146.0	.0	3.6	51.0
26			6	2	8	1		60		150.3	.0	3.6	50.0
27			4	2	14	4		35		105.4	.0	2.9	50.0
28			1	2	7			16		145.0	.0	3.8	50.0
29			4	1	6	2		42		96.3	.0	3.8	50.0
30			6	2	8	8		44		88.5	.0	3.1	49.0
TOTALS			467	149	128	58		2774					
AVERAGES			16	6	6	3		92		121.3	.0		

The north fish ladder was out of service from the 17th through the 30th due to maintenance work

TABLE 65
WATER TEMPERATURE AND STREAM FLOW DATA
MCNARY - 1980

DATE	DECEMBER		
	WATER TEMP.	STREAM FLOW	TURBIDITY
1	49	129,600	3.1
2	49	150,000	3.9
3	49	149,100	3.3
4	49	151,700	3.6
5	49	169,100	3.3
6	48	158,300	3.6
7	48	127,200	3.6
8	48	170,100	3.2
9	47	165,200	2.4
10	46	163,200	2.4
11	44	148,100	3.6
12	44	153,800	4.2
13	44	164,900	4.2
14	44	120,300	4.2
15	44	156,500	4.2
16	44	146,700	4.2
17	45	146,100	4.4
18	44	169,600	4.2
19	44	150,800	4.0
20	44	142,200	4.0
21	44	109,800	4.0
22	44	123,500	4.0
23	44	158,300	4.0
24	45	155,200	4.0
25	45	121,700	4.0
26	45	152,900	3.5
27	45	226,400	3.5
28	46	259,900	3.5
29	46	263,300	0.9
30	46	271,600	0.7
31	46	255,000	0.7

TABLE 66

PEAK DAYS OF FISH MIGRATION

MCNARY DAM - 1954 - 1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1954	May 12	6,571	Jul 5	2,565	Sep 12	906	Sep 10	1,285	Jul 9	6,798	Sep 11	79
1955	May 26	2,565	Jul 10	3,034	Sep 10	536	Aug 13	2,432	Jul 16	19,916	Sep 26	26
1956	May 21	1,112	Jul 1	5,361	Sep 11	473	Aug 10	967	Jul 12	9,322	Sep 17	32
1957	May 4	7,075	Jul 26	7,616	Sep 13	2,963	Oct 5	3,028	Jul 11	5,763	Sep 25	208
1958	Jun 7	3,247	Jun 21	4,725	Sep 12	5,268	Sep 23	2,909	Jul 12	5,809	Sep 21	92
1959	May 14	1,831	Jul 9	3,658	Sep 15	3,007	Sep 19	3,884	Jul 15	5,786	Sep 15	147
1960	May 7	5,124	Jun 23	4,752	Sep 10	2,966	Sep 14	3,720	Jul 1	3,637	Sep 10,17	116
1961	May 2	5,775	Jun 29	2,281	Sep 17	1,978	Sep 17	3,734	Jul 12	897	Sep 11	147
1962	May 3	3,565	Jun 23	2,800	Sep 11	3,011	Sep 9	6,422	Jul 11	2,454	Sep 9	207
1963	May 11	3,219	Jun 26	1,710	Sep 11	3,643	Sep 21	2,793	Jul 5	4,637	Sep 5	128
1964	Apr 30	4,865	Jul 3	2,440	Sep 10	3,000	Sep 14	3,312	Jul 12	7,457	Sep 19	201
1965	May 16	1,648	Jul 7	2,056	Sep 15	4,251	Aug 2	3,880	Jul 7	4,326	Sep 18	211
1966	Apr 23	4,795	Jul 5	1,992	Sep 18	3,320	Sep 24	4,588	Jul 13	10,370	Sep 13	451
1967	Apr 27	3,509	Jul 5	2,242	Sep 25	5,782	Sep 25	2,969	Jul 13	8,605	Sep 16	1,659
1968	Apr 30	9,471	Jun 21	2,388	Sep 11	4,213	Sep 13	3,796	Jul 3	7,226	Sep 13	3,307
1969	May 13	4,793	Jun 24	2,700	Sep 16	5,582	Sep 13	3,197	Jul 12	1,554	Sep 16	2,864
1970	Apr 30	4,924	Jul 13	1,704	Sep 16	3,625	Sep 14	3,011	Jul 11	3,081	Sep 14	2,794
1971	May 4	3,208	Jul 9	2,020	Sep 12	4,710	Sep 12	4,574	Jul 13	3,926	Sep 12	2,732
1972	Apr 30	5,376	Jul 5	1,889	Sep 17	3,627	Sep 20	3,695	Jul 13	2,084	Sep 17	2,508
1973	Apr 28	6,543	Jun 17	1,684	Sep 13	6,570	Sep 13	2,970	Jul 6	3,059	Sep 15	1,474
1974	May 25	1,818	Jul 10	1,044	Sep 14	3,593	Oct 3	620	Jul 11	2,344	Sep 15	620
1975	May 15	1,629	Jul 10	1,316	Sep 13	3,517	Sep 16	468	Jul 9	4,745	Sep 14	368
1976	May 4	2,261	Jul 3	1,271	Sep 18	5,514	Sep 23	1,146	Jul 6	2,147	Sep 17	419
1977	Apr 30	4,357	Jun 26	1,138	Sep 21	4,826	Sep 15	3,097	Jul 2	4,962	Sep 22	283
1978	May 3	4,755	Jul 19	967	Sep 16	1,790	Sep 22	1,028	Jul 3	923	Sep 22	990
1979	May 10	1,535	Jul 24	752	Sep 18	2,049	Sep 22	978	Jul 6	2,102	Sep 11	853
1980	May 9	1,252	Jul 12	837	Sep 16	1,638	Sep 28	1,443	Jul 8	3,431	Oct 5	37

TABLE 67

MONTHLY COUNT OF CHINOOK SALMON

MCNARY DAM - 1954 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING *Apr 1- Jun 8	SUMMER Jun 9- Aug 8	FALL Aug 9- Oct 31*
1954			14	919	42,625	28,510	35,993	9,287	8,626	568	13		126,555	52,014	61,065	13,476
1955				86	12,778	26,125	46,021	14 773	7 220	1,648	264		108,915	21 309	71,180	16 426
1956			7	307	10,746	34,360	50,409	11,073	5,636	1,360	444		114,342	12,717	90 335	11,290
1957			6	14,489	67 939	91,473	41,485	25,621	48,685	2,998			292 696	99,511	122,578	70 607
1958				1,864	36,684	61 898	25,140	11,120	82,890	6,496			226 092	54 910	73,654	97 528
1959				3,914	31,923	23,461	51,478	14,929	42,756	3,029			171,490	40,775	74 985	55,730
1960				4,808	44,721	49,506	25 710	13,376	35,329	3,317			176,767	52 490	76,940	47,337
1961				21,669	44,260	19,722	23,192	10,661	31,447	4,045			154,996	68 539	45,257	41,200
1962				10,527	44,053	28 621	21,008	11,751	33,541	3,255			152 756	55,884	52 756	44,116
1963				7,765	42,804	22,454	18,659	13,757	43,731	5,289			154,459	52 336	44,760	57 363
1964				19,856	33,310	10,893	39,334	14,930	45,514	4,097			167,934	54 279	55,062	58 593
1965				6,114	20,559	14,094	28,599	12,856	60,185	8,500			150,907	29,206	45 375	76,326
1966				53 484	32 282	21,161	35,895	13,811	58,275	8,233			223,141	87,195	60,827	75,119
1967				32,790	28,174	13 244	44,612	10,788	54,314	11,731			195,653	62,591	59,975	73 087
1968				13,328	51,443	20,456	37,127	15,713	53 597	8,824			200,488	67,092	60,639	72,757
1969				809	60,241	39,074	30,556	12,200	59,889	10,638			213,407	70,079	63,953	79,375
1970				28,015	34,027	18,661	23 132	13,773	44,635	6,649			168,892	63,982	43,356	61,554
1971				5,642	32,688	24,007	35,152	9,680	55,297	8,982			171,448	42,601	59,129	69,718
1972				25,911	41,609	12,553	35,322	10,154	37,131	6,141			168,821	69 023	50 491	49,307
1973				44 878	31,727	16,836	14,520	10,400	57,716	8,035			184,112	79 047	31 812	73 253
1974				1,918	34,767	7,976	18,181	6,251	45,845	12 920			127,858	40,037	25,812	62,009
1975				4,694	24,752	11,590	20,497	12 485	53 125	6,007			133,150	32,718	31,713	68,719
1976				4,868	30,435	16,714	19,821	9 143	64 863	17,470			163,314	38,505	36,818	87,991
1977				40 692	23,895	16,768	16 256	7,348	64,785	13,837			183,581	66,934	32,277	84,370
1978				27,191	37,613	14 505	18,095	7,799	30,273	7,296	1,376		144,148	68 414	31 589	44 145
1979			6	5,424	13,696	9 763	14,601	8,030	34,702	8,171	882		95,275	21,153	24,161	49 961
1980			3	3 481	18 108	6,705	12 166	7,001	24,409	8,284	616		80,773	23,001	18 862	38,910
Total			36	385,443	927 859	661,130	782,961	318,710	1,184,416	187,820	3,595		4,451,970	1,426,342	1 445,361	1 580 267
27 Year Average				14,276	34,365	24,486	28,999	11,804	43,867	6,956			164,888	52,827	53,532	58,528

* Dates vary depending on beginning and ending of fish counting

TABLE 68

MONTHLY COUNT OF SOCKEYE SALMON

MCNARY DAM - 1954 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1954					1	1,107	93,452	11,382	2,214	25			108,181
1955					43	287	163,902	9,402	121	3			173,758
1956					1	639	94,352	6,882	262	7	2		102,145
1957					13	6,318	74,874	4,233	22				85,460
1958						12,542	82,547	5,474	1,819	15			102,397
1959					21	2,031	73,735	7,981	209				83,977
1960						9,374	43,749	2,241	8				55,372
1961						1,088	14,149	1,138	11	2			16,388
1962						1,721	27,134	511	6				29,372
1963					78	8,712	50,415	535	4				59,744
1964						770	81,536	1,617	8				83,931
1965						328	40,790	923	10	1			42,052
1966						6,202	162,267	4,548	11				173,028
1967						1,935	101,044	2,647	9				105,635
1968						28,928	70,413	1,666					101,007
1969						5,787	23,353	647					29,787
1970						7,152	47,339	5,134	11				59,636
1971						317	50,568	1,982					52,867
1972						366	24,452	1,604					26,422
1973						9,011	32,301	999	420				42,731
1974						188	25,816	486	15				26,505
1975						1,517	41,011	615					43,143
1976						4,461	19,319	415	437				24,632
1977					8	36,708	43,077	739	207	42			80,781
1978						3,211	10,376	714	1,583	2,627			18,511
1979						6,317	29,571	1,547	321	36			37,792
1980						3,400	40,469	432					44,301
Total					165	160,417	1,562,011	76,494	7,708	2,758	2		1,809,555
27 Year Average						5,941	57,852	2,833	285				67,021

TABLE 69

MONTHLY COUNT OF COHO SALMON

MCNARY DAM - 1954 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1954								4	751	180	14	1	950
1955									350	260	33		643
1956								16	462	157	48		683
1957							18	208	2,364	265			2,855
1958								29	1,091	230			1,350
1959								32	1,892	46			1,970
1960								24	1,432	124			1,580
1961								22	1,731	292			2,045
1962							5	106	2,884	200			3,195
1963							5	437	2,259	412			3,113
1964							3	307	2,734	273			3,317
1965							22	105	2,264	309			2,700
1966								811	7,195	519			8,525
1967							11	11	22,492	4,712			27,226
1968								1,010	36,260	2,248			39,518
1969								1,643	45,497	6,576			53,716
1970								3,576	31,161	1,662			36,399
1971								927	33,828	4,603			39,358
1972								2,433	38,747	4,455			45,635
1973							66	1,768	14,452	1,396			17,682
1974								1,160	10,052	2,534			13,746
1975							1	268	3,675	31			3,975
1976								373	5,201	1,965			7,539
1977						2		274	2,698	1,648			4,622
1978						1		138	10,445	7,459	2,313		20,356
1979				1		4	194	652	9,058	2,431	460		12,800
1980								2	180	203	186		571
Total				1		7	325	16,336	291,155	45,190	3,054	1	356,069
27 Year Average							12	605	10,783	1,674			13,188

TABLE 70

MONTHLY COUNT OF STEELHEAD TROUT

MCNARY DAM - 1954 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1954			376	5,569	2,307	128	2,628	20,939	26,944	11,627	2,937	1,604	75,059
1955	931	35	70	3,279	1,791	162	5,257	36,035	17,463	16,941	2,874	737	85,575
1956	66	753	563	2,365	1,218	276	5,440	14,492	8,245	6,787	2,349		42,554
1957			840	2,084	147	334	18,100	28,926	34,478	20,775	8	36	105,728
1958	62	137	1,069	877	334	1,265	9,967	6,535	50,229	17,415			87,890
1959				1,317	685	748	10,508	32,872	49,542	14,803			110,475
1960				1,579	1,236	908	8,475	22,443	51,749	10,505			96,895
1961				896	580	1,281	7,469	11,428	64,521	17,568			103,743
1962				1,650	762	1,108	11,321	28,288	98,042	22,010			163,181
1963				813	1,751	2,639	8,252	26,282	47,982	25,927			113,646
1964				1,789	805	486	7,602	25,918	53,180	10,962			100,742
1965				1,361	363	231	11,749	31,155	54,450	19,651			118,960
1966				2,279	954	1,476	18,241	26,062	71,180	24,938			145,130
1967				1,434	1,130	152	5,771	14,894	32,310	22,009			77,700
1968				5,451	3,361	247	4,058	22,268	61,167	15,970			112,522
1969				2,304	1,792	711	7,668	13,641	35,836	14,729			76,681
1970				1,347	1,001	340	5,183	15,236	39,150	7,502			69,759
1971				813	374	271	8,931	21,324	62,083	15,834			109,630
1972				1,614	393	130	8,155	20,548	46,393	16,587			93,820
1973				3,178	846	270	6,898	11,121	32,701	9,606			64,620
1974				847	715	681	4,093	5,242	8,648	6,706			26,932
1975				612	209	254	3,623	6,708	9,329	2,928			22,663
1976				936	1,372	1,949	5,772	16,145	22,423	5,403			54,000
1977				1,730	987	2,916	13,132	7,833	43,792	17,322			87,712
1978				1,266	701	1,832	3,444	4,863	15,627	5,708	1,299		34,740
1979			970	681	156	93	4,955	9,970	14,648	15,580	3,251		50,304
1980			1,753	3,355	608	381	2,740	14,431	27,706	12,776	2,774		66,524
Total	1,059	925	5,641	51,426	26,578	21,269	209,432	495,599	1,078,818	388,569	15,492	2,377	2,299,185
27 Year Average				1,905	984	788	7,757	18,355	39,956	14,391			85,081

TABLE 71

YEARLY TOTALS OF SALMONID COUNTED OVER ICE HARBOR DAM

1962 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Chum	Salmonid
1962	94,301	115,796	38	3,207		213,342
1963	61,190	74,539	1,118	1,933		138,780
1964	60,097	58,860	1,276	2,071		122,304
1965	39,233	62,873	317	320		102,743
1966	75,882	65,798	278	878		142,836
1967	84,930	44,205	717	3,770		133,622
1968	98,681	82,383	1,165	6,227		188,456
1969	100,514	63,889	745	5,316		170,464
1970	77,698	53,870	797	3,636		136,001
1971	70,248	67,029	532	2,969		140,778
1972	82,632	63,593	363	2,522	6	149,116
1973	81,821	38,311	233	2,443	4	122,812
1974	32,444	12,528	204	1,334	2	46,512
1975	31,686	16,218	243	1,559		49,706
1976	36,556	23,885	771	1,991		63,203
1977	56,514	54,820	582	1,561		113,477
1978	61,352	27,142	86	652		89,232
1979	13,929	23,117	30	398		37,474
1980	14,717	50,221	36	58		65,032
Total	1,174,425	999,077	9,531	42,845	12	2,225,890
19-Year Average	61,812	52,283	502	2,255		117,152

TABLE 72

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER ICE HARBOR DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	1,678	7,321	2,285	1,569	301	1,034	504	25	-	14,717
STEELHEAD	-	-	1,420	2,796	563	39	1,303	4,333	22,064	15,424	2,279	-	50,221
SOCKEYE	-	-	-	-	-	2	31	-	-	3	-	-	36
COHO	-	-	-	5	-	-	-	-	43	8	2	-	58
TOTAL SALMONID	-	-	1,420	4,479	7,884	2,326	2,903	4,634	23,141	15,939	2,306	-	65,032
SHAD	-	-	-	-	-	282	2,493	82	-	-	-	-	2,857

TABLE 73
WATER TEMPERATURE AND STREAM FLOW DATA
ICE HARBOR - 1980

DATE	JANUARY			FEBRUARY		
	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY
1	41.0	11,900	4.2	35.0	39,200	5.0
2	41 0	29,800	4.2	35 0	10,000	5 0
3	41 0	26,200	4.2	35.0	7,700	5 0
4	41 0	35,500	4.2	35.0	35,500	5.0
5	41 0	21,700	4 2	34.0	38,400	5.0
6	41 0	9,700	4.2	34.0	36,700	5 0
7	40 0	26,600	4 2	34 0	27,700	5 0
8	40 0	37,100	4 2	34.0	33,600	5 0
9	40 0	42,500	4.2	34 0	28,900	5.0
10	40.0	46,000	4.2	35.0	6,100	5 0
11	38 0	54,300	5.0	35 0	35,200	5 0
12	38.0	32,500	5.0	35.0	32,100	5.0
13	38.0	8,600	5 0	35.0	35,300	5 0
14	38 0	25,000	5 0	35.0	39,700	2 5
15	38 0	47,300	5.0	35 0	34,900	2 5
16	38.0	38,900	5 0	36.0	14,600	2 5
17	39 0	44,800	5.0	36 0	6,700	2 0
18	39.0	43,500	5.0	36.0	34,000	2.0
19	39.0	29,000	5 0	36 0	36,300	1.2
20	39.0	13,700	5 0	36 0	43,800	1.0
21	38.0	33,800	5.0	36.0	52,400	1.0
22	38.0	39,500	5 0	36 0	57,100	1.0
23	38.0	48,100	4.3	36 0	20,900	1 0
24	38.0	21,800	4 3	36.0	31,700	1 0
25	37 0	34,600	4.3	37 0	42,000	2.5
26	38.0	30,500	4.3	37 0	28,600	2.5
27	37 0	22,300	4 3	37.0	28,900	0.8
28	37.0	49,800	4.3	37 0	28,800	0.8
29	36.0	46,800	4.9	37.0	47,000	0.8
30	35.0	46,100	4 3			
31	35 0	39,700	5.0			

TABLE 74

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 74

ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MAR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1								10		38.3	.0	.8	39.0
2								8		23.2	.0	.8	39.0
3								17		29.8	.0	1.0	40.0
4								50		37.5	.0	1.0	40.0
5								46		42.0	.0	1.0	40.0
6								92		46.4	.0	1.0	40.0
7								44		52.5	.0	1.0	40.0
8								40		26.5	.0	1.0	40.0
9								22		37.7	.0	1.0	40.0
10								22		44.5	.0	1.0	42.0
11								36		38.9	.0	1.0	42.0
12								21		36.3	.0	1.0	42.0
13								39		40.2	.0	1.0	42.0
14								36		29.2	.0	1.0	42.0
15								32		14.7	.0	1.0	42.0
16								38		18.1	.0	1.0	42.0
17								48		50.1	.0	1.0	42.0
18								61		42.9	.0	1.0	42.0
19								69		33.7	.0	1.0	42.0
20								72		39.6	.0	1.0	42.0
21								55		43.5	.0	1.0	43.0
22								53		33.5	.0	1.0	43.0
23								49		8.5	.0	1.0	43.0
24								41		45.9	.0	1.0	43.0
25								44		53.9	.0	1.0	43.0
26								59		44.4	.0	1.4	44.0
27								50		38.2	.0	1.4	44.0
28								55		37.6	.0	1.4	44.0
29								49		32.8	.0	1.4	44.0
30								54		10.2	.0	1.4	44.0
31								108		44.1	.0	1.4	44.0
TOTALS								1420					
AVERAGES								46		36.0	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 75

ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	1							112		46.1	.0	1.4	44.0
2								68		28.7	.0	1.4	44.0
3								101		33.6	.0	1.4	45.0
4								84		34.0	.0	1.4	45.0
5								67		15.0	.0	2.1	45.0
6	1							59		11.5	.0	2.1	45.0
7								34		45.0	.0	2.1	46.0
8	1					1		51		28.3	.0	2.1	46.0
9	5					4		67		36.0	.0	2.1	46.0
10	5							85		52.5	.0	2.1	46.0
11	1							93		40.7	.0	2.1	46.0
12	9							81		29.7	.0	2.1	47.0
13	15			1				64		9.1	.0	2.1	47.0
14	5							57		46.1	.0	2.1	47.0
15	7			1				52		52.7	.0	2.1	47.0
16	11							73		48.9	.0	2.1	47.0
17	15			1				91		47.1	.0	2.1	47.0
18	16							97		64.4	.0	2.1	54.0
19	22			6				93		62.8	.0	2.1	47.0
20	16			8				92		53.5	.0	2.1	48.0
21	40			0				112		80.2	.0	2.1	48.0
22	129			3				154		66.5	.0	2.4	48.0
23	120			4				112		98.6	.5	2.4	51.0
24	169			2				172		94.4	.4	2.4	51.0
25	84			6				151		65.0	.9	2.4	52.0
26	148			6				173		94.9	.0	3.0	52.0
27	153			10				137		93.7	.7	3.0	52.0
28	136			8				77		102.0	5.1	3.0	54.0
29	298			17				118		118.9	20.1	3.0	55.0
30	184			14				69		126.9	28.2	2.5	55.0
TOTALS	1591			87		5		2796					
AVERAGES	64			6		2		93		57.6	1.9		

TABLE 76

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 76 — ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	345			11				84		117.6	21.3	2.5	54.0
2	454			31				83		99.7	1.5	2.5	54.0
3	234			30				45		104.0	7.7	2.5	55.0
4	271			19				56		101.9	5.9	2.5	55.0
5	347			34				31		113.2	16.4	2.5	55.0
6	173			18				30		121.1	20.4	2.5	55.0
7	103			15				23		133.8	34.3	2.5	56.0
8	322			38				28		116.3	25.2	2.5	56.0
9	546			72				19		102.4	7.7	2.5	56.0
10	532			86				28		107.2	7.6	2.5	56.0
11	376			46				19		103.1	3.1	2.5	56.0
12	427			74				19		96.9	1.8	2.5	56.0
13	286			79				27		83.1	2.1	2.4	57.0
14	255			41				12		74.9	3.5	2.5	57.0
15	138			58				11		75.1	3.2	2.4	57.0
16	74			28				5		97.6	20.8	2.4	57.0
17	71			19				2		101.8	20.9	2.4	57.0
18*	86			43				5		79.9	1.7	2.4	57.0
19	79			36				3		74.9	3.3	2.4	57.0
20	115			37				7		106.0	29.5	2.4	57.0
21	163			48				4		104.3	23.8	2.4	57.0
22	97			32				3		125.5	49.0	2.4	57.0
23	67			30				10		136.0	57.7	2.4	57.0
24	54			27				2		126.6	45.2	2.4	57.0
25	93			30				3		102.0	21.8	2.4	57.0
26	126			69				3		116.1	35.0	2.4	57.0
27	167			49				1		119.0	37.7	2.4	57.0
28	113			28						132.8	56.6	2.4	57.0
29	34			24						120.0	40.1	2.4	57.0
30	14			2						121.2	56.2	1.8	56.0
31	3			2						131.8	57.3	1.0	56.0
TOTALS	6165			1156				563					
AVERAGES	199			37				21		107.9	23.2		

*Because of ash fallout from Mt. St Helens, morning shift only counted.

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 77 — ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	17			17						125.4	55.6	.8	54.0
2	11			2						119.7	45.2	.8	53.0
3	10			2						122.8	41.4	.8	53.0
4	49			14				2		116.3	35.1	1.2	54.0
5	54			22				2		116.6	43.0	1.5	56.0
6	67			11						120.7	45.9	1.5	56.0
7	59			12						114.4	44.0	1.5	57.0
8	63			11						127.2	50.1	1.5	57.0
9	90			13				5		120.2	45.0	1.5	57.0
10	63			7				1	2	112.3	45.8	1.5	57.0
11	62			13				1	10	117.8	49.4	1.5	57.0
12		52		9				1	8	128.7	51.7	1.5	58.0
13		114		13				1	0	129.5	52.1	1.5	58.0
14		82		7				4	0	138.1	56.9	1.5	58.0
15		101		19				1	0	118.9	47.8	1.5	59.0
16		100		11				1	0	120.5	41.7	1.5	59.0
17		68		12				0	0	122.0	58.8	1.5	59.0
18		39		9				0	10	108.9	60.3	2.5	62.0
19		41		7				1	13	103.2	60.3	2.5	60.0
20		21		3				1	1	106.0	56.2	2.5	60.0
21		56		19				1	0	98.5	63.0	2.5	60.0
22		100		13				1	4	89.1	58.2	2.5	60.0
23		45		9				2	4	99.7	44.6	2.5	61.0
24		66		23			1	1	1	109.5	48.9	2.5	60.0
25		108		31				1	17	103.5	42.2	2.5	60.0
26		65		23				2	18	85.0	25.8	2.5	61.0
27		48		23				4	20	79.5	14.5	2.5	61.0
28		77		37				1	73	58.7	.0	2.5	61.0
29		59		37				4	56	48.8	.0	2.5	61.0
30		46		23			1	1	45	63.7	.0	2.5	61.0
TOTALS	545	1288		452			2	39	282				
AVERAGES	50	68		15			1	2	13	107.5	42.8		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 78 — ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		56		31				10	52	71.7	.1	2.5	54.0
2		65		43				12	57	61.9	.0	2.5	61.0
3		67		24				2	39	56.2	.0	2.5	61.0
4		71		26				12	75	33.2	.0	3.0	64.0
5		71		38				4	75	63.5	.0	3.0	64.0
6		55		32				9	83	52.2	.0	3.0	64.0
7		54		26				8	83	69.6	.0	3.0	64.0
8		26		24			2	7	82	54.9	.0	3.0	64.0
9		46		23				9	65	62.8	.0	3.0	64.0
10		52		40			12	9	69	59.1	.0	3.0	65.0
11		52		25			5	22	143	59.4	.0	2.5	65.0
12		45		32			1	17	106	27.6	.0	3.0	65.0
13		49		32			1	19	105	18.2	.0	3.0	65.0
14		39		16			2	16	814	45.5	.0	5.0	65.0
15		27		29				32	97	37.2	.0	5.0	65.0
16		23		26			3	26	120	42.5	.0	5.0	65.0
17		24		23				44	51	32.8	.0	5.0	65.0
18		19		13				38	62	37.3	.0	5.0	65.0
19		26		15			1	38	45	32.1	.0	5.0	65.0
20		18		13				44	73	19.4	.0	5.0	65.0
21		14		5			2	36	39	39.5	.0	5.0	66.0
22		9		7			2	27	17	37.2	.0	5.0	66.0
23		33		17				98	34	43.3	.0	5.0	66.0
24		11		6				80	32	34.0	.0	5.0	66.0
25		6		5				61	16	29.6	.0	5.0	66.0
26		18		10				90	17	14.5	.0	5.0	67.0
27		1		7				67	9	24.6	.0	5.0	67.0
28		5		7				116	9	30.8	.0	5.0	67.0
29		7		8				167	9	27.9	.0	5.0	67.0
30		5		5				103	4	32.5	.0	5.0	67.0
31		3		4				80	11	31.0	.0	5.0	70.0
TOTALS		957		612			31	1303	2493				
AVERAGES		31		20			3	42	80	41.4	.0		

TABLE 78

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 79

ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

AUG 1980

FISH COUNTS

RIVER CONDITIONS

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		9		5				135	9	31.7	.0	5.0	70.0
2		5		8				199	10	18.4	.0	5.0	70.0
3		10		5				190	2	11.3	.0	5.0	70.0
4		6		2				105	2	18.6	.0	5.0	71.0
5		8		0				159	13	31.2	.0	5.0	71.0
6		23		3				159	8	22.5	.0	5.0	71.0
7		5		1				199	8	30.7	.0	5.0	71.0
8		5		9				182	8	29.5	.0	5.0	71.0
9		6		2				145		11.8	.0	5.0	71.0
10				1				58	8	11.8	.0	5.0	71.0
11		5		2				61		31.8	.0	5.0	71.0
12			1	2				106	2	23.3	.0	5.0	71.0
13			1	2				89		15.0	.0	5.0	71.0
14			2	3				99	3	23.8	.0	5.0	71.0
15			6					124		17.1	.0	5.0	71.0
16			7	2				104		22.3	.0	5.0	71.0
17			5	2				102		13.3	.0	5.0	72.0
18			8	3				132	2	17.8	.0	5.0	72.0
19			3	3				78	2	18.5	.0	4.6	72.0
20			4					56	1	29.5	.0	4.6	71.0
21			9					135	2	22.9	.0	4.6	71.0
22			7	2				153	1	19.6	.0	4.6	71.0
23			11	1				131		16.2	.0	4.6	71.0
24			9	4				155		11.5	.0	4.5	71.0
25			5	3				108		17.4	.0	4.6	71.0
26			11					151		22.3	.0	5.5	71.0
27			7					256		25.8	.0	5.5	70.0
28			14	3				290		24.3	.0	4.8	70.0
29			19	1				219		16.4	.0	4.8	70.0
30			10	1				140	1	11.7	.0	4.8	70.0
31			9	1				113		11.7	.0	4.8	70.0
TOTALS		82	148	71				4333	82				
AVERAGES		8	7	3				140	5	20.3	.0		

TABLE 80

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 80 — ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			7					101		11.8	.0	4.8	70.0
2			8	2				148		27.4	.0	4.8	71.0
3			20					369		32.0	.0	4.8	71.0
4			7					338		24.9	.0	4.8	71.0
5			13	6				512		26.8	.0	4.8	71.0
6			7	4				423		21.5	.0	4.8	71.0
7			14	2				312		11.0	.0	4.8	71.0
8			19	2				269		29.9	.0	4.8	71.0
9			22	7	5			416		22.6	.0	4.8	71.0
10			18	7	6			645		24.2	.0	4.8	71.0
11			19	10	3			788		22.7	.0	4.8	71.0
12			18	15	2			561		28.2	.0	4.8	71.0
13			16	2	1			778		30.1	.0	4.8	70.0
14			20	13	4			987		24.1	.0	4.8	70.0
15			17	12	1			496		38.5	.0	4.8	70.0
16			34	18				1043		17.4	.0	4.6	69.0
17			26	14	1			1136		21.9	.0	4.2	68.0
18			35	18	6			994		38.1	.0	4.2	68.0
19			46	12	3			1273		20.3	.0	4.2	68.0
20			31	16	6			1121		28.3	.0	4.2	68.0
21			17	12	1			717		21.8	.0	4.0	68.0
22			45	12				835		27.3	.0	4.0	68.0
23			8	7				496		50.5	.0	4.0	68.0
24			34	17	1			611		35.2	.0	4.0	68.0
25			29	8				887		21.7	.0	4.0	66.0
26			35	9				902		34.1	.0	4.0	66.0
27			42	12				950		41.5	.0	4.0	66.0
28			51	17	2	1		1531		20.3	.0	4.0	66.0
29			31	17				1215		32.7	.0	4.0	66.0
30			25	49				1210		39.1	.0	4.0	66.0
TOTALS			714	320	42	1		22064					
AVERAGES			24	12	3	1		735		27.5	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 81

ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECHI)	(DEG F)
1			21	16	1			1365		26.6	.0	4.0	66.0
2			47	17				1381		36.9	.0	4.0	66.0
3			26	19				1221		35.9	.0	3.7	65.0
4			20	20				1042		11.4	.0	3.7	65.0
5			19	12	2			812		11.7	.0	3.7	65.0
6			11	12	2	1		578		20.9	.0	3.7	65.0
7			22	8				752		18.9	.0	3.7	65.0
8			10	9				775		17.5	.0	3.7	65.0
9			12	4	1	1		642		28.3	.0	3.7	65.0
10			7	8				444		22.8	.0	3.5	64.0
11			10	10				433		15.1	.0	3.5	64.0
12			7	7				458		17.3	.0	3.5	64.0
13			5	5				367		20.1	.0	3.5	64.0
14			5	5			1	395		24.6	.0	3.5	64.0
15			4	4				327		21.6	.0	3.5	64.0
16			4	10			2	280		24.4	.0	3.5	64.0
17			10	16				262		29.6	.0	3.5	61.0
18			7	7				364		21.2	.0	3.5	61.0
19			7	3				370		19.1	.0	3.5	61.0
20			5	2				303		24.3	.0	4.0	61.0
21			3	7				358		26.9	.0	4.0	60.0
22			4	2				303		32.8	.0	4.0	60.0
23			3	7				300		27.0	.0	4.0	60.0
24			1	5				254		25.3	.0	4.0	60.0
25			2	2				335		21.6	.0	4.0	59.0
26				3				328		14.9	.0	4.0	59.0
27			2	4				219		30.6	.0	4.0	58.0
28			1	3				186		28.9	.0	3.8	58.0
29			3					194		27.2	.0	3.8	58.0
30				2				183		29.9	.0	3.8	58.0
31				1				193		23.2	.0	4.8	58.0
TOTALS			278	226	6	2	3	15424					
AVERAGES			10	8	1	1	1	498		23.8	.0		

TABLE 82

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 82 — ICE HARBOR PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — NOV 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SUCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			2	1				64		12.4	.0	4.3	58.0
2			1					67		12.8	.0	4.3	58.0
3			2					46		28.1	.0	4.3	58.0
4			2	8				67		32.5	.0	4.3	58.0
5								67		22.0	.0	4.3	58.0
6			1					86		27.7	.0	4.3	57.0
7								66		25.7	.0	4.3	57.0
8			2	1				102		26.6	.0	4.3	57.0
9								80		44.6	.0	4.3	56.0
10								147		38.9	.0	4.3	56.0
11								97		34.0	.0	4.3	56.0
12								84		44.0	.0	4.3	56.0
13			1					88		44.0	.0	4.3	56.0
14								103		37.9	.0	5.0	56.0
15								122		25.8	.0	5.0	56.0
16								196		22.4	.0	5.0	56.0
17			1					118		30.2	.0	5.0	56.0
18			1					113		31.2	.0	5.0	56.0
19			1					80		27.7	.0	5.0	56.0
20								103		37.5	.0	5.0	56.0
21								69		41.7	.0	5.0	51.0
22					1			50		35.3	.0	5.0	51.0
23								37		24.9	.0	5.0	50.0
24								37		30.2	.0	5.0	50.0
25			1		1			43		43.5	.0	5.0	50.0
26								21		36.0	.0	5.0	50.0
27								32		24.7	.0	5.0	50.0
28								38		44.7	.0	5.0	49.0
29								21		28.0	.0	5.0	48.0
30								35		20.3	.0	5.0	48.0
TOTALS			15	10	2			2279					
AVERAGES			1	3	1			76		31.2	.0		

TABLE 83
WATER TEMPERATURE AND STREAM FLOW DATA
ICE HARBOR - 1980

DATE	DECEMBER		
	WATER TEMP.	STREAM FLOW (IN KCFS)	TURBIDITY
1	48.0	28.1	5.0
2	48.0	32.4	5.0
3	48.0	38.7	5.0
4	47.0	34.8	5.0
5	48.0	36.5	5.0
6	48.0	40.4	5.0
7	46.0	35.4	5.0
8	46.0	42.4	5.0
9	46.0	42.6	5.0
10	46.0	42.9	5.0
11	45.0	42.5	4.5
12	45.0	38.8	4.5
13	45.0	34.7	4.5
14	43.0	24.1	4.0
15	42.0	34.1	4.0
16	42.0	37.0	4.0
17	42.0	39.9	4.0
18	42.0	36.4	4.0
19	42.0	36.8	4.0
20	42.0	26.8	4.0
21	42.0	28.7	4.0
22	42.0	46.7	4.0
23	42.0	43.2	4.0
24	42.0	48.4	4.0
25	42.0	22.4	4.0
26	42.0	41.0	4.0
27	43.0	83.7	4.0
28	43.0	80.5	4.0
29	43.0	76.2	4.0
30	43.0	60.3	4.0
31	43.0	64.1	1.5

TABLE 84

PEAK DAYS OF MIGRATION

ICE HARBOR DAM - 1962-1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1962	May 17	2,425	Jun 28	2,509	Sep 24	1,398	Sep 19	5,313	Jul 1	5	Sep 16	416
1963	May 12	1,843	Jun 25	1,150	Sep 27	812	Sep 27	2,741	Jul 8	125	Sep 14	116
1964	May 9	2,284	Jul 4	1,554	Sep 10	546	Sep 19	2,558	Sep 22	54	Sep 10	202
1965	May 22	1,300	Jul 3	924	Sep 18	653	Sep 18	2,246	Jul 8	104	Sep 19	70
1966	Apr 24	3,902	Jun 27	1,030	Sep 9	707	Sep 26	2,770	Jul 9	41	Sep 27	92
1967	Apr 28	2,423	Jul 7	1,448	Sep 18	1,570	Sep 19	1,820	Jul 12	123	Sep 18	289
1968	May 2	6,411	Jul 23	1,420	Sep 11	1,177	Sep 16	3,434	Jul 7	101	Sep 10	358
1969	May 19	2,993	Jun 25	1,673	Sep 20	910	Sep 21	1,841	Jul 1	50	Sep 20	339
1970	May 1	5,125	Jun 25	765	Sep 19	875	Sep 19	3,863	Jul 14	59	Sep 17	247
1971	May 26	2,189	Jul 9	1,036	Sep 12	669	Sep 25	2,494	Jul 23	45	Sep 12	243
1972	Apr 30	3,564	Jul 6	1,426	Sep 23	465	Sep 20	2,808	Jul 18	28	Sep 26	283
1973	Apr 29	4,821	Jun 18	1,062	Sep 15	712	Sep 19	1,698	Jul 11	27	Sep 13	163
1974	May 19	1,306	Jun 30	525	Sep 17	191	Sep 26	287	Jul 11	18	Sep 22	57
1975	May 23	1,789	Jul 7	427	Sep 17	157	Sep 16	450	Jul 11	25	Sep 16	87
1976	May 6	1,470	Jun 22	517	Sep 19	107	Sep 18	594	Jul 11	47	Sep 20	121
1977	May 1	2,343	Jun 23	561	Sep 17	111	Sep 27	2,250	Jul 4	49	Sep 17	84
1978	May 9	2,630	Jun 13	645	Sep 22	93	Sep 22	1,129	Jul 2	12	Sep 22	51
1979	May 12	484	Jun 12	99	Sep 16	98	Sep 27	596	Jun 25	7	Sep 11	28
1980	May 9,10	618	Jun 13	127	Sep 30	74	Sep 30	1,531	Jul 10	12	Sep 10,18,20	6

TABLE 85

MONTHLY COUNT OF CHINOOK SALMON

ICE HARBOR DAM - 1962 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	SPRING Apr 1- Jun 11	SUMMER Jun 12- Aug 11	FALL Aug 12- Oct 31
1962				2,579	28,951	23,250	8,315	3,547	20,578	7,081			94,301	33,613	30,639	30,049
1963				3,434	21,790	14,001	7,591	1,415	9,342	2,918	677	22	61,190	26,778	20,875	13,537
1964		1	2	4,048	19,611	5,409	18,832	2,161	8,159	1,701	156	17	60,097	24,304	24,696	11,097
1965			4	1,677	9,649	5,072	10,209	803	9,318	2,152	349		39,233	12,178	14,701	12,354
1966				23,382	19,294	10,611	7,166	1,933	10,756	2,740			75,882	43,881	16,983	15,018
1967				15,973	18,137	9,020	22,218	820	11,947	6,815			84,930	35,593	30,315	19,022
1968				1,595	41,398	12,119	17,751	3,433	16,588	5,275	493	29	98,681	44,773	29,531	24,377
1969			195	697	43,181	24,918	12,861	2,369	12,027	3,555	708	3	100,514	52,090	30,917	17,507
1970				12,167	33,881	12,338	8,185	1,747	7,702	1,456	219	3	77,698	47,931	19,382	10,385
1971				1,104	25,089	19,265	13,364	873	8,960	1,593			70,248	32,638	26,606	11,004
1972				14,535	34,734	7,544	15,177	1,869	6,089	2,684			82,632	50,350	22,846	9,436
1973				34,277	23,627	10,925	4,254	840	6,657	1,241			81,821	60,639	12,829	8,353
1974				842	16,670	5,315	6,494	483	2,066	574			32,444	19,361	10,269	2,814
1975				1,314	17,796	5,817	3,972	506	1,875	406			31,686	21,401	7,727	2,558
1976				3,146	19,269	8,544	3,921	349	1,123	204			36,556	25,056	10,026	1,474
1977				24,003	17,626	9,328	3,606	297	1,370	284			56,514	44,421	10,337	1,756
1978				14,891	29,333	9,999	4,888	892	1,064	269	16		61,352	49,303	10,440	1,609
1979				1,731	6,528	2,234	1,216	379	1,489	333	19		13,929	9,247	2,608	2,074
1980				1,678	7,321	2,285	1,569	301	1,034	504	25		14,717	9,668	3,305	1,744
Total		1	201	163,073	433,885	197,994	171,589	25,017	138,144	41,785	2,662	74	1,174,425	643,225	335,032	196,168
19-Year Average				8,583	22,836	10,421	9,031	1,317	7,271	2,199			61,812	33,854	17,633	10,325

TABLE 86

MONTHLY COUNT OF STEELHEAD TROUT

ICE HARBOR DAM - 1962 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1962				8,758	716	261	2,384	7,450	75,924	20,303			115,796
1963				969	895	163	2,157	6,514	35,382	24,070	4,042	347	74,539
1964	105	136	796	2,269	807	153	1,596	9,462	34,435	7,357	1,347	397	58,860
1965	31	110	673	1,976	488	439	3,739	4,497	33,595	13,522	3,803		62,873
1966				2,161	810	413	1,383	2,517	40,185	18,329			65,798
1967				1,266	894	345	972	953	18,914	20,861			44,205
1968				2,558	2,933	357	952	8,107	45,552	17,270	3,692	962	82,383
1969	132	41	807	4,971	2,430	321	3,348	5,715	27,219	14,953	3,874	78	63,889
1970				1,597	1,067	389	2,620	7,611	30,101	8,290	1,891	304	53,870
1971			458	1,938	843	215	3,064	2,996	42,481	15,034			67,029
1972				1,853	553	152	3,062	6,503	34,134	17,336			63,593
1973				1,570	827	254	1,785	2,699	22,021	9,155			38,311
1974				972	359	104	1,482	2,202	3,661	3,748			12,528
1975				564	409	76	1,223	3,878	6,816	3,252			16,218
1976				508	142	165	1,714	5,138	11,141	5,077			23,885
1977				685	220	308	3,654	3,017	30,610	16,326			54,820
1978				908	88	43	1,308	2,907	15,094	6,092	702		27,142
1979			454	538	114	60	1,995	1,778	6,136	9,717	2,325		23,117
1980			1,420	2,796	563	39	1,303	4,333	22,064	15,424	2,279		50,221
Total	268	287	4,608	38,857	15,158	4,257	39,741	88,277	535,465	246,116	23,955	2,088	999,077
19-Year Average				2,045	798	224	2,092	4,646	28,182	12,953			52,583

TABLE 87

YEARLY TOTALS OF SALMONID FISH COUNTED OVER LOWER MONUMENTAL DAM

1969 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Total Salmonid
1969	86,700	71,434	1,127	6,466	165,727
1970	75,310	62,167	240	2,972	138,689
1971	68,885	70,114	808	2,171	141,978
1972	72,220	66,857	415	733	140,225
1973	80,557	39,530	206	1,333	121,626
1974	31,728	15,139	114	812	47,793
1975	33,013	17,363	146	572	51,094
1976	34,395	21,822	364	361	56,942
1977	49,301	47,749	293	122	97,465
1978	56,835	20,540	96	218	77,689
1979	11,288	17,794	31	194	29,307
1980	10,885	34,322	48	73	45,328
Total	611,117	484,833	3,888	16,027	1,115,865
12-Year Average	50,926	40,403	324	1,336	92,989

TABLE 88

MONTHLY TOTALS OF SALMONID AND SHAD COUNTED OVER LOWER MONUMENTAL DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	1,008	5,198	2,318	1,315	319	405	322	-	-	10,885
STEELHEAD	-	-	-	2,467	573	70	754	3,725	14,078	12,655	-	-	34,322
SOCKEYE	-	-	-	-	-	5	41	2	-	-	-	-	48
COHO	-	-	-	-	-	-	-	5	57	11	-	-	73
TOTAL SALMONID	-	-	-	3,475	5,771	2,393	2,110	4,051	14,540	12,988	-	-	45,328
SHAD	-	-	-	-	-	1,051	3,650	153	-	-	-	-	4,854

TABLE 89

WATER TEMPERATURE AND STREAM FLOW DATA

LOWER MONUMENTAL - 1980

DATE	JANUARY			FEBRUARY			MARCH		
	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY
1	41	13,700	3.5	35	39,800	1.5	38	43,800	1.0
2	41	29,600	3.5	35	17,800	1 5	39	25,100	1.0
3	41	27,300	3.5	35	7,800	1.5	39	31,800	1.0
4	41	33,600	3.5	35	30,300	2.0	39	35,700	1.5
5	40	25,200	3.5	35	41,500	2.0	39	40,600	1.5
6	40	7,200	3.5	35	37,800	2.0	39	47,700	1.5
7	40	28,100	3.5	35	27,100	3.0	40	54,200	1.0
8	40	38,700	4.3	35	35,600	3.4	40	29,400	1.0
9	40	44,400	4 2	35	30,800	3.5	41	39,600	1 0
10	40	43,500	4.2	35	6,700	2.5	41	41,700	1 0
11	39	54,300	4.5	35	35,200	2.5	41	39,200	1.0
12	39	33,400	4 5	35	33,600	2.5	41	41,800	1.0
13	39	11,200	4.5	35	35,700	2.5	41	35,500	1.0
14	39	26,200	4.5	35	40,000	2.5	41	31,500	1.0
15	39	48,700	4.5	35	36,900	1.5	41	18,700	1.0
16	38	41,800	1.0	35	14,800	2.0	41	19,100	1.0
17	38	42,900	1.0	35	8,300	1.0	42	49,400	2.0
18	38	44,000	1.0	35	35,700	1.5	42	43,800	2.0
19	38	33,900	1 0	35	36,000	1.5	42	32,800	2 0
20	38	16,000	1.0	35	43,500	1.5	42	38,300	2 0
21	37	31,700	1.0	35	51,700	1.5	43	44,700	2.0
22	37	39,600	1.0	36	61,800	1 5	43	34,800	2 0
23	37	47,200	1 5	36	21,800	0.5	43	14,900	1.5
24	36	26,700	1.5	36	33,600	0.3	43	45,800	1 6
25	36	33,900	1.5	37	41,300	0.3	43	51,600	1.8
26	36	32,200	1.5	37	28,300	0.3	43	47,300	1 8
27	36	17,500	1.5	38	30,000	0.3	43	40,300	1.0
28	36	51,700	1.5	38	28,300	0 3	44	41,300	1.0
29	36	48,800	1.5	38	46,700	0 3	44	34,400	1.0
30	35	46,300	1.5				44	9,200	1 0
31	35	39,300	1.5				44	44,700	1.0

TABLE 90

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 90

LOWER MONUMENTAL PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1								69		47.9	.0	1.0	44.0
2								135		30.9	.0	1.0	44.0
3								100		35.1	.0	1.0	45.0
4								99		33.6	.0	1.0	45.0
5				1				103		15.6	.0	1.8	45.0
6								85		12.5	.0	1.8	45.0
7								58		45.3	.0	1.8	45.0
8				1				66		29.5	.0	1.8	45.0
9	2							30		35.6	.0	1.8	45.0
10	1							56		52.5	.0	1.8	46.0
11								45		40.8	.0	1.8	46.0
12	1							59		30.8	.0	1.8	47.0
13	2			1				57		8.8	.0	1.8	47.0
14	2			1				62		47.4	.0	2.0	47.0
15	13			1				55		53.9	.0	2.0	47.0
16	6							70		46.0	.0	2.2	47.0
17	1			2				51		53.7	.0	2.0	47.0
18	6							92		65.4	.0	2.0	48.0
19	4							75		62.1	.0	2.0	48.0
20	6							47		60.4	.0	2.0	49.0
21	7							78		84.9	.0	1.8	50.0
22	14							97		66.8	2.0	1.8	50.0
23	43							122		109.3	.0	2.0	50.0
24	78							117		88.5	.0	2.0	51.0
25	87			6				113		72.4	2.9	2.0	51.0
26	92			5				118		100.6	.7	2.5	51.0
27	93			11				114		97.7	1.3	2.5	54.0
28	135			11				123		109.4	.0	2.5	54.0
29	160			13				90		121.7	1.3	2.5	54.0
30	183			13				81		128.7	1.9	2.5	54.0
TOTALS	942			66				2467					
AVERAGES	43			5				82		59.6	.3		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 91

LOWER MONUMENTAL PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	197			10				73		112.4	3.0	2.5	54.0
2	161			13				104		110.8	2.0	2.5	54.0
3	246			18				58		101.5	5.9	2.5	55.0
4	250			18				36		113.4	8.2	2.5	55.0
5	234			28				41		114.4	9.7	2.4	55.0
6	332			32				28		125.4	17.3	2.4	55.0
7	282			23				27		129.3	16.1	2.4	55.0
8	100			10				17		125.4	11.9	2.2	55.0
9	189			33				26		109.9	10.3	2.2	55.0
10	184			40				23		105.8	7.5	2.2	55.0
11	309			49				22		109.7	6.9	2.2	55.0
12	293			51				14		106.2	7.5	2.2	55.0
13	204			44				16		79.8	5.6	2.2	55.0
14	157			31				13		77.4	3.6	2.2	55.0
15	177			39				7		85.4	2.6	2.2	55.0
16	138			35				15		101.2	1.0	2.2	54.0
17	82			39				11		102.4	.0	2.2	54.0
18*	64			15				9		84.8	.0	2.2	54.0
19*	37			23				4		79.3	3.0	2.2	54.0
20	73			29				5		107.3	2.6	2.2	55.0
21	76			37				4		107.9	.0	2.2	56.0
22	64			30				6		125.9	1.7	2.4	56.0
23	85			18				3		138.8	6.1	2.4	56.0
24	81			29				2		127.1	2.0	2.5	56.0
25	40			23				1		105.4	.0	2.5	56.0
26	67			37				1		118.8	.0	2.5	56.0
27	33			32				2		121.1	.8	2.5	56.0
28	80			36				2		133.7	17.0	1.5	56.0
29	35			11						118.1	3.9	.5	56.0
30	41			24				3		115.4	34.6	.6	54.0
31	22			8						122.5	37.6	.4	54.0
TOTALS	4333			865				573					
AVERAGES	140			28				20		110.2	7.4		

*Due to volcanic ash fallout from Mt. St. Helens, morning shifts only were counted.

TABLE 92

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 92 — LOWER MONUMENTAL PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	18			12				1		122.0	38.9	.4	54.0
2	43			20				1		123.0	19.3	1.0	54.0
3	71			23						128.8	8.6	1.4	54.0
4	37			9				2		126.2	6.1	1.4	55.0
5	25			6				1		115.1	7.0	1.4	55.0
6	98			45				3		125.2	25.0	1.4	55.0
7	142			34				0		120.3	40.2	1.4	56.0
8	80			13				0		126.0	40.2	1.4	56.0
9	71			23				0		118.8	29.9	1.4	57.0
10	61			0				18	1	115.3	31.7	1.4	57.0
11	70			18				21	90	119.9	28.4	1.4	57.0
12	65			16				1	36	129.9	36.3	1.4	57.0
13	43			10				2	4	128.7	31.4	1.4	57.0
14		80		15				2	1	131.6	40.0	1.4	57.0
15		67		10				2	12	116.3	40.0	2.0	57.0
16		49		2					4	122.8	35.4	2.3	57.0
17		101		11				1	0	119.7	68.9	2.3	57.0
18		12		2				1	0	110.6	58.5	.4	58.0
19		90		28					0	102.6	57.4	.4	58.0
20		51		12				1	28	107.7	45.1	2.0	58.0
21		44		12				2	8	98.6	59.6	2.0	59.0
22		51		14			1		10	94.0	59.6	2.0	59.0
23		77		16					48	100.5	22.3	2.0	59.0
24		49		9				1	99	106.2	18.3	2.0	60.0
25		31		18				3	0	100.5	9.9	2.0	60.0
26		55		17				1	171	90.8	11.2	2.0	61.0
27		77		19			1	2	99	81.7	.0	2.0	62.0
28		69		12				1	144	63.2	.0	2.4	63.0
29		96		31			1	2	73	47.3	.0	3.0	63.0
30		33		5			2	1	223	68.4	.0	3.0	63.0
TOTALS	824	1032		462			5	70	1051				
AVERAGES	63	61		15			1	3	50	108.7	29.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 93

LOWER MONUMENTAL PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		56		15				1	129	74.1	.0	3.0	63.0
2		50		16			1	1	0	61.1	.0	3.0	63.0
3		57		30				6	72	56.0	.0	3.0	63.0
4		62		12				2	39	41.4	.0	3.2	63.0
5		45		18				1	132	64.2	.0	3.2	63.0
6		50		29				2	150	57.0	.0	3.4	63.0
7		42		16			1	2	177	67.9	.0	3.4	63.0
8		32		13				3	214	57.5	.0	3.5	63.0
9		27		16			1	1	151	64.7	.0	3.5	64.0
10		26		36			4	2	156	65.8	.0	3.5	64.0
11		31		38			5	7	138	58.4	.0	3.5	64.0
12		42		36			6	11	126	27.6	.0	3.5	64.0
13		31		23			2	11	193	23.6	.0	3.5	64.0
14		36		25			4	12	154	45.0	.0	3.5	64.0
15		24		12			1	8	152	39.7	.0	3.5	64.0
16		24		15			1	10	214	42.3	.0	3.5	64.0
17		15		14			1	12	88	33.8	.0	3.5	64.0
18		20		15			0	25	279	38.6	.0	3.5	65.0
19		28		7			2	40	200	33.9	.0	3.5	65.0
20		20		11			1	22	151	22.1	.0	3.5	65.0
21		11		3			1	25	189	38.7	.0	4.0	65.0
22		13		6			1	40	49	36.3	.0	4.0	65.0
23		25		9			1	43	179	42.6	.0	4.0	63.0
24		24		8			4	56	127	40.4	.0	4.0	66.0
25		12		7				57	96	30.3	.0	4.0	70.0
26		11		2			1	55	15	16.3	.0	4.0	69.0
27		6		2				28	12	21.5	.0	4.0	69.0
28		9						43	16	33.9	.0	4.0	69.0
29		13		8			2	64	30	29.6	.0	4.0	69.0
30		13		2				83	8	33.1	.0	4.3	69.0
31		11		5			1	81	14	34.4	.0	4.3	69.0
TOTALS		866		449			41	754	3650				
AVERAGES		28		15			2	24	118	43.0	.0		

TABLE 94

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 94

LOWER MONUMENTAL PROJECT

AUG 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1		5		2			1	80	26	34.0	.0	4.3	69.0
2		13		1			1	121	20	17.5	.0	4.3	69.0
3		6						99	5	10.6	.0	4.3	69.0
4		10		5				114	12	23.3	.0	4.5	69.0
5		23		5				84	9	32.6	.0	4.5	69.0
6		8						127	8	21.2	.0	4.5	69.0
7		14		3				74	11	26.8	.0	4.5	69.0
8		2		2				197	10	33.0	.0	4.5	70.0
9		5						215	12	12.0	.0	4.5	70.0
10		6		1				110	9	12.7	.0	4.5	70.0
11		3		2				87	10	36.9	.0	4.5	70.0
12		6		2				92	8	20.5	.0	4.5	70.0
13		5		5				87	2	17.0	.0	4.5	70.0
14			4	2				76	2	28.5	.0	4.5	70.0
15			14	9				103	4	16.4	.0	4.5	70.0
16			5	5				122	2	23.2	.0	4.5	70.0
17			7	10				117		16.4	.0	4.5	71.0
18			7	9				128		16.7	.0	4.0	71.0
19			6	6				90		21.3	.0	4.0	71.0
20				2				106		30.9	.0	4.3	70.0
21			7	1	1			56	1	23.6	.0	4.3	70.0
22			3	2				53		19.6	.0	4.3	70.0
23			8		1			83		14.6	.0	4.3	70.0
24			6	1				127		11.6	.0	4.3	70.0
25			4					123	1	20.9	.0	4.3	70.0
26			10					104		24.2	.0	4.3	70.0
27			8	1				119		26.5	.0	4.3	70.0
28			1	1				169	1	25.7	.0	4.3	70.0
29			17	1				206		16.6	.0	4.3	70.0
30			17	3				194		11.7	.0	4.3	69.0
31			10		2	1		262		12.6	.0	4.3	69.0
TOTALS		104	134	81	4	1	2	3725	153				
AVERAGES		8	8	3	1	1	1	120	8	21.3	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 95

LOWER MONUMENTAL PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
* 1			7					85		13.1	.0	4.3	69.0
* 2			4		4			104		28.1	.0	4.3	69.0
3			6	1	4			197		30.6	.0	3.2	68.0
4			7	2		2		135		25.6	.0	3.2	68.0
5			2					147		29.5	.0	3.4	68.0
6			8	6	1			291		23.3	.0	3.4	68.0
7			11	1	1			392		14.9	.0	3.4	68.0
8			0	1	1			179		29.9	.0	3.8	68.0
9			4	2	5			238		22.7	.0	3.6	68.0
10			9	3	1			81		24.7	.0	3.5	68.0
11			9	3	2	1		233		24.3	.0	3.8	68.0
12			11	6	4	2		604		27.7	.0	3.8	67.0
13			5	1	1			333		27.2	.0	3.5	67.0
14			10	7	2			400		26.9	.0	2.5	67.0
15			2	3	1			527		41.2	.0	2.8	67.0
16			8	6	3	1		503		23.6	.0	4.0	67.0
17			1	1	2	1		392		19.5	.0	4.0	66.0
18			2	1				399		39.7	.0	3.8	66.0
19			18	12	3			992		21.7	.0	3.8	66.0
20			5	6	1			714		29.9	.0	3.5	66.0
21			20	9	4	1		920		21.3	.0	3.5	66.0
22			13	4	1	1		744		30.7	.0	3.5	66.0
23			8	5				669		46.2	.0	3.5	65.0
24			5	2				522		39.2	.0	4.0	65.0
25			3	9				369		22.2	.0	4.0	65.0
26			6	6				415		35.7	.0	3.0	65.0
27			11	8				865		41.5	.0	3.0	65.0
28			14	5	1			686		22.8	.0	3.0	65.0
29			22	7				761		31.6	.0	3.0	65.0
30			38	19	6			1181		42.0	.0	3.3	65.0
TOTALS			269	136	48	9		14078					
AVERAGES			9	5	2	1		469		28.6	.0		

* South ladder not counted due to TV malfunction.

TABLE 96

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 96 — LOWER MONUMENTAL PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			10	11	2			844		25.8	.0	3.4	65.0
2			21	9	3			773		37.0	.0	3.4	65.0
3			7	13	1	1		840		37.0	.0	3.4	64.0
4			14	8				937		11.9	.0	3.4	64.0
5			5	6				639		13.0	.0	3.4	64.0
6			1	12				721		21.7	.0	3.5	64.0
7			2	3				430		20.0	.0	3.5	63.0
8			9	3				480		17.0	.0	3.5	63.0
9			3	1				409		28.9	.0	3.5	63.0
10			10	8	1			417		23.6	.0	3.5	63.0
11			15	13	1			760		15.6	.0	3.5	63.0
12			8	5				619		17.5	.0	3.5	62.0
13			8	9	1	1		397		22.5	.0	3.5	62.0
14			8	8				358		23.4	.0	3.5	62.0
15			3	2				296		21.8	.0	3.5	62.0
16			3	6				268		25.5	.0	3.5	62.0
17			8	4				385		30.7	.0	3.5	62.0
18			3	2				240		22.0	.0	3.1	61.0
19			3	3				244		20.2	.0	3.1	61.0
20			1	3				233		23.5	.0	3.1	60.0
21			3	6				338		28.7	.0	3.0	60.0
22			1	3				284		30.7	.0	3.0	60.0
23			1	4				143		29.2	.0	3.0	60.0
24			4	3				231		26.3	.0	3.0	59.0
25			2	3				210		21.7	.0	3.0	59.0
26			2	0				258		17.6	.0	3.0	59.0
27			3	0				274		31.2	.0	3.0	59.0
28			1	3				268		28.7	.0	3.0	59.0
29			4	1				169		27.9	.0	3.0	59.0
30			3	2				73		31.6	.0	3.0	58.0
31			1	1				117		23.6	.0	3.2	58.0
TOTALS			167	155	9	2		12655					
AVERAGES			5	5	1	1		408		24.4	.0		

TABLE 97
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER MONUMENTAL - 1980

DATE	NOVEMBER			DECEMBER		
	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY
1	58	14,700	3.0	47	27,800	3.2
2	58	10,800	3.0	47	33,400	2.5
3	59	29,200	3.0	46	40,800	3.0
4	57	31,900	3.0	46	33,400	3.0
5	56	24,600	3.0	46	40,000	3.0
6	56	27,300	3.0	46	39,800	3.0
7	56	27,400	2.5	45	37,500	3.0
8	55	26,300	2.5	44	42,000	3.0
9	55	46,300	2.5	43	43,700	3.5
10	55	42,600	2.5	43	46,600	3.5
11	55	31,700	2.8	42	40,600	3.5
12	54	42,400	3.0	42	39,600	3.5
13	53	44,500	3.0	42	32,600	3.5
14	53	42,900	3.0	42	25,800	3.5
15	52	26,100	3.0	42	32,700	3.5
16	52	25,300	3.0	42	39,000	3.5
17	52	29,600	3.0	42	41,100	4.0
18	51	31,000	3.0	42	38,900	4.0
19	51	29,000	3.0	42	39,000	4.0
20	51	36,300	3.0	42	27,200	4.0
21	50	41,500	3.0	42	29,100	4.0
22	50	35,900	2.6	42	48,100	4.0
23	50	25,800	2.8	42	45,500	4.0
24	49	32,800	2.8	42	46,800	4.0
25	49	43,700	3.2	41	23,300	3.5
26	49	35,900	3.2	41	48,400	3.5
27	49	26,700	3.0	41	84,300	3.0
28	49	44,000	3.0	41	80,700	2.2
29	49	28,000	3.0	41	74,500	1.0
30		23,100		42	62,900	0.6
31				42	65,700	0.5

TABLE 98

PEAK DAYS OF MIGRATION

LOWER MONUMENTAL DAM - 1969-1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1969	May 17	2,915	Jun 26	1,630	Sep 24	899	Sep 24	2,680	Jul 11	64	Sep 17	572
1970	May 3	4,472	Jun 16	1,054	Sep 20	512	Sep 20	3,588	Jul 15	23	Sep 13	181
1971	May 27	2,275	Jun 17	1,180	Sep 16	673	Sep 26	2,557	Jul 18	65	Sep 12	189
1972	May 3	3,531	Jul 6	1,445	Sep 19	296	Sep 30	2,936	Jul 19	28	Sep 20	53
1973	May 6	5,075	Jun 19	863	Sep 15	515	Sep 21	2,658	Jul 8	25	Sep 21	113
1974	May 20	1,252	Jun 29	579	Sep 21	171	Oct 10	354	Jul 15	18	Sep 17	40
1975	May 24	1,255	Jul 12	414	Sep 16	208	Sep 16,17	448	Jul 15	19	Sep 12	57
1976	May 7	1,269	Jun 23	468	Sep 14	115	Sep 27	590	Jul 9	29	Sep 12	27
1977	Apr 20	1,800	Jun 24	452	Sep 20	115	Sep 27	1,925	Jul 5	41	Sep 20	14
1978	May 9	3,068	Jun 19	580	Sep 27	42	Sep 26	781	Jul 3	9	Sep 17	22
1979	May 24	520	Jul 1	111	Sep 21	66	Oct 9	459	Jun 24	5	Oct 7	25
1980	May 6	364	Jun 29	127	Sep 30	57	Sep 30	1,181	Jul 12	6	Sep 12	6

TABLE 99

MONTHLY TOTALS OF CHINOOK COUNTED OVER LOWER MONUMENTAL DAM

1969 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1969			1	67	38,702	25,289	13,832	1,776	5,069	1,619	340	5	86,700
1970	1		1	9,194	32,623	15,818	9,369	1,720	5,178	1,281	122	3	75,310
1971				358	19,340	23,842	14,492	857	8,599	1,397			68,885
1972				6,838	36,448	6,989	15,501	1,835	3,737	872			72,220
1973				27,168	31,973	11,282	4,343	678	4,273	840			80,557
1974				327	15,796	4,904	7,241	602	1,972	886			31,728
1975				704	17,421	6,648	4,884	548	2,428	380			33,013
1976				1,995	19,292	7,731	3,172	175	1,609	421			34,395
1977				19,125	17,093	7,884	3,092	300	1,321	486			49,301
1978				12,324	30,067	8,941	3,853	831	536	283			56,835
1979				1,332	5,637	2,010	922	211	916	260			11,288
1980				1,008	5,198	2,318	1,315	319	405	322			10,885
Total	1		2	80,440	269,590	123,656	82,016	9,852	36,043	9,047	462	8	611,117
12-Year Average				6,703	22,466	10,305	6,835	821	3,004	754			50,926

TABLE 100

MONTHLY COUNT OF STEELHEAD TROUT

LOWER MONUMENTAL DAM - 1969-1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1969		5	1,525	9,235	5,475	248	2,141	6,410	26,647	15,195	4,189	366	71,436
1970	252	1,025	1,519	3,143	2,134	232	1,989	7,947	30,701	11,194	1,615	416	62,167
1971			422	2,404	1,510	131	2,199	2,992	42,438	18,018			70,114
1972				2,182	744	86	2,336	7,184	32,417	21,908			66,857
1973				2,061	658	82	2,060	3,505	21,241	9,923			39,530
1974				1,221	256	17	1,237	2,835	4,929	4,644			15,139
1975				745	444	24	873	4,417	7,437	3,423			17,363
1976				806	256	146	1,092	4,409	10,328	4,785			21,822
1977				849	192	127	3,026	2,991	22,494	18,070			47,749
1978				1,324	128	16	719	2,522	10,477	5,354			20,540
1979				643	118	28	1,314	1,937	4,898	8,856			17,794
1980				2,467	573	70	754	3,725	14,078	12,655			34,322
Total	252	1,030	3,466	27,080	12,488	1,207	19,740	50,874	228,085	134,025	5,804	782	484,833
12-Year Average				2,257	1,041	101	1,645	4,240	11,007	11,169			40,403

TABLE 101

YEARLY TOTALS OF SALMONIDS COUNTED OVER LITTLE GOOSE DAM

1970 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Total Salmon
1970	72,971	59,640	163	2,480	135,254
1971	61,402	70,013	891	2,701	135,007
1972	64,211	63,638	408	799	129,056
1973	70,605	38,820	192	1,157	110,774
1974	26,787	14,784	124	532	42,227
1975	26,960	15,225	173	697	43,055
1976	32,359	20,894	644	733	54,630
1977	49,176	47,388	574	438	97,576
1978	56,069	24,927	168	307	81,471
1979	12,515	21,049	72	390	34,026
1980	10,605	38,627	88	124	49,444
Total	483,660	415,005	3,497	10,358	912,520
11-Year Average	43,969	37,728	318	942	82,956

TABLE 102

TABLE 102

MONTHY TOTALS OF SALMONID AND SHAD COUNTED OVER LITTLE GOOSE DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	508	5,250	2,560	1,488	191	368	240	-	-	10,605
STEELHEAD	-	-	-	3,063	668	43	821	3,858	15,305	14,869	-	-	38,627
SOCKEYE	-	-	-	-	-	4	72	12	-	-	-	-	88
COHO	-	-	-	-	-	-	-	10	94	20	-	-	124
TOTAL SALMONID	-	-	-	3,571	5,918	2,607	2,381	4,071	15,767	15,129	-	-	49,444
SHAD	-	-	-	-	-	78	457	55	14	10	-	-	614
													-

TABLE 103
WATER TEMPERATURE AND STREAM FLOW DATA
LITTLE GOOSE - 1980

DATE	JANUARY		FEBRUARY			MARCH	
	DISCHARGE	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY
1	14,300		35,200		45.0	42,100	1.0
2	29,900		25,100		44.0	20,300	0.5
3	27,300		7,600		44.0	27,800	0.6
4	32,800		28,200		44.0	39,500	0.5
5	19,900		40,100		44.0	40,000	0.5
6	7,100		38,200		42.0	44,800	0.5
7	24,800		26,900		42.0	49,900	0.7
8	41,100		33,800		42.0	31,000	1.3
9	44,200		31,600		42.0	35,300	1.4
10	42,200		5,700		42.0	43,900	1.9
11	49,200	36.0	33,200	3.2	42.0	37,300	1.7
12	32,700	36.0	33,500	3.3	42.0	40,600	1.7
13	12,300	36.0	34,700	3.1	42.0	32,200	1.5
14	26,100	36.0	36,100	4.3	41.0	29,600	1.5
15	46,300	36.0	38,600	4.0	41.0	19,100	1.5
16	37,300	36.0	14,700	4.0	42.0	18,200	1.5
17	43,100	37.0	10,700	3.8	43.0	44,100	1.5
18	42,800	37.0	33,000	3.8	43.0	39,700	1.5
19	32,000	38.0	32,100	3.6	43.0	32,500	2.0
20	15,800	38.0	39,800	2.5	43.0	38,300	2.0
21	31,400	38.0	45,900	2.3	42.0	42,200	1.9
22	38,000	38.0	55,500	2.0	42.0	35,100	2.9
23	44,000	39.0	26,200	1.5	42.0	15,400	2.9
24	28,900	39.0	31,800	1.5	43.0	43,200	2.5
25	32,900	40.0	38,500	1.5	43.0	50,000	2.0
26	31,600	40.0	25,900	2.1	43.0	45,300	2.3
27	20,000	42.0	28,400	2.5	45.0	40,400	2.0
28	49,000	42.0	28,900	2.5	45.0	39,300	2.0
29	50,400	42.0	47,400	2.5	45.0	33,000	2.2
30	42,400				45.0	9,400	2.0
31	39,800				45.0	41,600	2.4

Water temperature and turbidity data from January 1 through February 10 were not collected.

TABLE 104

DAILY FISH PASSAGE SUMMARY REPORT — TABLE 104 — LITTLE GOOSE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — APR 1980

	FISH COUNTS									RIVER CONDITIONS			
DATE	[illegible] ADULTS [illegible]	[illegible] ADULTS [illegible]	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1							85		46.5	.0	2.4	46.0
2							94		30.6	.0	1.8	46.0
3							112		35.9	.0	1.2	46.0
4							107		28.3	.0	2.5	46.0
5							144		16.6	.0	2.8	44.0
6				1			129		12.8	.0	2.8	44.0
7							75		41.1	.0	2.7	44.0
8	1						39		27.5	.0	1.6	45.0
9							65		33.7	.0	1.8	45.0
10							66		49.4	.0	2.0	46.0
11							68		42.0	.0	2.8	46.0
12	4						68		29.1	.0	2.7	46.0
13	1						85		10.5	.0	3.1	46.0
14							46		41.6	.0	4.0	46.0
15	1						44		51.7	.0	4.0	47.0
16	7						74		44.7	.0	3.9	47.0
17	9			1			81		55.0	.0	3.7	47.0
18	9						79		61.0	.0	2.6	47.0
19	1			2			87		63.5	.0	2.6	47.0
20	15			2			104		60.6	.0	3.0	48.0
21	2			1			91		76.5	.0	3.0	50.0
22	15						107		74.8	.0	2.6	50.0
23	4						143		100.2	.0	2.4	50.0
24	15						153		85.9	.0	2.4	52.0
25	53			2			150		76.0	.0	2.5	52.0
26	71			4			149		100.4	.0	2.4	54.0
27	82			5			136		98.2	.0	2.4	54.0
28	7[illegible]			8			172		107.7	.0	2.5	54.0
29	4[illegible]			4			164		118.3	.0	2.3	54.0
30	61			6			146		125.2	.0	2.1	54.0
TOTALS	470			38			3063					
AVERAGES	2[illegible]			3			102		58.1	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 105

LITTLE GOOSE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	101			12				72		109.0	.0	2.1	54.0
2	102			9				73		106.1	.0	2.2	54.0
3	183			4				75		99.9	.0	2.2	54.0
4	247			15				86		109.2	.0	2.4	54.0
5	90			15				54		118.4	.0	2.4	54.0
6	161			14				39		121.1	.0	2.3	54.0
7	127			15				39		126.5	.0	2.7	54.0
8	254			26				40		114.2	.0	2.6	54.0
9	151			19				18		105.6	.0	2.4	54.0
10	250			40				36		105.0	.0	2.4	54.0
11	281			47				25		106.5	.0	2.4	53.0
12	299			45				17		102.4	.0	2.6	53.0
13	459			62				19		81.9	.0	2.8	53.0
14	288			40				6		72.9	.0	1.6	53.0
15	355			39				10		88.7	.0	1.5	53.0
16	146			35				9		100.1	.0	2.2	54.0
17	154			31				9		96.5	.0	2.2	54.0
18	58			18				2		86.0	.0	2.2	54.0
19	73			34				2		78.5	.0	2.3	54.0
20	43			22				6		101.7	.0	2.5	54.0
21	49			19				4		110.7	.0	2.5	55.0
22	96			44				2		123.0	.0	2.7	55.0
23	49			28				3		131.4	.0	2.8	55.0
24	61			17				5		125.3	.0	2.8	55.0
25	77			19				4		105.6	.0	2.5	55.0
26	82			30				2		120.1	.0	2.3	55.0
27	41			17				4		118.4	.0	2.3	54.0
28	28			15				2		126.4	.0	2.2	54.0
29	42			20				4		117.5	.0	2.4	54.0
30	44			17				0		113.5	.0	2.0	54.0
31	70			21				1		118.7	.0	.6	55.0
TOTALS	4461			789				668					
AVERAGES	144			25				22		107.8	.0		

TABLE 105

TABLE 106

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 106 — LITTLE GOOSE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	44			35				4		119.1	.0	1.6	55.0
2	37			13						120.9	.0	1.4	55.0
3	23			17						126.5	.0	1.4	55.0
4	44			15						122.8	.0	1.7	55.0
5	54			18						111.0	.0	2.1	55.0
6	51			16						123.3	.0	2.4	55.0
7	35			15						119.8	.0	2.9	56.0
8	101			20						122.7	.0	2.9	56.0
9	119			12						114.3	.0	3.1	56.0
10	66			13						114.3	.0	3.1	58.0
11	37			18						118.6	.0	3.2	58.0
12	80			10						127.5	.0	3.2	58.0
13	36			10				1		126.7	.0	3.1	58.0
14	64			14				3		125.7	.0	3.1	58.0
15	66			9				5		116.2	.0	2.9	60.0
16		82		8				2		120.5	.0	3.0	60.0
17		97		13				1		112.9	.0	3.1	60.0
18		91		8				1		111.6	.0	2.9	58.0
19		88		8				2		100.7	.0	2.7	59.0
20		44		15				0		104.3	.0	2.5	59.0
21		65		11				8		100.5	.0	2.7	60.0
22		58		9				0		91.8	.0	3.5	61.0
23		90		14				0	16	100.1	.0	2.7	61.0
24		56		18				1	0	100.0	.0	2.8	61.0
25		65		10				2	7	98.5	.0	3.5	61.0
26		67		18			1	3	2	89.1	.0	2.7	61.0
27		76		25				0	6	81.0	.0	3.1	61.0
28		99		13				6	7	66.4	.0	3.2	61.0
29		200		24			2	3	18	48.3	.0	3.7	61.0
30		80		16			1	1	22	66.2	.0	4.7	61.0
TOTALS	857	1258		445			4	43	78				
AVERAGES	57	84		15			1	2	10	106.7	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 107 — LITTLE GOOSE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		76		10			2	2	17	72.1	.0	4.7	61.0
2		108		24			2	4	22	57.7	.0	4.7	62.0
3		79		21			3	2	6	58.8	.0	4.4	62.0
4		78		24			1	8	16	42.8	.0	4.1	62.0
5		108		13			2	6	28	64.7	.0	4.1	62.0
6		61		21				6	20	57.1	.0	4.5	63.0
7		78		24				10	18	66.0	.0	4.5	64.0
8		42		14				12	22	56.3	.0	4.4	64.0
9		58		20			2	10	31	65.5	.0	4.8	64.0
10		45		12				18	23	64.6	.0	4.8	64.0
11		34		15			2	18	9	56.9	.0	3.7	65.0
12		58		8			6	15	23	29.3	.0	4.1	65.0
13		48		7			6	12	15	24.0	.0	4.2	65.0
14		37		4			6	13	22	42.4	.0	4.5	65.0
15		39		14			6	18	36	38.2	.0	4.5	65.0
16		27		8			9	15	13	44.6	.0	5.0	65.0
17		36		14			2	33	27	34.5	.0	5.0	65.0
18		18		6			1	12	23	37.7	.0	4.4	65.0
19		13		2			3	34	7	34.2	.0	4.7	67.0
20		30		2			1	33	16	22.6	.0	5.0	68.0
21		18		2			5	32	7	37.5	.0	5.0	68.0
22		4		7			0	28	0	35.7	.0	5.0	69.0
23		18		3			3	41	13	43.5	.0	5.0	70.0
24		19		2			1	58	2	41.0	.0	5.0	71.0
25		15		6			2	42	7	28.1	.0	5.0	71.0
26		21		2			1	64	5	17.5	.0	5.0	71.0
27		10		1			3	60	15	17.5	.0	5.0	71.0
28		2		0			0	36	6	34.4	.0	5.0	71.0
29		7		2			1	53	4	31.2	.0	5.0	72.0
30		8		0			2	43	1	32.6	.0	5.0	72.0
31		3		2			0	83	3	34.1	.0	5.0	72.0
TOTALS		1198		290			72	821	457				
AVERAGES		39		9			3	26	15	42.7	.0		

TABLE 108

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 108

LITTLE GOOSE PROJECT

AUG 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		11		2			2	101	2	33.7	.0	5.0	72.0
2		10		1			5	142	15	16.8	.0	5.0	72.0
3		12					1	127	5	11.2	.0	5.0	72.0
4		9		4			1	172	9	23.0	.0	5.0	72.0
5		8						164	1	31.9	.0	4.2	72.0
6		2		1	3		2	141	2	21.1	.0	4.1	72.0
7		4						128	2	24.9	.0	3.9	72.0
8		1						100	1	31.4	.0	5.0	72.0
9		6		2				144		13.5	.0	5.0	72.0
10		4						93		13.8	.0	5.0	72.0
11		6						105	1	37.4	.0	5.0	73.0
12		4		1				146	1	17.2	.0	5.0	73.0
13		5						75	4	22.1	.0	5.0	73.0
14		2						75	4	28.3	.0	5.0	73.0
15		5		1				97	2	16.9	.0	5.0	71.0
16			3					96	0	25.1	.0	5.0	71.0
17			5					162	2	15.7	.0	4.7	71.0
18			3					85	1	16.0	.0	4.6	71.0
19			10					111	0	21.1	.0	4.6	71.0
20			6	1				131		31.6	.0	4.7	71.0
21			3	1				116		22.1	.0	4.6	71.0
22			1	2				101		20.7	.0	3.6	71.0
23			1	1		1		84		14.1	.0	4.6	71.0
24			4		2			96		12.0	.0	4.2	71.0
25			8	1				93		21.1	.0	3.6	70.0
26			3		3			96		25.0	.0	3.6	70.0
27			8					168	0	25.6	.0	4.0	71.0
28			4				1	164	0	24.6	.0	3.4	70.0
29			4					192	2	17.7	.0	4.1	70.0
30			6					135	1	11.9	.0	4.1	70.0
31			15			1		218	0	13.3	.0	4.3	70.0
TOTALS		89	84	18	8	2	12	3858	55				
AVERAGES		6	5	1	1	0	1	124	2	21.3	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 109 — LITTLE GOOSE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			11		5			267	1	13.2	.0	4.1	70.0
2			13					166		27.7	.0	4.3	70.0
3			19		2			256		29.2	.0	4.2	69.0
4			11					156		25.9	.0	4.2	68.0
5			7	1	1			187	2	30.7	.0	5.0	68.0
6			2	2	2			161	1	23.0	.0	5.0	68.0
7			5		1			274		14.6	.0	5.0	68.0
8			8	2	1			338	4	29.5	.0	5.0	68.0
9			2	1				413		23.5	.0	5.0	68.0
10			5		1	1		296		24.2	.0	5.0	68.0
11			6	1	2			310	2	23.5	.0	5.0	68.0
12			9	2	5			425		27.3	.0	5.0	68.0
13			8	5	1	1		375		27.5	.0	4.6	68.0
14			6	4	2	2		572	1	26.6	.0	4.8	68.0
15			8	5	1	1		498	2	41.5	.0	4.4	68.0
16			10	5	1	1		432		23.2	.0	5.0	68.0
17			18	8	0			718		17.9	.0	4.8	68.0
18			7	1	3	1		509		34.5	.0	4.2	68.0
19			6	1	8	2		615		25.6	.0	3.9	68.0
20			9	4	2	4		776		30.2	.0	4.0	68.0
21			15	5	7	5		890		22.0	.0	4.0	68.0
22			11	5	6	5		678		30.6	.0	4.1	68.0
23			5	7	5	3		818		44.7	.0	4.1	68.0
24			9	6	2			941		40.5	.0	4.1	68.0
25			3	2				648		22.4	.0	4.2	68.0
26			6	0				543		36.7	.0	5.0	68.0
27			4	4	2	1		470		40.0	.0	5.0	67.0
28			10	11				750		24.5	.0	5.0	67.0
29			21	8	5	1		735		30.6	.0	5.0	67.0
30			19	5	1			1088	1	42.0	.0	4.5	67.0
TOTALS			273	95	66	28		15305	14				
AVERAGES			9	4	3	2		510	1	28.4	.0		

TABLE 109

TABLE 110

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 110 — LITTLE GOOSE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			9	6	2			891	2	25.6	.0	4.3	66.0
2			4	8	3	1		767	4	32.8	.0	4.2	65.0
3			14	9	1			795		35.3	.0	3.4	64.0
4			0	5				548		14.3	.0	4.2	64.0
5			4	8				529		16.8	.0	4.8	64.0
6			8	6		1		1040		23.2	.0	4.2	64.0
7			2	3				719		18.3	.0	5.0	64.0
8			3	2				682		17.7	.0	5.0	64.0
9			2	6	1	1		643		29.3	.0	3.4	63.0
10			0	2	2			725		23.2	.0	5.0	63.0
11			4	2	1	1		652		16.3	.0	5.0	63.0
12			8	5				327		14.7	.0	5.0	63.0
13			8	5	2			666	2	22.3	.0	5.0	63.0
14			0	1				356		23.9	.0	5.0	63.0
15			6	2				192		23.5	.0	4.8	62.0
16			2	5				436		24.8	.0	4.8	62.0
17			0	3				570		27.9	.0	4.9	62.0
18			9	1				481		23.4	.0	4.8	62.0
19			5	2	1			436		19.9	.0	4.5	62.0
20			3	1	1			326		24.9	.0	4.4	62.0
21			2	3				270		27.3	.0	4.3	62.0
22			2	2	1			413		28.9	.0	4.3	61.0
23			0	1				259		29.0	.0	4.0	60.0
24			1	2				302	2	26.0	.0	4.0	60.0
25			4	1				320		19.2	.0	4.0	60.0
26			2	2				301		19.7	.0	3.0	59.0
27			3	1				341		31.3	.0	3.8	60.0
28								207		25.5	.0	3.9	60.0
29				1				306		29.7	.0	4.0	60.0
30				1				178		31.1	.0	4.2	59.0
31			1	1		1		191		23.2	.0	5.0	57.0
TOTALS			143	97	15	5		14869	10				
AVERAGES			5	3	1	1		480	2	24.2	.0		

TABLE 111
WATER TEMPERATURE AND STREAM FLOW DATA
LITTLE GOOSE - 1980

DATE	NOVEMBER			DECEMBER
	WATER TEMP.	DISCHARGE	TURBIDITY	DISCHARGE
1	57.0	15,200	4.0	27,200
2		11,100		34,000
3		29,700		39,500
4		28,600		31,500
5		22,800		42,400
6		27,800		38,700
7		27,600		35,900
8		29,500		39,500
9		44,700		42,200
10		42,100		45,700
11		31,600		39,400
12		40,500		38,100
13		42,600		31,800
14		40,200		29,800
15		30,400		33,700
16		27,200		39,200
17		28,700		41,100
18		31,800		37,700
19		29,300		38,200
20		33,900		29,200
21		42,100		28,500
22		34,900		47,200
23		26,500		46,700
24		31,500		43,300
25		45,100		23,300
26		36,200		48,200
27		26,700		80,600
28		40,000		77,600
29		30,400		70,000
30		23,800		62,200
31				62.400

Water temperature and turbidity data from November 2 through December were not collected.

TABLE 112

PEAK DAYS OF MIGRATION

LITTLE GOOSE DAM - 1970-1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1970	May 4	3,464	Jun 28	938	Sep 19	622	Sep 22	2,424	Jul 25	36	Sep 19	146
1971	May 28	1,941	Jun 18	1,160	Sep 17	539	Sep 27	2,515	Jul 14	64	Sep 14	238
1972	May 14	4,309	Jul 7	1,318	Sep 20	148	Oct 3	3,655	Jul 16	22	Sep 20	63
1973	May 1	3,415	Jun 24	1,616	Sep 17	409	Sep 24	1,406	Jul 11	14	Sep 15	111
1974	May 20	1,310	Jul 11	842	Sep 21	160	Oct 5	408	Jul 17	12	Sep 29	43
1975	May 26	1,027	Jul 14	344	Sep 22	165	Sep 20	538	Jul 15	36	Sep 17	49
1976	May 12	1,397	Jun 24	780	Sep 21	93	Sep 27	886	Jul 5	37	Sep 23	57
1977	Apr 23	2,930	Jun 16	542	Oct 1	104	Oct 1	2,446	Jul 2	42	Sep 21	61
1978	May 13	3,318	Jun 22	686	Oct 1	60	Sep 26	783	Jul 8	20	Sep 21	32
1979	May 16	397	Jun 22	275	Sep 28	50	Sep 9	540	Sep 22	10	Sep 9	30
1980	May 13	521	Jun 29	224	Sep 29	29	Sep 30	1,088	Jul 16	9	Sep 21	12

TABLE 113

MONTHLY TOTALS OF CHINOOK COUNTED OVER LITTLE GOOSE DAM

1970 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1970				6,765	32,616	15,204	11,200	1,529	4,508	965	178	6	72,971
1971				133	16,012	24,096	14,473	707	5,319	606	55	1	61,402
1972				2,226	37,991	5,585	14,747	1,614	1,445	576	27		64,211
1973				17,490	34,570	10,661	4,344	520	2,472	528	19	1	70,605
1974				136	14,224	4,451	6,213	556	749	449	9		26,787
1975				152	14,161	6,487	4,182	540	1,143	295			26,960
1976				612	17,403	9,470	3,575	302	642	355			32,359
1977				16,973	19,936	6,707	4,181	182	842	355			49,176
1978				8,190	29,195	10,676	6,172	717	621	498			56,069
1979				947	4,436	4,396	1,391	254	802	289			12,515
1980				508	5,250	2,560	1,488	191	368	240			10,605
TOTAL				54,132	225,794	100,293	71,966	7,112	18,911	5,156	288	8	483,660
11-Year Average				4,921	20,527	9,118	6,542	646	1,719	469			43,969

TABLE 114

MONTHLY COUNT OF STEELHEAD TROUT OVER LITTLE GOOSE DAM

1970 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1970			3,346	4,148	1,762	167	1,485	7,487	27,898	11,931	1,136	280	59,640
1971			586	1,968	1,319	85	1,286	3,337	38,988	19,674	2,161	609	70,013
1972	248	251	943	2,565	720	54	1,209	6,637	25,089	24,323	1,258	341	63,638
1973	133	80	1,039	2,051	829	65	1,249	2,856	16,650	12,420	1,129	319	38,820
1974	191	294	543	1,105	278	5	726	2,203	3,970	4,721	583	165	14,784
1975	96	75	70	732	472	16	390	3,433	6,230	3,711			15,225
1976				1,052	345	133	678	3,556	8,988	6,142			20,894
1977				1,340	272	155	1,951	2,738	18,753	22,179			47,388
1978				1,625	216	20	593	2,617	11,547	8,309			24,927
1979				742	222	16	1,614	2,326	5,278	10,851			21,049
1980				3,063	668	43	821	3,858	15,305	14,869			38,627
Total	668	700	6,527	20,391	7,103	759	12,002	41,048	178,696	139,130	6,267	1,714	415,005
11-Year Average				1,854	646	69	1,091	3,732	16,245	12,648			37,728

TABLE 115

YEARLY TOTALS OF SALMONIDS COUNTED OVER LOWER GRANITE DAM

1975 - 1980

Year	Chinook	Steelhead	Sockeye	Coho	Total Salmonid
1975	28,460	17,311	209	921	46,901
1976	31,667	23,017	531	900	56,115
1977	49,123	53,037	458	268	102,886
1978	54,246	30,068	123	152	84,589
1979	12,548	25,046	25	158	37,777
1980	10,986	40,454	96	43	51,579
Total	187,030	188,933	1,442	2,442	379,847
6-year Average	31,172	31,489	240	407	63,308

TABLE 116

MONTHLY TOTALS OF SALMONIDS , SHAD COUNTED OVER LOWER GRANITE DAM

1980

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-		-	328	5,227	2,558	1,916	241	345	343	28	-	10,986
STEELHEAD	-	-	1,149	3,403	1,172	36	517	3,378	13,291	15,455	2,053	-	40,454
SOCKEYE	-	-	-	-	-	-	90	6	-	-	-	-	96
COHO	-	-	-	-	-	-	1	-	34	8	-	-	43
TOTAL SALMONID	-	-	1,149	3,731	6,399	2,594	2,524	3,625	13,670	15,806	2,081	-	51,579
SHAD	-	-	-	-	-	1	110	197	-	-	-	-	308

TABLE 117
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER GRANITE - 1980

DATE	JANUARY			FEBRUARY		
	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY
1	40	18,400	5.0	36	37,000	5.0
2	40	27,200	5.0	35	30,100	5.0
3	40	27,300	5.0	36	17,700	5.0
4	40	31,300	5.0	35	28,400	5.0
5	40	19,300	5.0	35	34,200	5.0
6	40	14,900	5.0	35	28,900	4.0
7	40	27,900	5.0	35	29,400	4.0
8	38	41,600	5.0	35	33,600	4.0
9	39	39,200	5.0	36	29,300	4.0
10	39	37,500	5.0	36	19,800	2.5
11	39	38,900	5.0	36	27,800	2.0
12	38	33,500	5.0	37	29,100	1.8
13	38	19,400	5.0	36	31,800	1.7
14	37	30,700	5.0	36	33,800	1.7
15	37	39,700	5.0	36	37,800	1.7
16	37	38,300	5.0	36	27,700	1.8
17	37	41,400	4.1	37	7,600	2.2
18	37	41,000	3.3	37	31,300	2.8
19	37	37,300	2.0	37	31,900	3.0
20	37	24,700	1.5	37	35,500	3.0
21	38	31,100	1.5	37	46,000	2.5
22	38	38,900	1.5	38	47,100	2.0
23	38	38,800	1.8	38	33,800	1.6
24	38	33,900	2.8	39	32,300	0.7
25	38	31,600	3.0	39	38,800	0.4
26	38	32,200	3.5	39	29,800	0.4
27	37	22,400	3.8	39	26,200	0.4
28	37	40,600	4.0	40	31,100	0.6
29	37	45,200	5.0	40	39,300	0.7
30	36	39,500	5.0			
31	36	36,300	5.0			

TABLE 118

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 118 — LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — MAR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO	-			DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1								0		41.7	.0	1.0	40.0
2								2		33.3	.0	1.6	40.0
3								2		27.0	.0	2.0	40.0
4								0		34.4	.0	1.7	41.0
5								2		39.7	.0	1.7	41.0
6								0		39.1	.0	1.4	41.0
7								2		47.4	.0	1.4	41.0
8								62		37.0	.0	1.2	42.0
9								60		35.2	.0	1.8	42.0
10								25		41.0	.0	2.0	41.0
11								50		34.7	.0	2.1	41.0
12								55		43.2	.0	2.0	41.0
13								29		30.0	.0	2.2	41.0
14								23		30.2	.0	2.3	41.0
15								49		34.5	.0	2.2	41.0
16								54		20.7	.0	2.2	41.0
17								25		40.7	.0	2.2	41.0
18								35		34.9	.0	2.5	42.0
19								42		35.0	.0	2.2	42.0
20								17		37.9	.0	2.0	44.0
21								29		36.1	.0	1.5	44.0
22								54		36.8	.0	1.7	44.0
23								73		27.5	.0	2.1	44.0
24								37		39.0	.0	2.4	44.0
25								52		46.6	.0	2.6	44.0
26								46		37.2	.0	2.3	44.0
27								43		41.6	.0	2.1	44.0
28								65		35.0	.0	2.3	45.0
29								107		35.4	.0	2.2	45.0
30								71		22.8	.0	2.2	45.0
31								38		36.8	.0	2.3	45.0
TOTALS								1149					
AVERAGES								37		35.9	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 119

LOWER GRANITE PROJECT

APR 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1								95		42.1	.0	2.8	44.0
2								84		29.9	.0	3.0	44.0
3								102		32.6	.0	3.4	44.0
4								119		28.7	.0	3.4	44.0
5								113		21.7	.0	3.6	45.0
6	1							155		22.9	.0	3.6	45.0
7								87		34.3	.0	3.6	46.0
8								108		30.6	.0	4.0	46.0
9								107		35.8	.0	4.0	46.0
10								80		43.5	.0	4.0	46.0
11	1							68		36.8	.0	3.9	46.0
12	1							131		31.6	.0	2.6	47.0
13								120		28.0	.0	3.0	47.0
14	1							72		32.5	.0	3.1	48.0
15								92		44.1	.0	4.0	47.0
16	1							70		51.4	.0	3.7	48.0
17	1							105		53.6	.0	3.3	48.0
18	9							116		57.4	.0	3.0	50.0
19	5							112		65.8	.0	3.0	50.0
20	8			1				126		67.7	.0	3.1	50.0
21	2							106		74.0	.0	3.7	52.0
22	8			1				92		81.0	.0	3.0	53.0
23	8							101		88.9	.0	3.0	52.0
24	11							154		95.9	.0	2.5	52.0
25	9							139		83.2	.0	2.5	52.0
26	21			1				143		100.2	.0	2.6	51.0
27	53			8				123		98.3	.0	2.4	51.0
28	37			3				162		106.8	.0	2.8	51.0
29	64			9				161		117.0	.0	3.0	52.0
30	56			8				160		117.2	.0	2.8	52.0
TOTALS	297			31				3403					
AVERAGES	16			4				113		58.4	.0		

TABLE 120

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 120 — LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — MAY 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	26			5				116		106.2	.0	2.7	52.0
2	36			10				72		104.4	.0	3.0	52.0
3	73			8				85		104.6	.0	2.8	52.0
4	158			22				104		109.1	.0	2.7	51.0
5	190			20				145		114.6	.0	3.3	54.0
6	97			21				75		124.4	.0	2.8	54.0
7	99			24				62		114.7	.0	3.2	54.0
8	164			30				51		106.8	.0	3.0	54.0
9	143			33				50		107.5	.0	2.8	53.0
10	384			38				51		110.5	.0	3.0	52.0
11	100			18				27		103.0	.0	2.8	52.0
12	228			43				33		90.8	.0	2.5	52.0
13	184			44				46		81.0	.0	2.8	53.0
14	342			70				43		85.5	.0	3.0	53.0
15	322			72				34		91.3	.0	3.0	53.0
16	175			54				45		98.6	.0	3.0	54.0
17	395			54				34		91.4	.0	3.0	54.0
18	334			35				18		86.1	.0	3.0	54.0
19	66			36				9		83.7	.0	2.6	54.0
20	73			34				6		96.2	.0	3.2	54.0
21	112			42				9		109.0	.0	3.0	55.0
22	36			23				6		117.6	.0	3.0	55.0
23	30			22				8		123.4	.0	2.8	56.0
24	130			57				11		123.8	.0	3.2	55.0
25	73			19				8		111.4	.0	3.0	54.0
26	113			41				11		124.9	.0	2.9	52.0
27	45			23				6		122.5	.0	2.8	51.0
28	38			2				2		122.7	.0	1.4	50.0
29	62			35				1		116.7	.0	1.8	52.0
30 *	10			13				2		115.3	.0	2.3	54.0
31	26			15				2		112.0	.0	1.8	55.0
TOTALS	4264			963				1172					
AVERAGES	138			31				38		106.8	.0		

* Due to illness of the counter, afternoon shift only was counted.

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 121

LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JUN 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1	26			15						111.7	.0	2.0	55.0
2	57			40				1		124.6	.0	2.2	56.0
3	65			34						126.0	.0	2.0	56.0
4	30			8				1		119.9	.0	2.0	56.0
5	28			22				2		115.4	.0	3.1	56.0
6	29			22				1		117.9	.0	3.1	55.0
7	53			24						123.2	.0	3.1	55.0
8	44			14				2		116.4	.0	2.8	56.0
9	18			23						114.4	.0	2.8	56.0
10	56			24				1		113.6	.0	3.8	57.0
11	58			11				2		123.5	13.9	3.6	57.0
12	94			17						126.1	15.5	3.9	60.0
13	105			6				1		136.1	25.7	3.0	58.0
14	89			5						121.3	10.9	2.9	58.0
15	57			6				6		119.8	9.2	2.9	58.0
16	30			13				3		115.4	4.7	3.2	58.0
17	60			20				1		109.5	14.1	3.2	58.0
18		136		18				2		107.9	19.0	3.0	58.0
19		163		12						107.6	18.6	3.3	58.0
20		96		10						103.8	14.9	4.0	60.0
21		107		15						102.5	12.7	4.1	61.0
22		65		8						97.4	8.4	4.0	61.0
23		48		10				1		101.4	13.6	3.6	61.0
24		52		17				1		94.8	6.2	3.5	62.0
25		75		27				2		93.1	4.4	3.8	61.0
26		78		12					1	87.2	.0	3.2	60.0
27		33		16				2		80.8	.0	3.0	62.0
28		87		32				2		69.6	.0	4.0	62.0
29		117		30				4		56.5	.0	4.5	62.0
30		68		23				1		68.9	.0	5.0	60.0
TOTALS	899	1125		534				36	1				
AVERAGES	53	87		18				2	1	106.9	6.4		

TABLE 122

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

TABLE 122

LOWER GRANITE PROJECT

JUL 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1		153		33			4	5		61.9	.0	5.0	62.0
2		155		29				3		56.0	.0	5.0	63.0
3		129		27			2	2		51.8	.0	5.0	64.0
4		62		20			1	2		62.8	.0	4.1	64.0
5		111		37			2	8		65.7	.0	4.2	64.0
6		101		29			3	6		58.2	.0	4.2	64.0
7		29		17			1	3		63.9	.0	4.0	65.0
8		76		23			2	0		54.4	.0	4.2	65.0
9		40		25				1		58.5	.0	4.0	65.0
10		49		24			6	2		55.4	.0	4.1	65.0
11		33		18			2	8		52.8	.0	5.0	65.0
12		93		32			7	11	4	32.6	.0	5.0	67.0
13		35		18			1	9	11	41.2	.0	5.0	68.0
14		29		14			6	8	20	44.3	.0	5.0	68.0
15		43		23			8	16	1	35.1	.0	5.0	67.0
16		30		14			2	14		39.9	.0	5.0	68.0
17		38		10			9	17		38.7	.0	5.0	68.0
18		19		13			2	14		39.6	.0	5.0	68.0
19		38		17			3	17	18	35.6	.0	5.0	68.0
20		31		11			3	14	9	24.2	.0	5.0	67.0
21		16		12			1	23	4	38.2	.0	5.0	69.0
22		6		6			4	32	9	31.5	.0	5.0	72.0
23		7		12			7	28	13	38.0	.0	5.0	72.0
24		25		4				30	4	34.6	.0	5.0	72.0
25		39		11	1		1	34	4	27.8	.0	5.0	72.0
26		18		11			2	25	9	28.2	.0	5.0	72.0
27		9		4				25	0	26.1	.0	5.0	73.0
28		8		2			2	33	0	30.1	.0	5.0	74.0
29		13		5			4	33	0	28.2	.0	5.0	74.0
30		21		1			4	49	2	29.7	.0	5.0	73.0
31		12		4			1	45	2	30.7	.0	5.0	73.0
TOTALS		1414		502	1		90	517	110				
AVERAGES		46		16	1		3	17	6	42.4	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 123

LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

AUG 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1		6						47		27.5	.0	5.0	74.0
2		22		8			2	134	10	21.2	.0	5.0	73.0
3		22		5			2	161	8	23.6	.0	5.0	72.0
4		7		1				106	4	22.2	.0	5.0	72.0
5		7		2				147	14	25.7	.0	5.0	72.0
6		15		5				164	16	19.9	.0	5.0	73.0
7		16		1				93	30	23.1	.0	5.0	73.0
8		9					1	100	6	24.5	.0	5.0	73.0
9		7						68	8	16.9	.0	5.0	73.0
10		6		2				109	17	23.1	.0	5.0	72.0
11		2						99	57	30.4	.0	5.0	73.0
12		6		1				55	13	20.8	.0	5.0	72.0
13		4						50	2	28.9	.0	5.0	72.0
14		2						21	1	25.9	.0	5.0	72.0
15		4		1				128		16.5	.0	5.0	72.0
16		3		1				143		23.5	.0	5.0	70.0
17		11						106		26.6	.0	5.0	71.0
18			1					80	1	11.1	.0	5.0	70.0
19			6	1				142		22.6	.0	5.0	70.0
20			2					93		28.7	.0	5.0	70.0
21			2					96	1	18.7	.0	5.0	72.0
22			5	1				102		23.8	.0	5.0	72.0
23			6	3				110	6	13.4	.0	5.0	70.0
24			7	2				140	3	19.3	.0	5.0	69.0
25			4	3				88		19.0	.0	5.0	68.0
26			4					83		24.3	.0	5.0	69.0
27			6	1				123		22.3	.0	5.0	69.0
28			2					189		19.8	.0	5.0	69.0
29			2					102		15.0	.0	5.0	68.0
30			3				1	127		11.1	.0	5.0	68.0
31			4				0	172		17.9	.0	5.0	68.0
TOTALS		149	54	38			6	3378	197				
AVERAGES		9	4	2			1	109	12	21.5	.0		

TABLE 124

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 124

LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

SEP 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			4	1				138		18.0	.0	5.0	68.0
2			17					202		21.6	.0	5.0	68.0
3			12	1				292		28.2	.0	5.0	68.0
4			10					162		24.5	.0	5.0	68.0
5			10					169		25.5	.0	5.0	68.0
6			13	1				161		27.3	.0	5.0	68.0
7			3					226		26.4	.0	5.0	67.0
8			7	1				195		24.6	.0	5.0	67.0
9			8	1				218		27.4	.0	5.0	66.0
10			2	3				265		28.0	.0	5.0	66.0
11			2	2	1			187		25.4	.0	5.0	67.0
12			2		1			376		22.5	.0	5.0	66.0
13			11	7	1			252		24.5	.0	5.0	66.0
14			7	2				378		27.0	.0	5.0	66.0
15			4	4				360		27.8	.0	5.0	66.0
16			10	3	2			488		27.7	.0	5.0	66.0
17			6	3	1			443		31.3	.0	5.0	67.0
18			10	8		1		446		32.9	.0	5.0	67.0
19			6	4	1	1		708		28.4	.0	5.0	67.0
20			3	3	2			646		33.7	.0	5.0	65.0
21			5	12	6	1		807		26.3	.0	5.0	65.0
22			7	8	5			572		31.0	.0	5.0	65.0
23			15	7		4		647		38.7	.0	5.0	64.0
24			12	9	3	1		769		36.6	.0	5.0	64.0
25			11	6	2	1		676		31.2	.0	5.0	64.0
26			5	6				695		35.5	.0	5.0	64.0
27			3	6				835		40.6	.0	4.8	64.0
28			3	9				905		24.2	.0	5.0	64.0
29			3	7				374		27.9	.0	5.0	63.0
30			12	8				699		40.3	.0	5.0	63.0
TOTALS			223	122	25	9		13291					
AVERAGES			7	5	2	1		443		28.8	.0		

MONTHLY FISH PASSAGE SUMMARY REPORT

TABLE 125

LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

OCT 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SUCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SEECHI)	(DEG F)
1			10	5	1			751		34.4	.0	5.0	63.0
2			10	10	1			756		25.6	.0	5.0	63.0
3			6	11	2	2		935		23.8	.0	5.0	63.0
4			9	9				882		15.6	.0	5.0	63.0
5			11	8				768		18.9	.0	5.0	63.0
6			12	14				902		24.8	.0	5.0	63.0
7			0	10		1		798		23.3	.0	5.0	64.0
8			7	10				769		16.1	.0	5.0	63.0
9			5	13				797		23.7	.0	5.0	63.0
10			0	7				753		27.1	.0	4.8	63.0
11			7	7				600		17.7	.0	4.6	63.0
12			4	6				391		23.2	.0	4.5	62.0
13			6	9				560		20.3	.0	4.6	62.0
14			6	4				270		24.5	.0	4.6	62.0
15			3	5				386		22.7	.0	4.6	62.0
16			5	2				404		30.8	.0	4.6	62.0
17			4	3				462		23.9	.0	5.0	62.0
18			6	2				545		24.3	.0	5.0	62.0
19			5	5				641		22.7	.0	5.0	61.0
20			5	3				301		26.3	.0	5.0	61.0
21			2	1				233		21.7	.0	5.0	60.0
22			4	6				344		26.0	.0	5.0	59.0
23			1	6		1		213		32.8	.0	5.0	59.0
24			6	2				259		27.9	.0	5.0	58.0
25			2	7				365		20.4	.0	5.0	58.0
26			3	5				207		24.0	.0	5.0	57.0
27				6				181		29.6	.0	5.0	57.0
28			1	2				226		24.1	.0	5.0	56.0
29			6	2				404		25.3	.0	5.0	57.0
30			2	2				206		21.9	.0	5.0	57.0
31			5	2				146		21.3	.0	5.0	57.0
TOTALS			159	184	4	4		15455					
AVERAGES			5	6	1	1		499		24.0	.0		

TABLE 126

MONTHLY FISH PASSAGE SUMMARY REPORT — TABLE 126 — LOWER GRANITE PROJECT

U.S. ARMY ENGINEER DISTRICT, PORTLAND — NOV 1980

	FISH COUNTS									RIVER CONDITIONS			
	CHINOOK ADULTS			CHINOOK	COHO	COHO				DISCHARGE	SPILL	TURBIDITY	WATER TEMP
DATE	SPRING	SUMMER	FALL	JACKS	ADULTS	JACKS	SOCKEYE	STEELHEAD	SHAD	(KCFS)	(KCFS)	(SECCHI)	(DEG F)
1			2	2				130		16.2	.0	5.0	57.0
2			4					162		16.7	.0	5.0	56.0
3				1				73		27.3	.0	5.0	55.0
4			4					40		28.1	.0	5.0	55.0
5			2	1				92		23.0	.0	5.0	55.0
6								92		26.2	.0	5.0	55.0
7								49		27.7	.0	5.0	55.0
8			1	1				182		35.6	.0	5.0	54.0
9								224		41.5	.0	5.0	54.0
10				1				70		41.9	.0	5.0	54.0
11								151		34.6	.0	5.0	53.0
12								50		43.3	.0	5.0	53.0
13			1	1				89		42.0	.0	5.0	53.0
14								70		35.0	.0	5.0	53.0
15								36		32.0	.0	5.0	52.0
16			2					82		34.4	.0	5.0	51.0
17				4				67		27.9	.0	5.0	50.0
18								36		31.9	.0	5.0	50.0
19								55		30.6	.0	5.0	50.0
20								34		31.9	.0	5.0	49.0
21								31		38.6	.0	5.0	49.0
22								26		42.6	.0	5.0	49.0
23								13		33.3	.0	5.0	49.0
24								19		30.7	.0	5.0	48.0
25								28		36.7	.0	5.0	48.0
26			1					22		33.0	.0	5.0	48.0
27								23		34.3	.0	5.0	48.0
28								24		32.8	.0	5.0	48.0
29								29		31.1	.0	5.0	47.0
30								54		31.8	.0	5.0	46.0
TOTALS			17	11				2053					
AVERAGES			2	2				68		32.4	.0		

TABLE 127
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER GRANITE - 1980

DATE	DECEMBER		
	WATER TEMP.	DISCHARGE	TURBIDITY
1	46	31,100	5.0
2	46	35,300	5.0
3	47	37,300	5.0
4	46	31,000	5.0
5	46	40,700	5.0
6	45	41,000	5.0
7	45	40,000	5.0
8	45	41,500	5.0
9	45	34,800	5.0
10	45	39,600	5.0
11	45	38,100	5.0
12	44	37,800	5.0
13	44	35,500	5.0
14	43	39,800	5.0
15	42	33,600	5.0
16	42	38,100	5.0
17	42	40,000	5.0
18	42	36,300	5.0
19	42	35,200	5.0
20	42	33,000	5.0
21	42	35,900	5.0
22	42	39,000	5.0
23	42	42,300	5.0
24	42	34,800	5.0
25	42	50,000	5.0
26	42	85,500	3.7
27	42	75,800	3.2
28	42	69,700	1.2
29	42	66,300	1.2
30	42	63,100	1.2

TABLE 128

PEAK DAYS OF MIGRATION

LOWER GRANITE DAM - 1975-1980

	Spring Chinook		Summer Chinook		Fall Chinook		Steelhead		Sockeye		Coho	
Year	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish	Date	Number of Fish
1975	May 27	1,894	Jun 25	477	Sep 26	135	Sep 25	534	Jul 17	26	Sep 16	58
1976	May 24	972	Jun 26	716	Sep 22	75	Sep 29	740	Jul 14	37	Sep 28	61
1977	May 7	2,457	Jul 4	631	Sep 21	107	Oct 9	2,570	Jul 2	32	Sep 21	47
1978	May 13	2,573	Jul 6	933	Sep 20	58	Sep 23	953	Jul 9	21	Sep 22	12
1979	Jun 10	371	Jun 22	275	Sep 22	69	Sep 20	610	Jul 19	2	Sep 24	17
1980	May 17	449	Jul 1	186	Oct 6	26	Sep 3	935	Jul 17	9	Sep 21	7

TABLE 129

MONTHLY TOTALS OF CHINOOK COUNTED OVER LOWER GRANITE DAM

1975 - 1980

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1975				1	11,693	8,722	4,854	1,183	1,462	474	71		28,460
1976				149	14,358	10,438	5,074	428	605	535	80		31,667
1977				12,824	22,892	6,718	4,622	203	961	776	125	2	49,123
1978				3,329	29,983	11,464	6,976	1,234	698	519	42	1	54,246
1979				234	4,461	4,455	1,794	256	1,003	302	43		12,548
1980				328	5,227	2,558	1,916	241	345	343	28		10,986
Total				16,865	88,614	44,355	25,236	3,545	5,074	2,949	389	3	187,030
6-Year Average				2,811	14,769	7,392	4,206	590	846	492	65		31,172

TABLE 130

MONTHLY COUNT OF STEELHEAD TROUT OVER LOWER GRANITE DAM

1975 - 1980

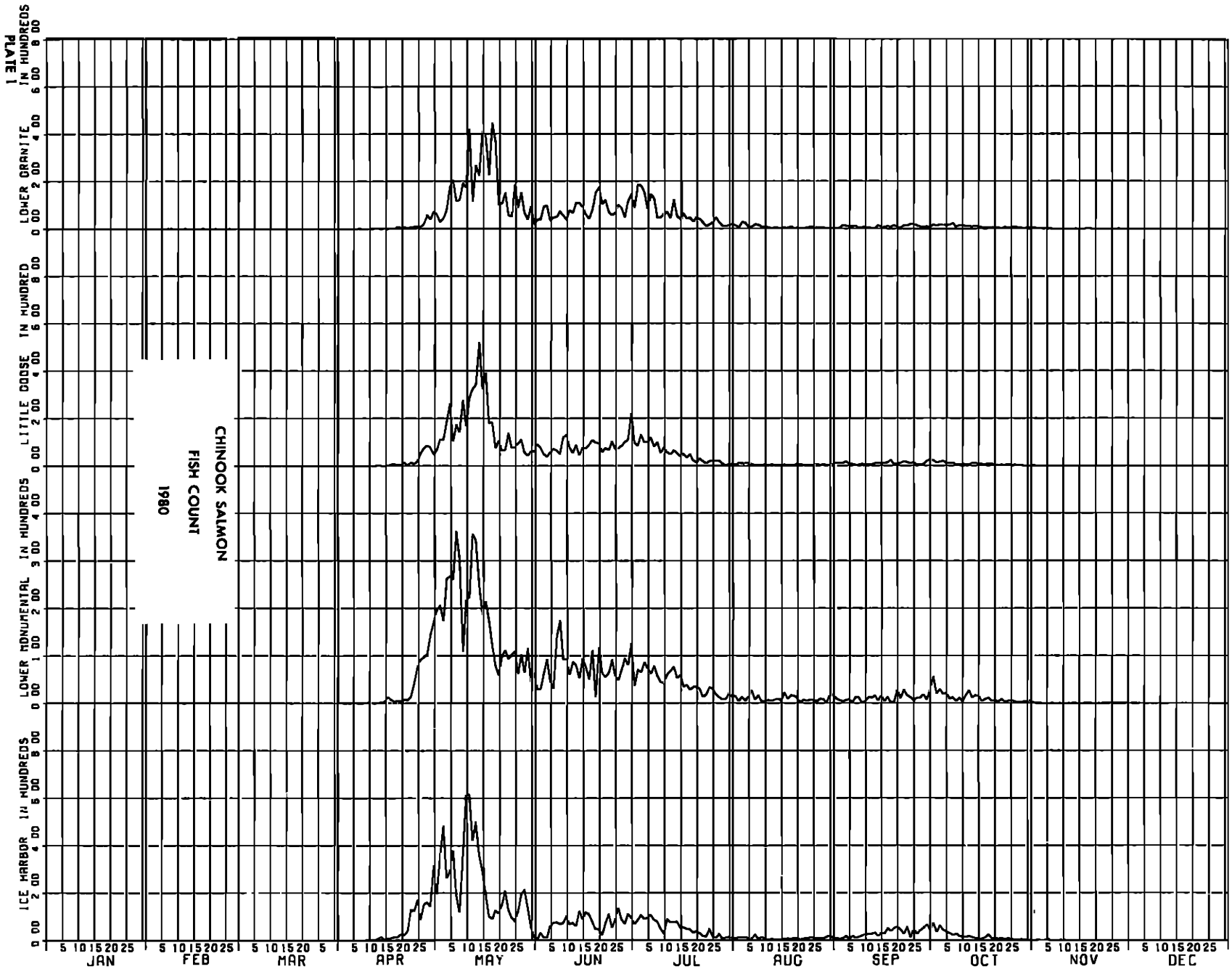
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1975				1,724	1,065	104	102	3,337	6,396	3,584	703	296	17,311
1976	173	21	181	1,120	575	120	527	3,816	8,720	6,837	860	67	23,017
1977		9	142	1,235	229	59	1,538	2,652	16,296	27,492	2,950	435	53,037
1978	354	716	2,276	2,009	252	9	478	2,721	10,829	9,528	788	108	30,068
1979	12	44	802	962	192	16	1,197	2,602	5,143	11,323	2,487	266	25,046
1980			1,149	3,403	1,172	36	517	3,378	13,291	15,455	2,053		40,454
Total	539	790	4,550	10,453	3,485	344	4,359	18,506	60,675	74,219	9,841	1,172	188,933
6-Year Average				1,742	581	57	726	3,084	10,112	12,370	1,640	*234	31,489

* Did not count in 1980. Average is for five years

TABLE 131
FISH FACILITY OPERATION & MAINTENANCE COSTS - 1980

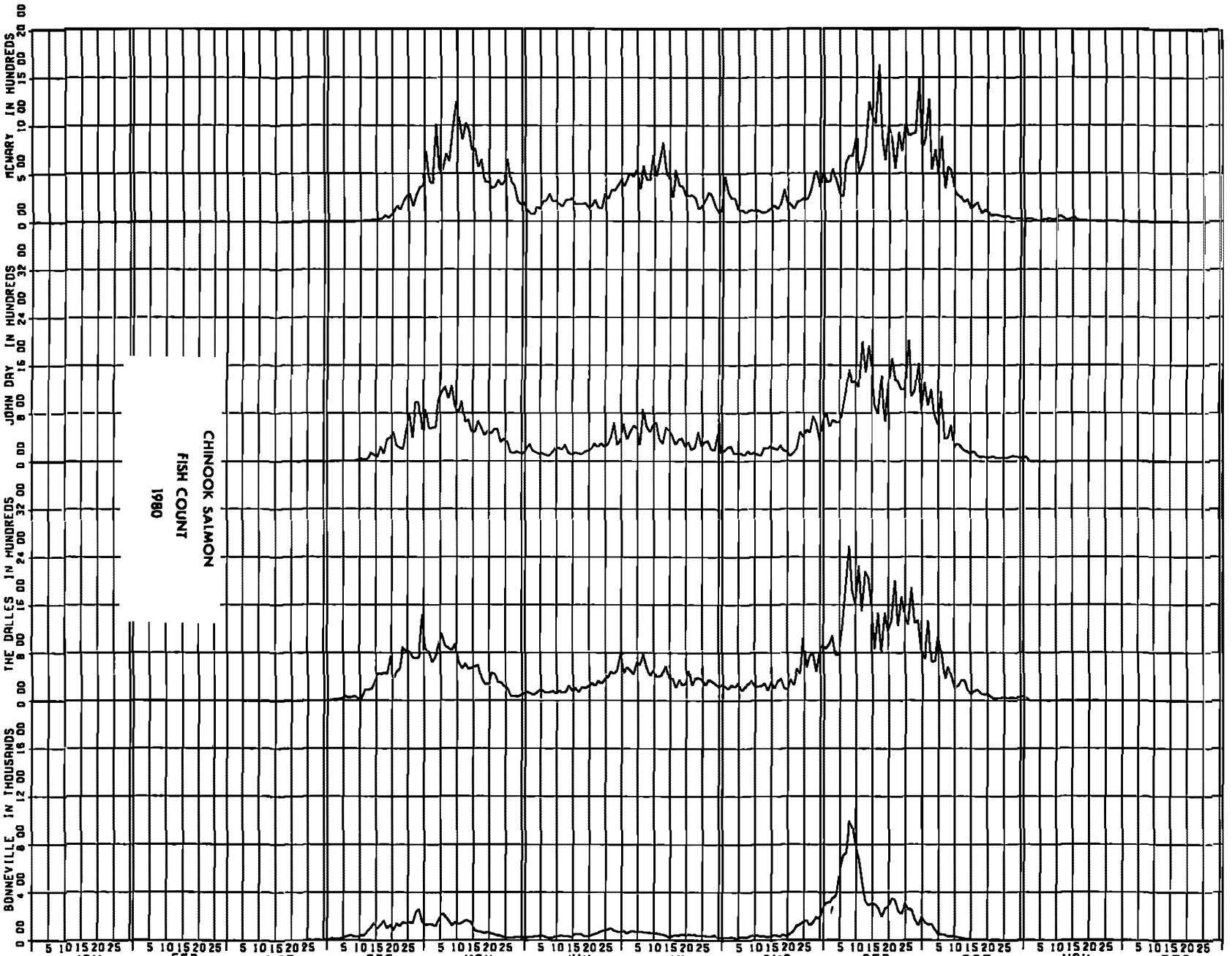
Project	Routine Operations	Fish Counting	Maintenance	Total Operation and Maintenance
Bonneville	$ 46,656	$ 55,832	$ 128,917	$ 231,405
The Dalles	38,946	40,856	55,529	135,331
John Day	43,041	47,499	121,379	211,919
McNary	51,052	20,975	19,807	91,834
Ice Harbor	32,977	19,154	48,685	100,816
Lower Monumental	34,435	20,563	46,008	101,006
Little Goose	16,028	16,864	47,753	80,645
Lower Granite	15,224	19,147	33,521	67,872

PLATE 1



SNAKE RIVER PROJECTS

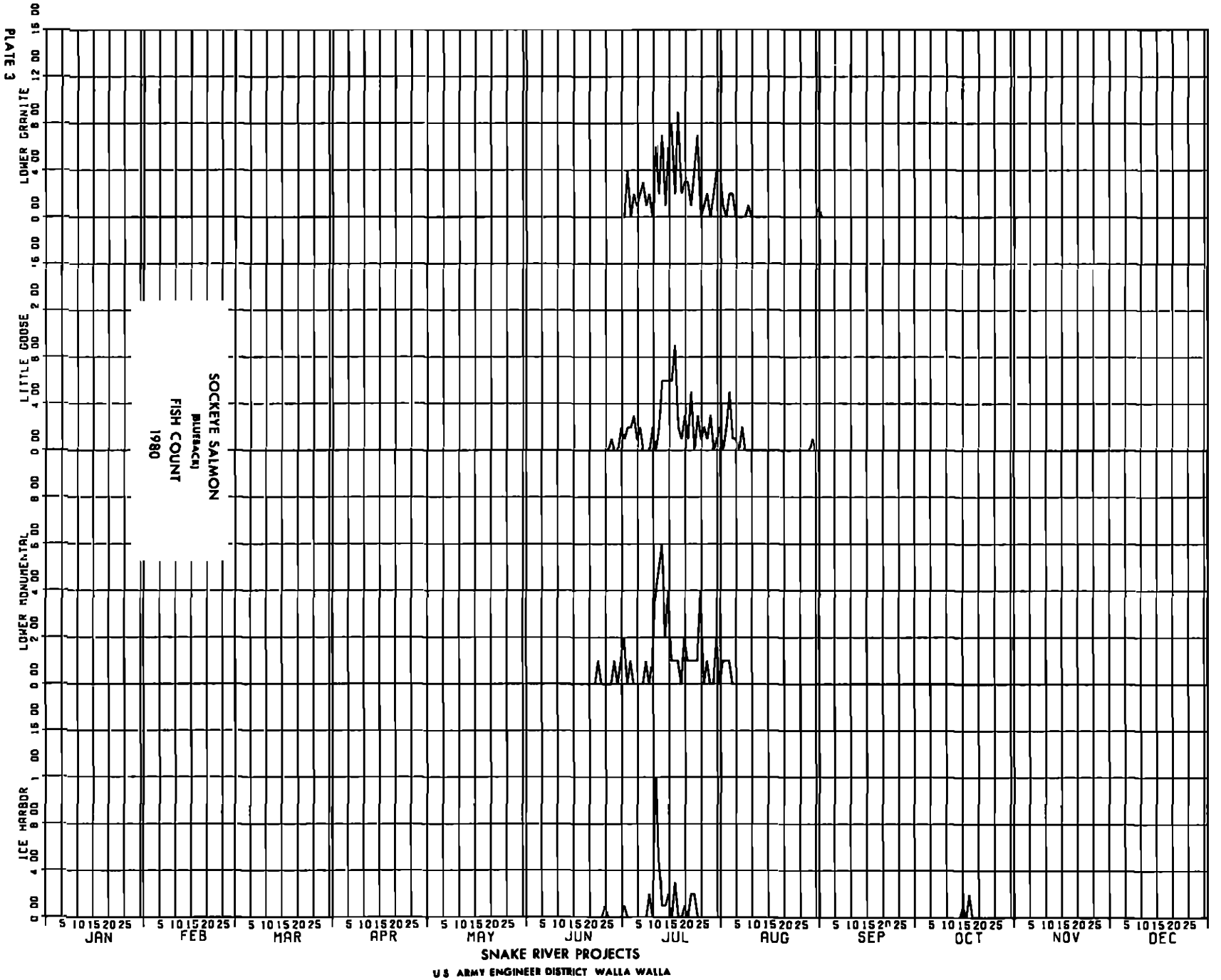
U S ARMY ENGINEER DISTRICT WALLA WALLA



COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT PORTLAND

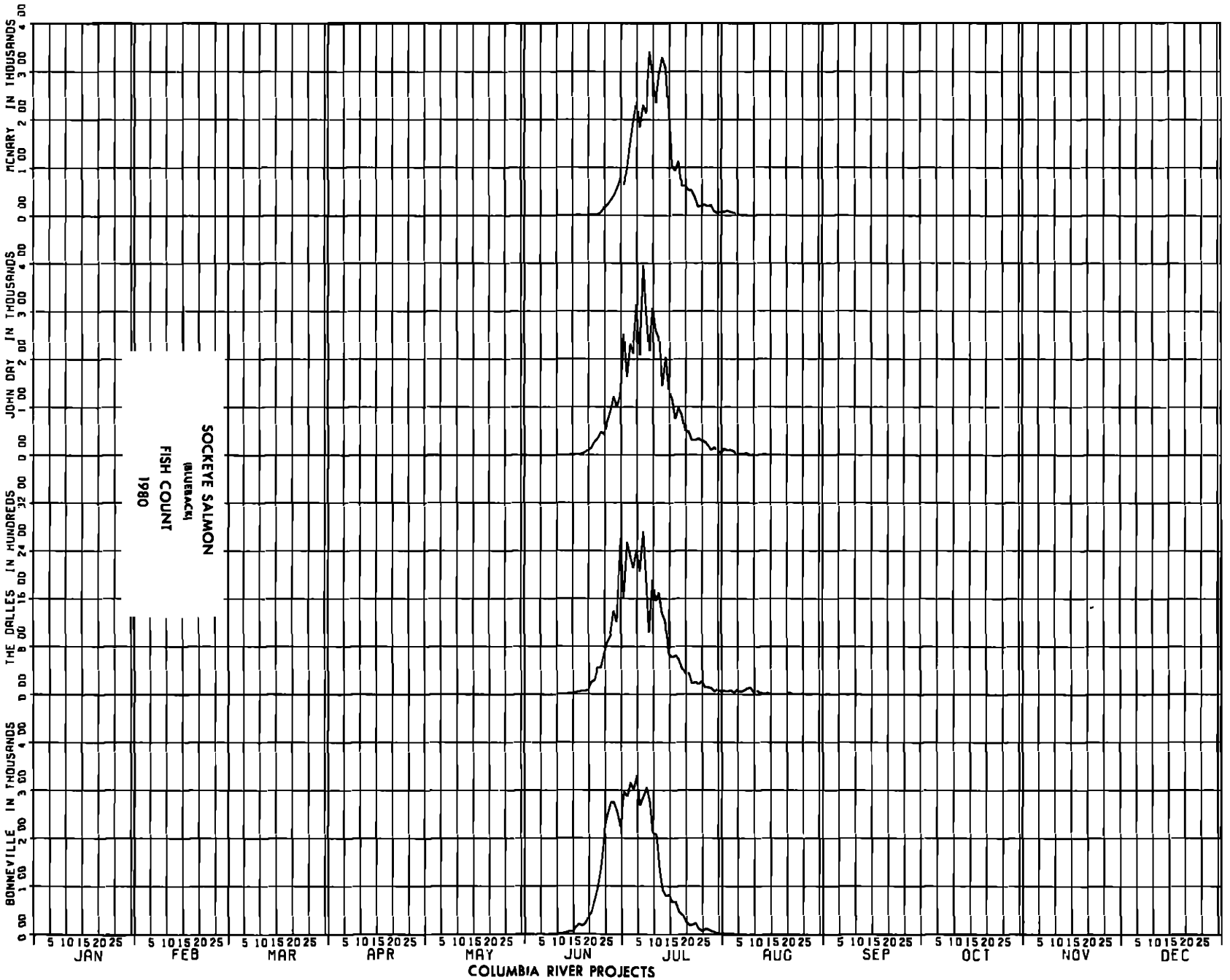
PLATE 2



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT WALLA WALLA

PLATE 3

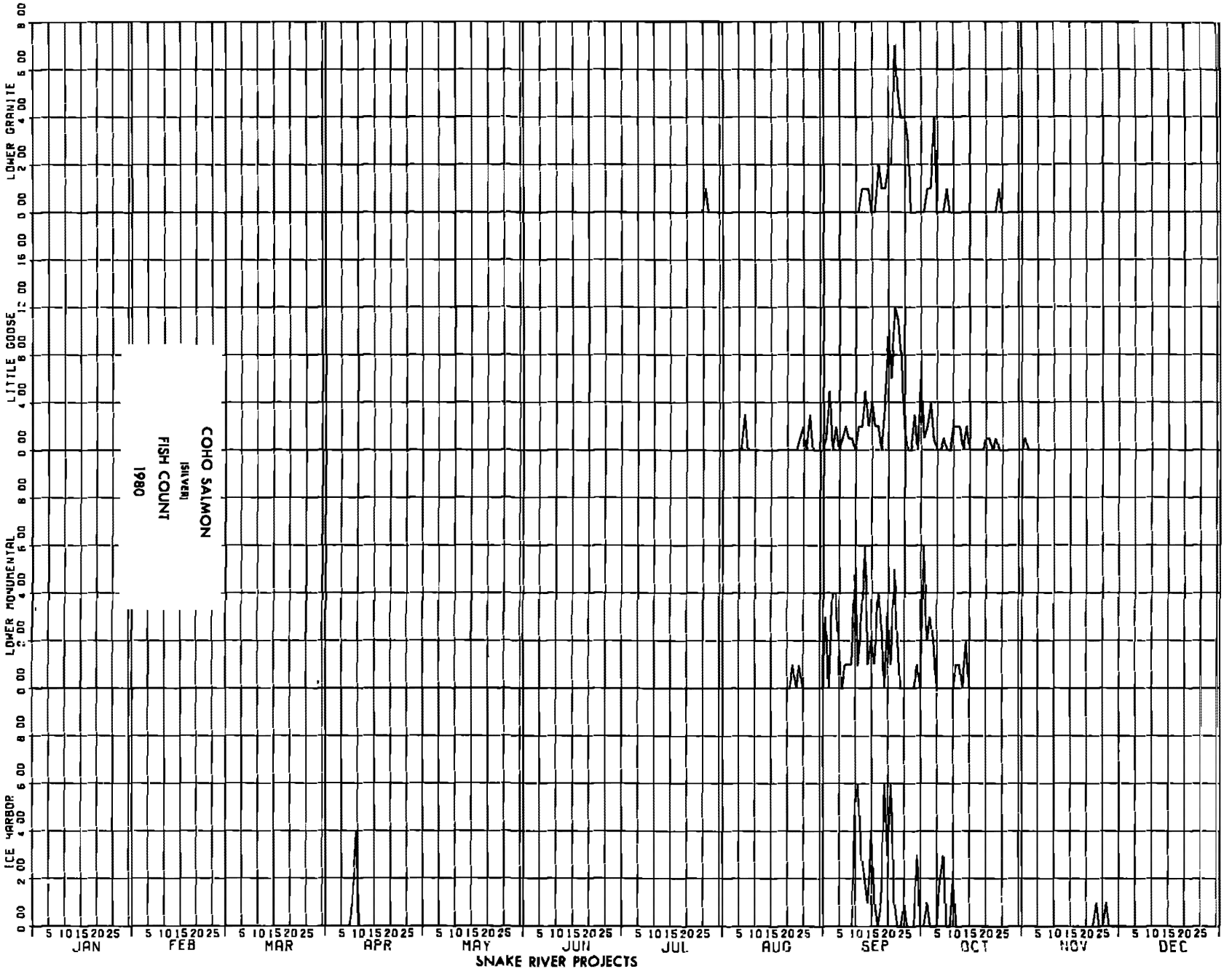


COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT PORTLAND

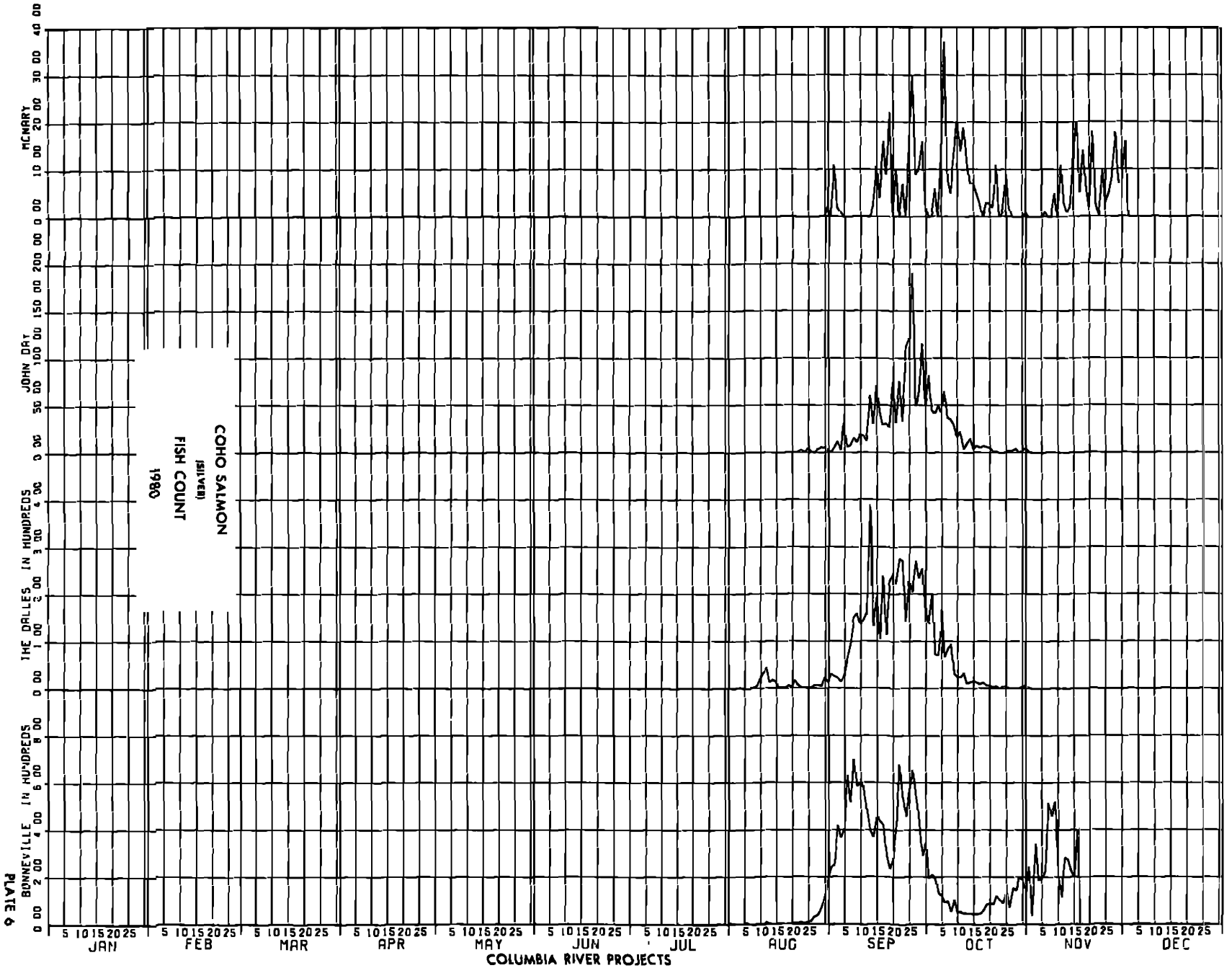
PLATE 4

PLATE 5



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT WALLA WALLA

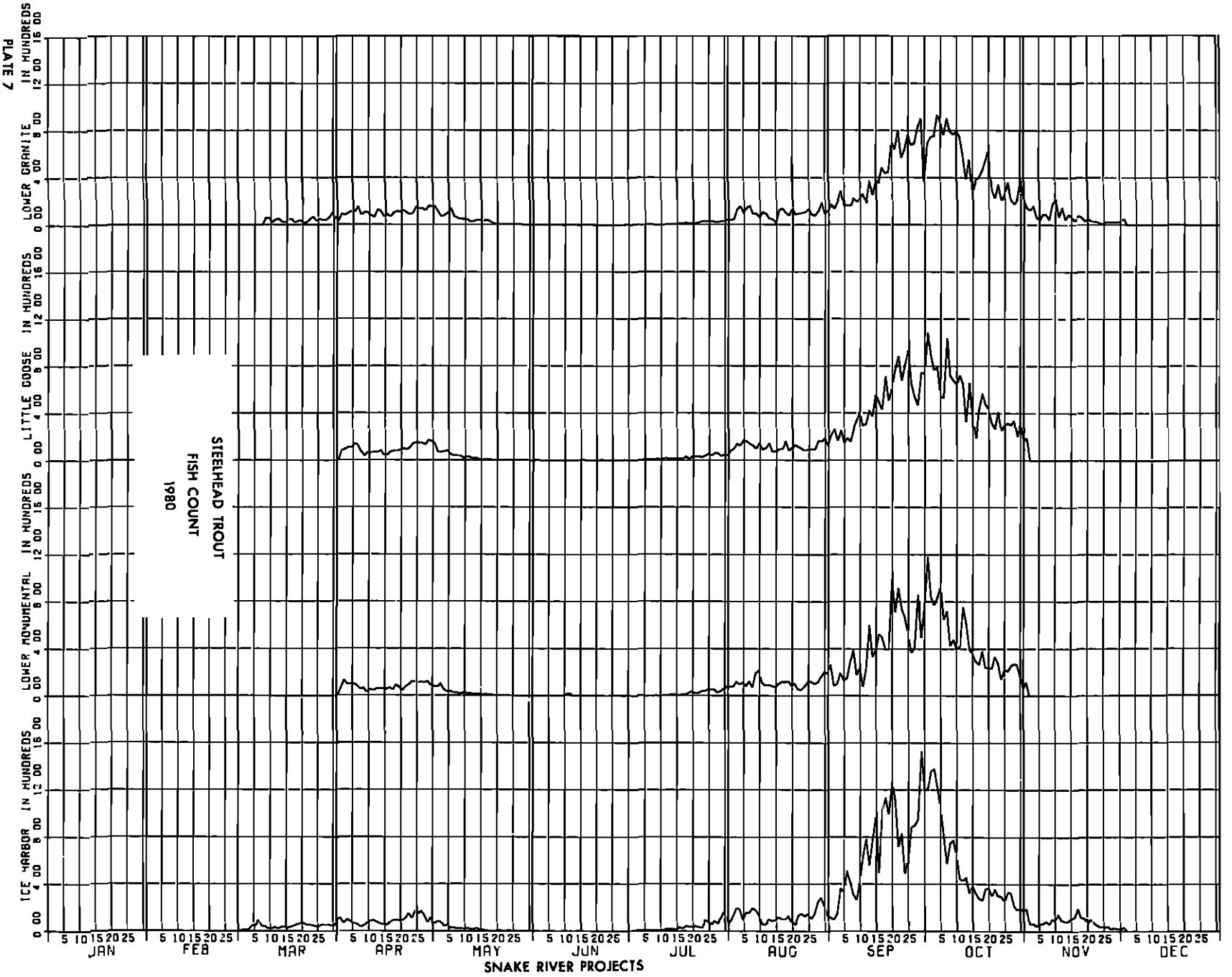


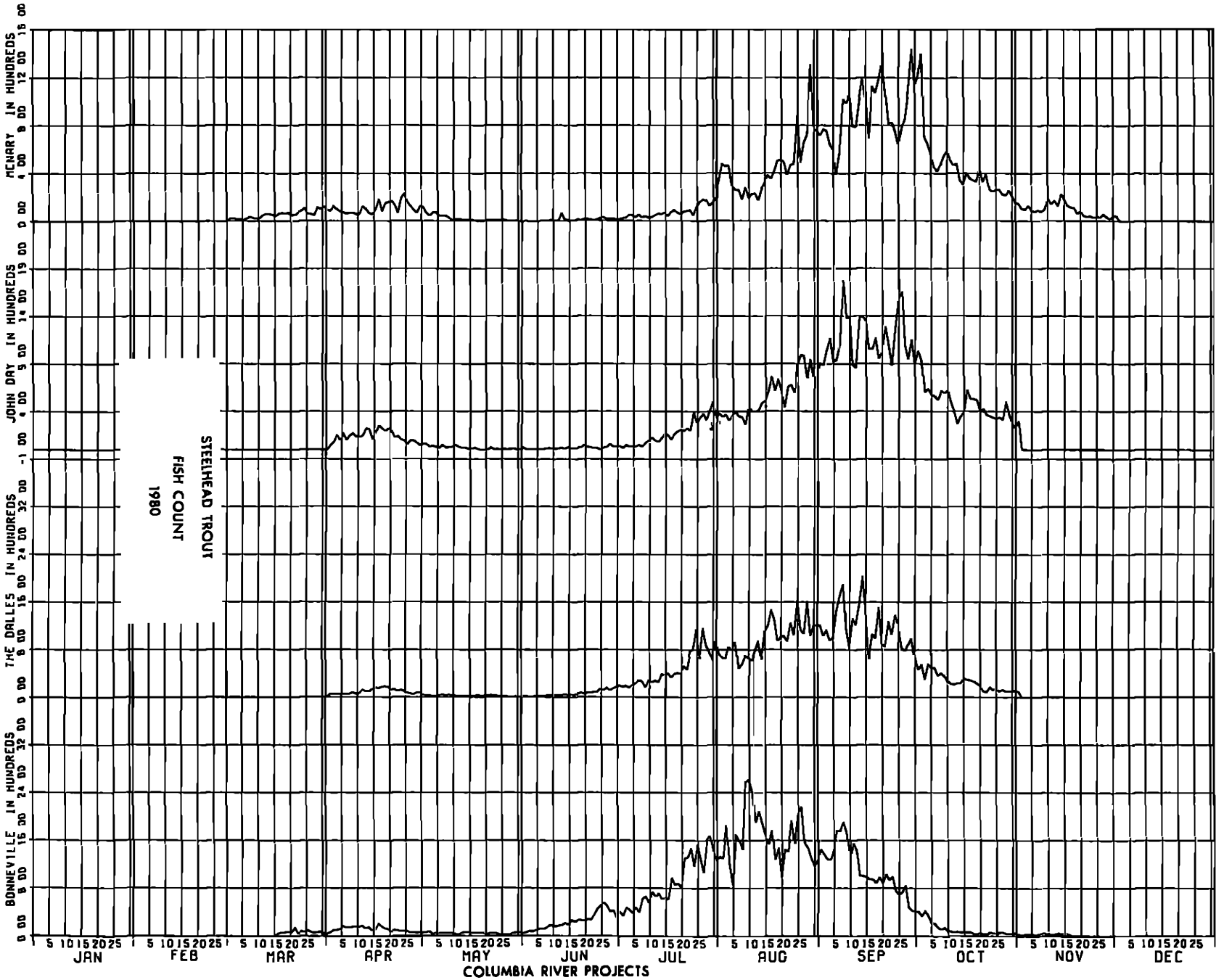
COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT PORTLAND

PLATE 6

PLATE 7


STEELHEAD TROUT
FISH COUNT
1980
ICE HARBOR IN HUNDREDS
LOWER MONUMENTAL IN HUNDREDS
LITTLE GOOSE IN HUNDREDS
LOWER GRANITE IN HUNDREDS
0 00 4 00 8 00 12 00 16 00
5 10 15 20 25
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
SNAKE RIVER PROJECTS
U S ARMY ENGINEER DISTRICT WALLA WALLA



COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT PORTLAND

PLATE 8

NOTE:

The scales for the plate on the preceding pages are of different magnitude. When comparing the runs of fish be sure to note the differences.

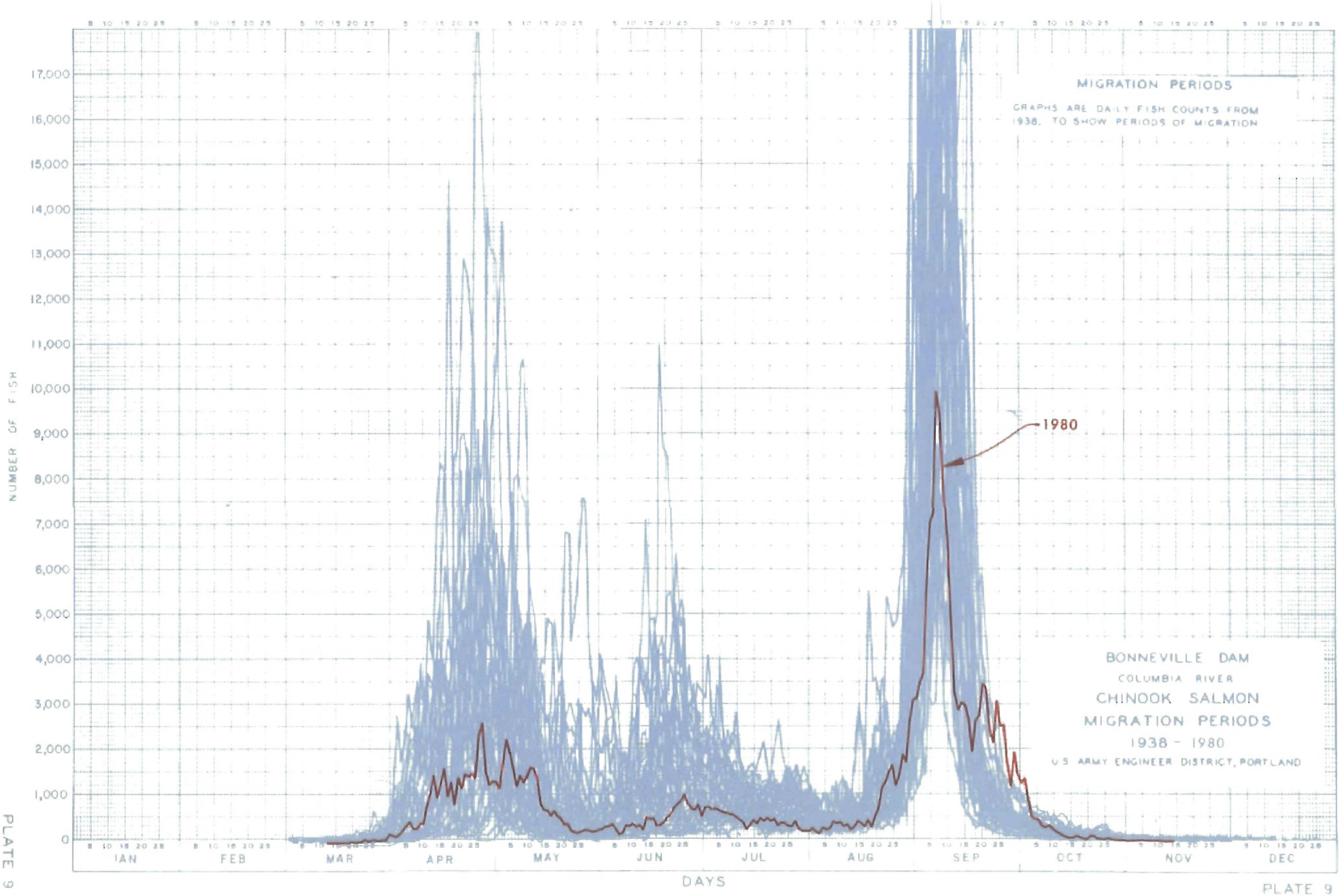


PLATE 9

PLATE 9

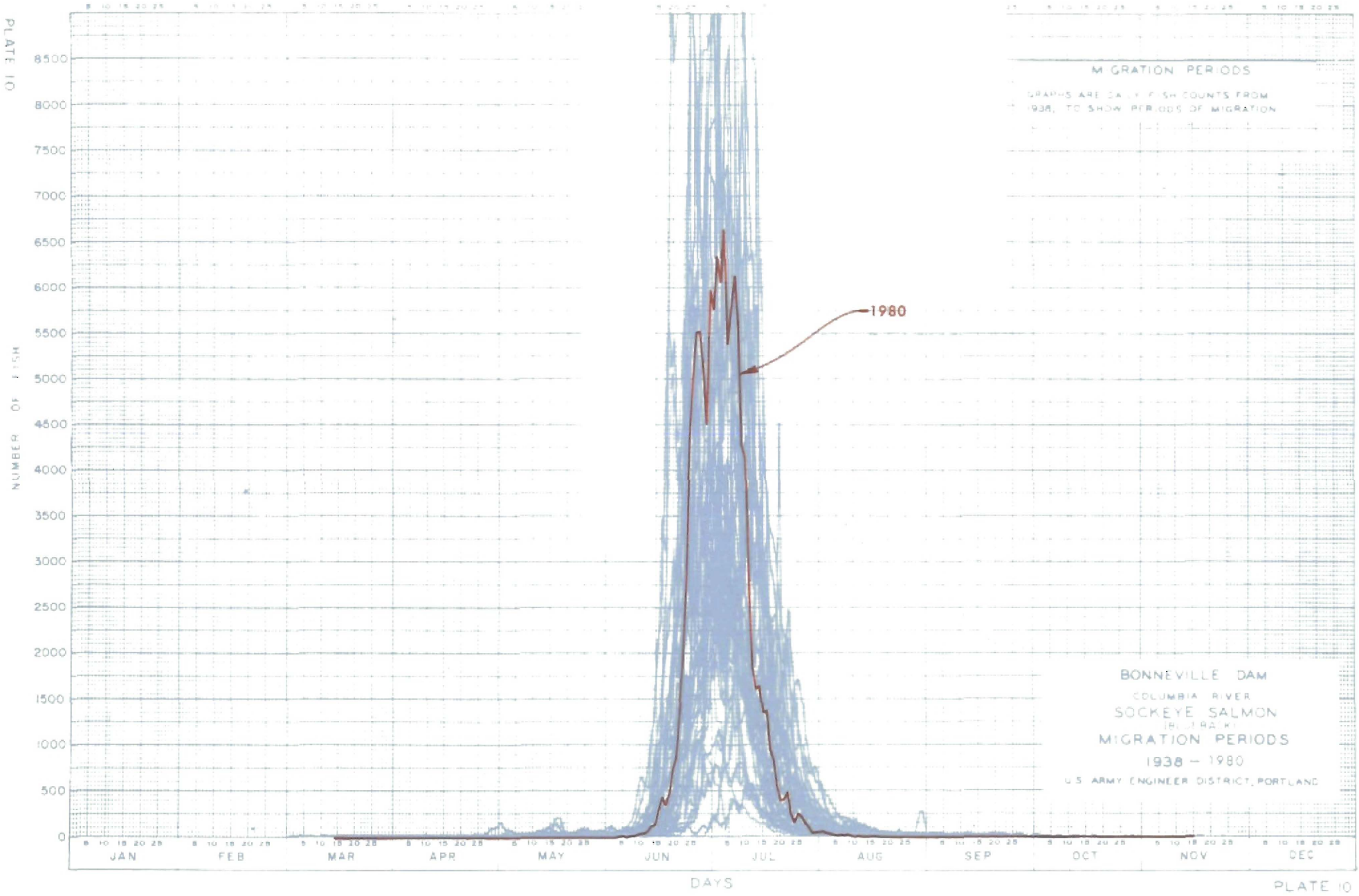

MIGRATION PERIODS
GRAPHS ARE DAILY FISH COUNTS FROM 1938, TO SHOW PERIODS OF MIGRATION
1980
BONNEVILLE DAM
COLUMBIA RIVER
SOCKEYE SALMON
MIGRATION PERIODS
1938 – 1980
U.S. ARMY ENGINEER DISTRICT, PORTLAND
NUMBER OF FISH
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
DAYS

PLATE 10

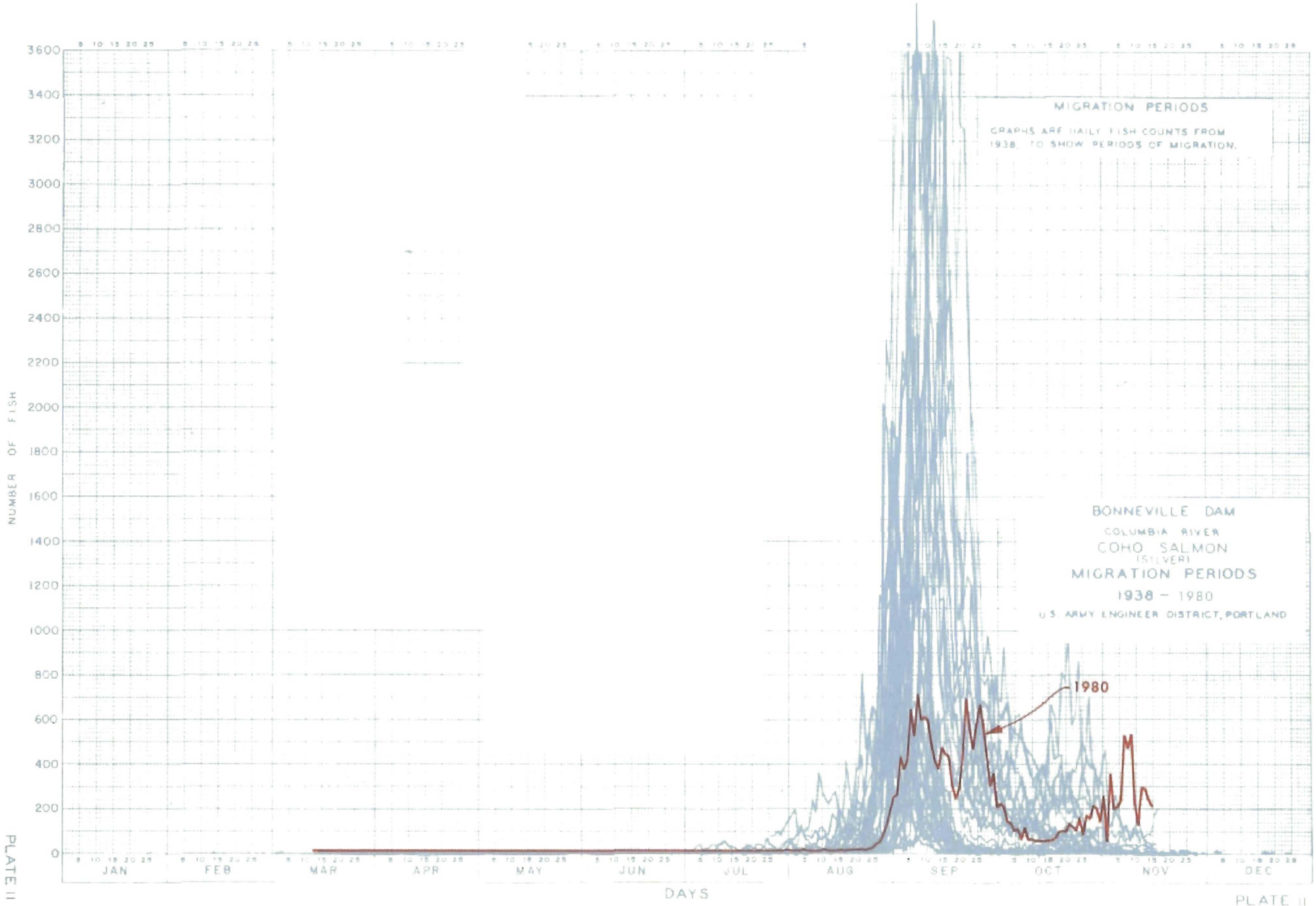


PLATE II

PLATE II

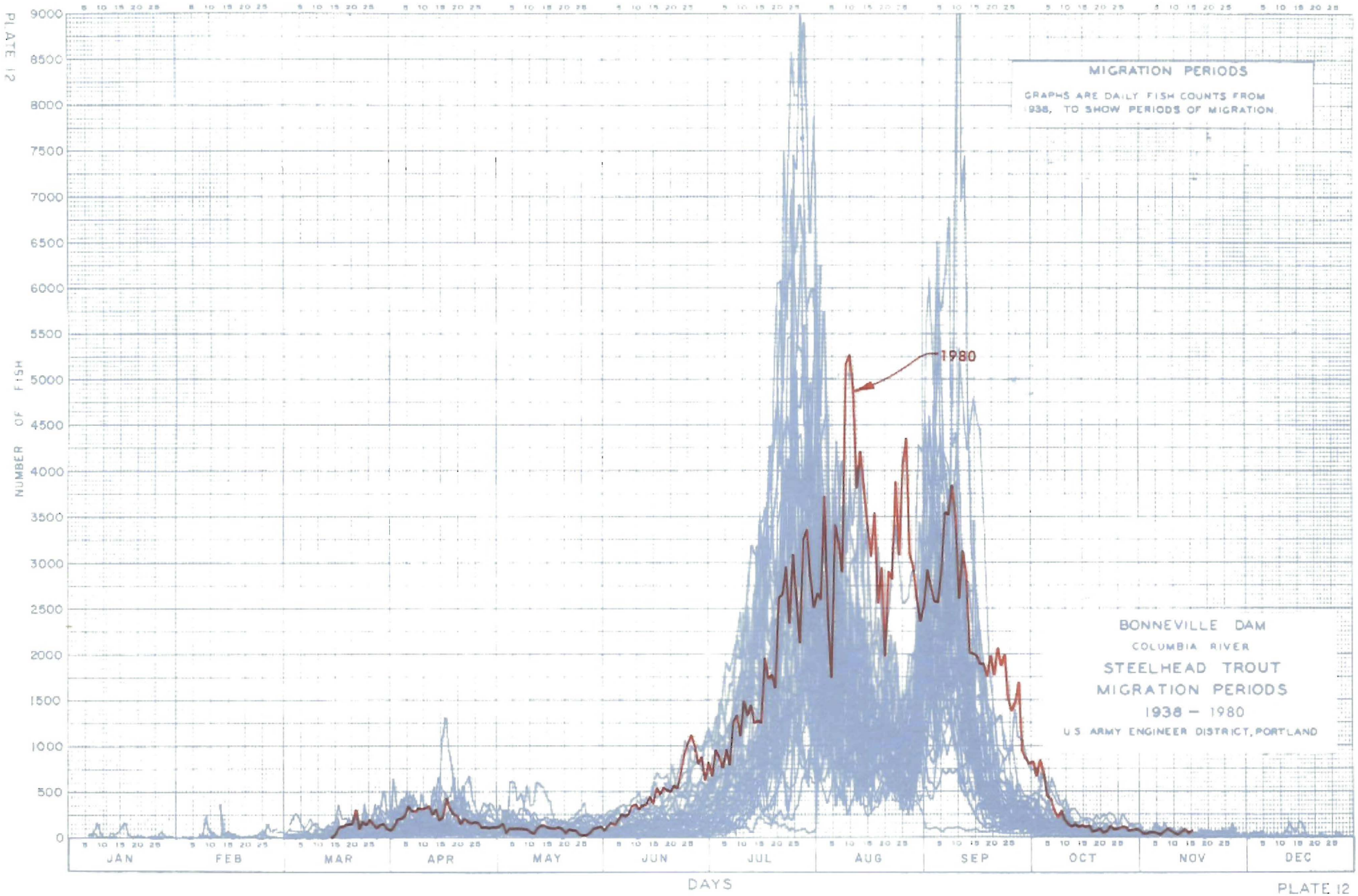

MIGRATION PERIODS
GRAPHS ARE DAILY FISH COUNTS FROM 1938, TO SHOW PERIODS OF MIGRATION
1980
BONNEVILLE DAM
COLUMBIA RIVER
STEELHEAD TROUT
MIGRATION PERIODS
1938 – 1980
U.S. ARMY ENGINEER DISTRICT, PORTLAND
NUMBER OF FISH
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
DAYS

PLATE 12

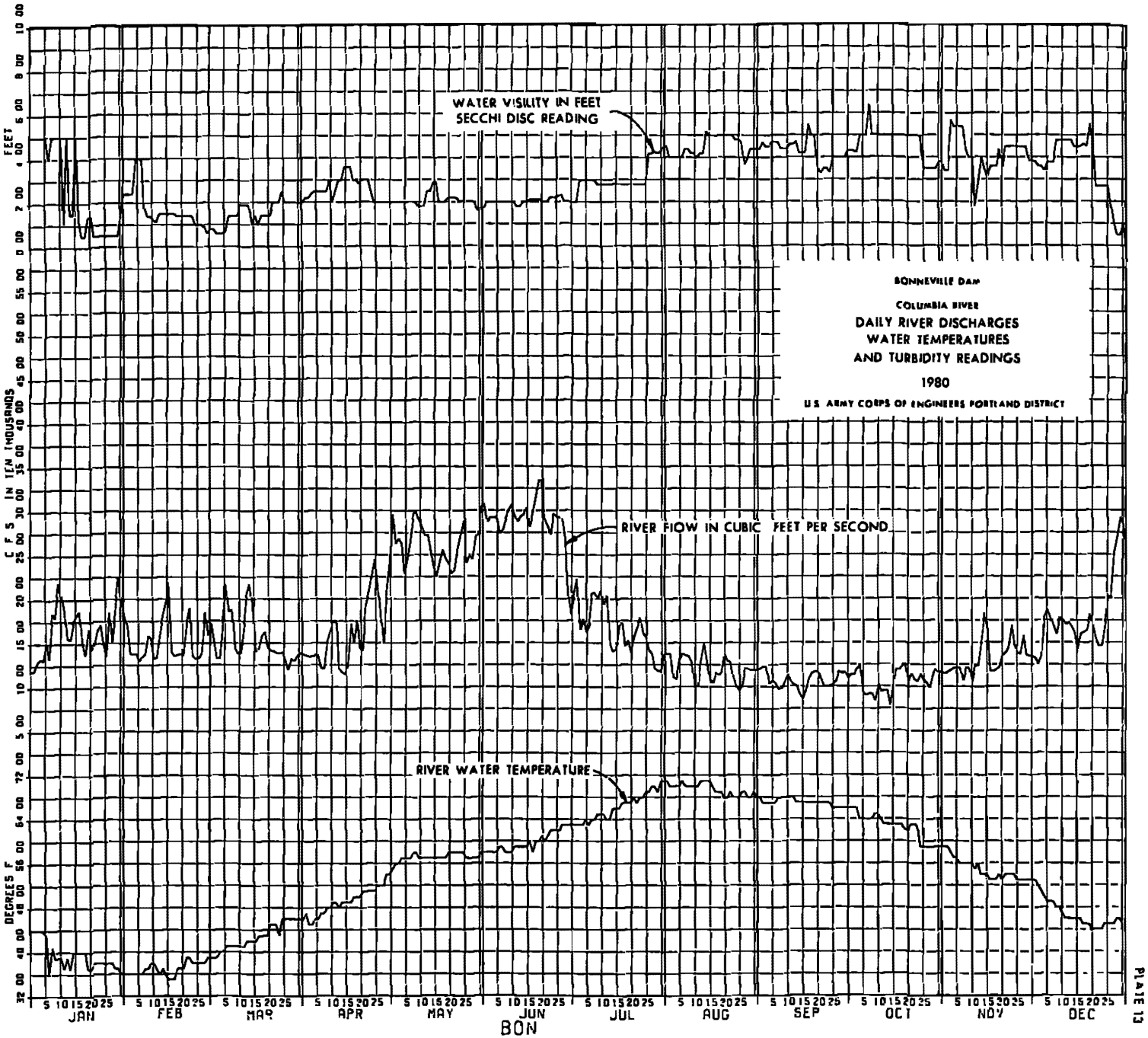

BONNEVILLE DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U.S. ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISILITY IN FEET
SECCHI DISC READING
RIVER FIOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
BON

PLATE 13

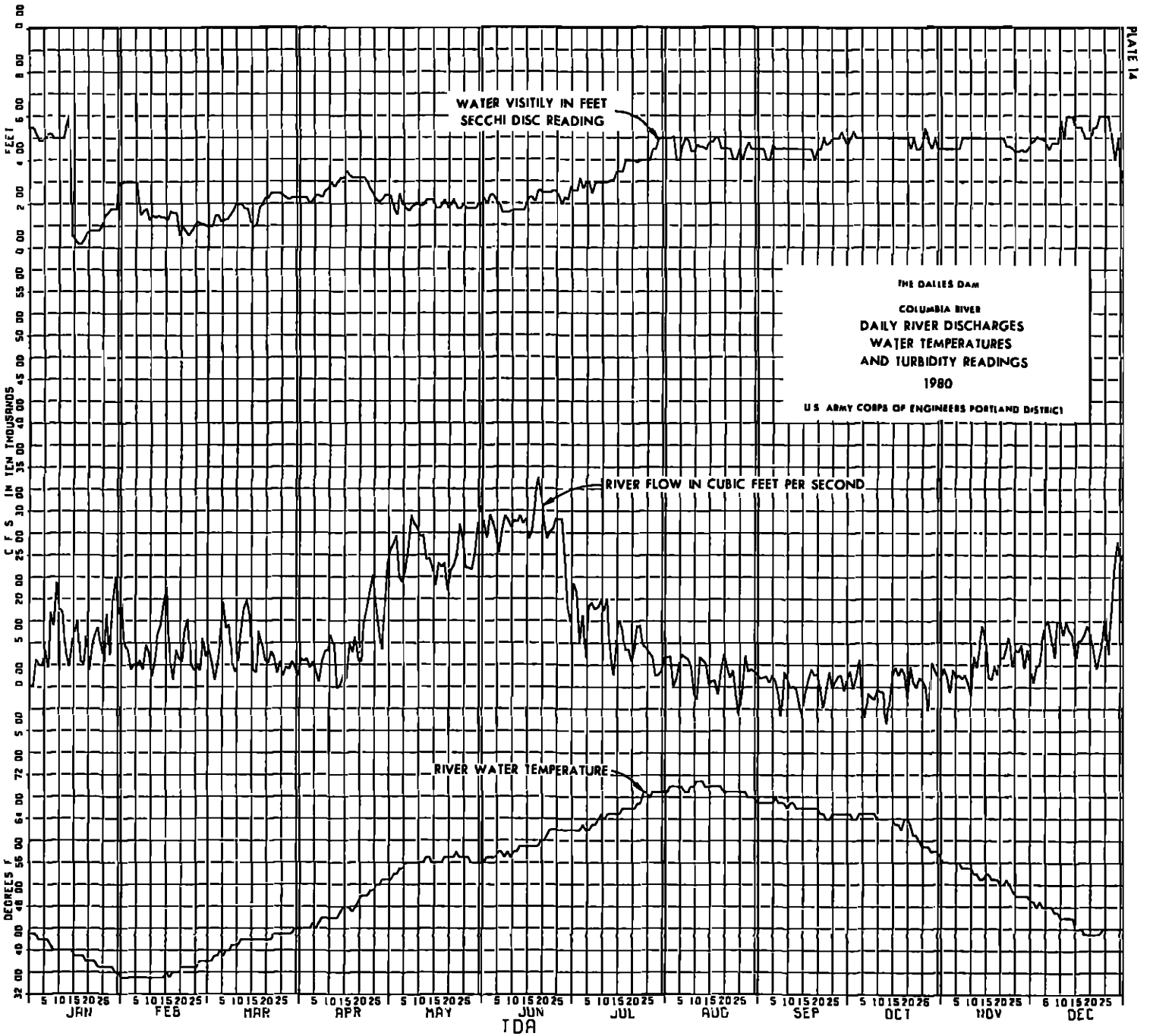


PLATE 14
THE DALLES DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U.S. ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISITILY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
TDA

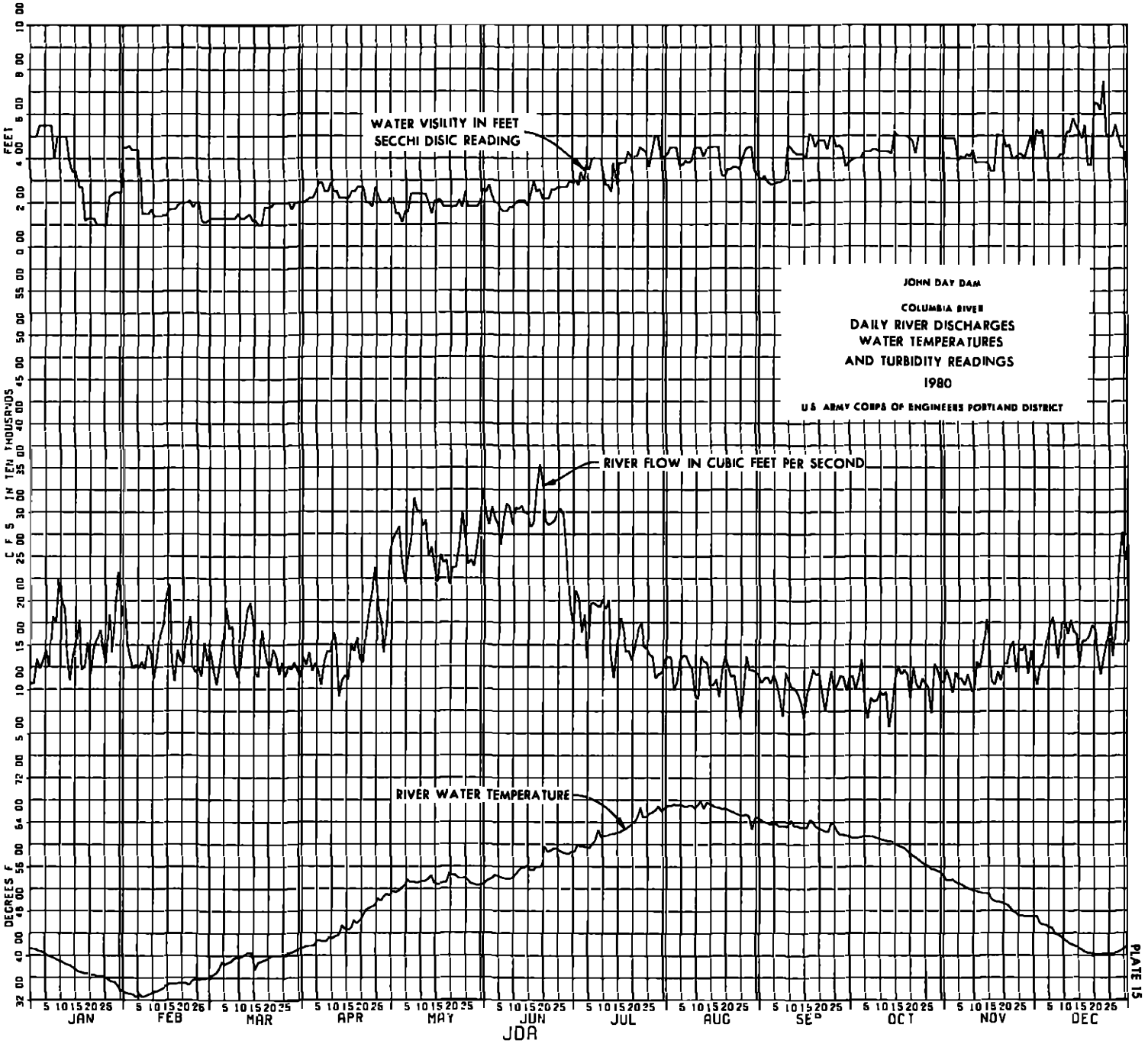

JOHN DAY DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U.S. ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISILITY IN FEET
SECCHI DISIC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JDA

PLATE 15

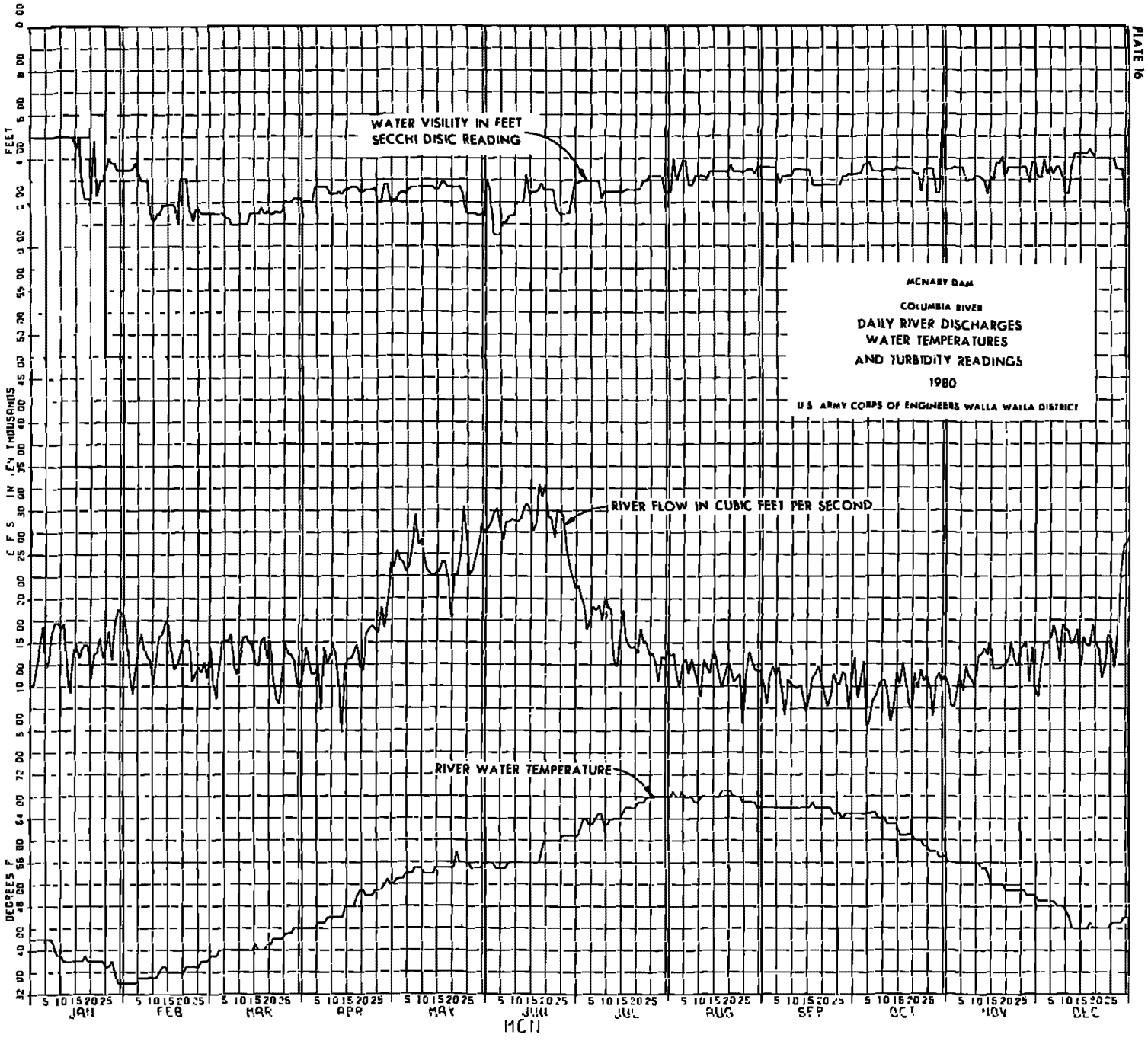


PLATE 16
MCNARY DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U.S. ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISILITY IN FEET
SECCHI DISIC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
MCN

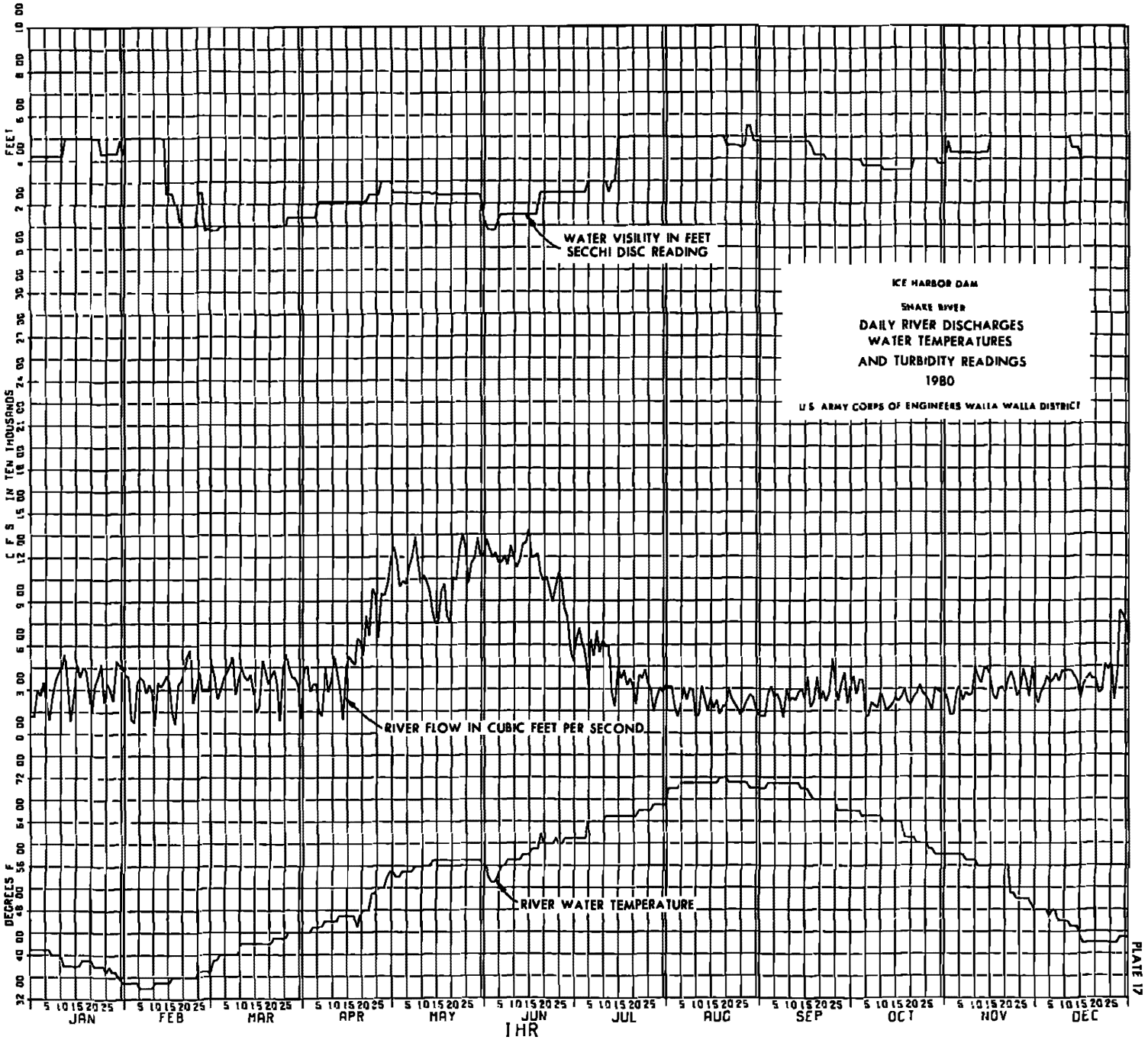

ICE HARBOR DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
THR

PLATE 17

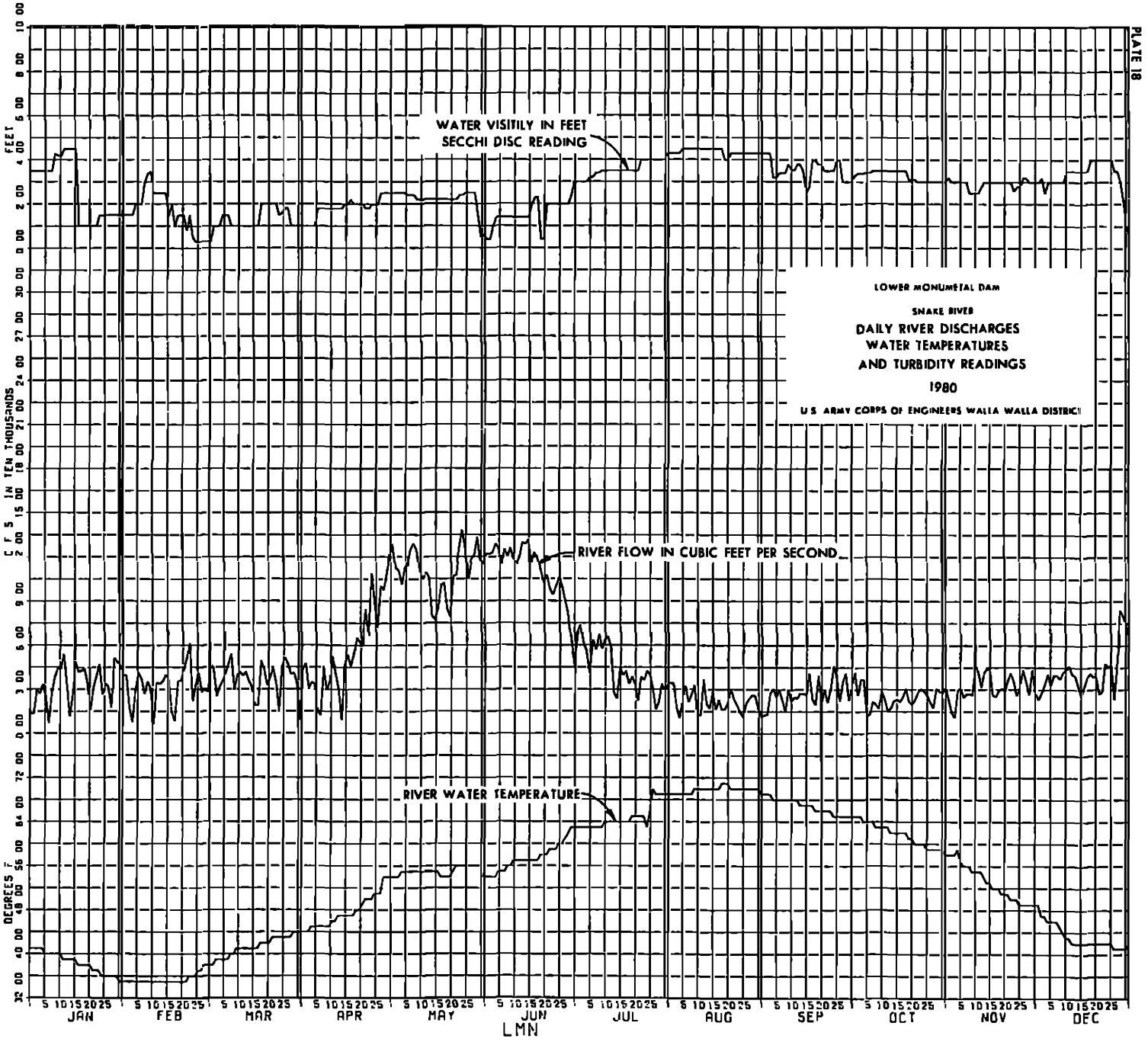


PLATE 18
LOWER MONUMETAL DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U.S. ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISITILY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LMN

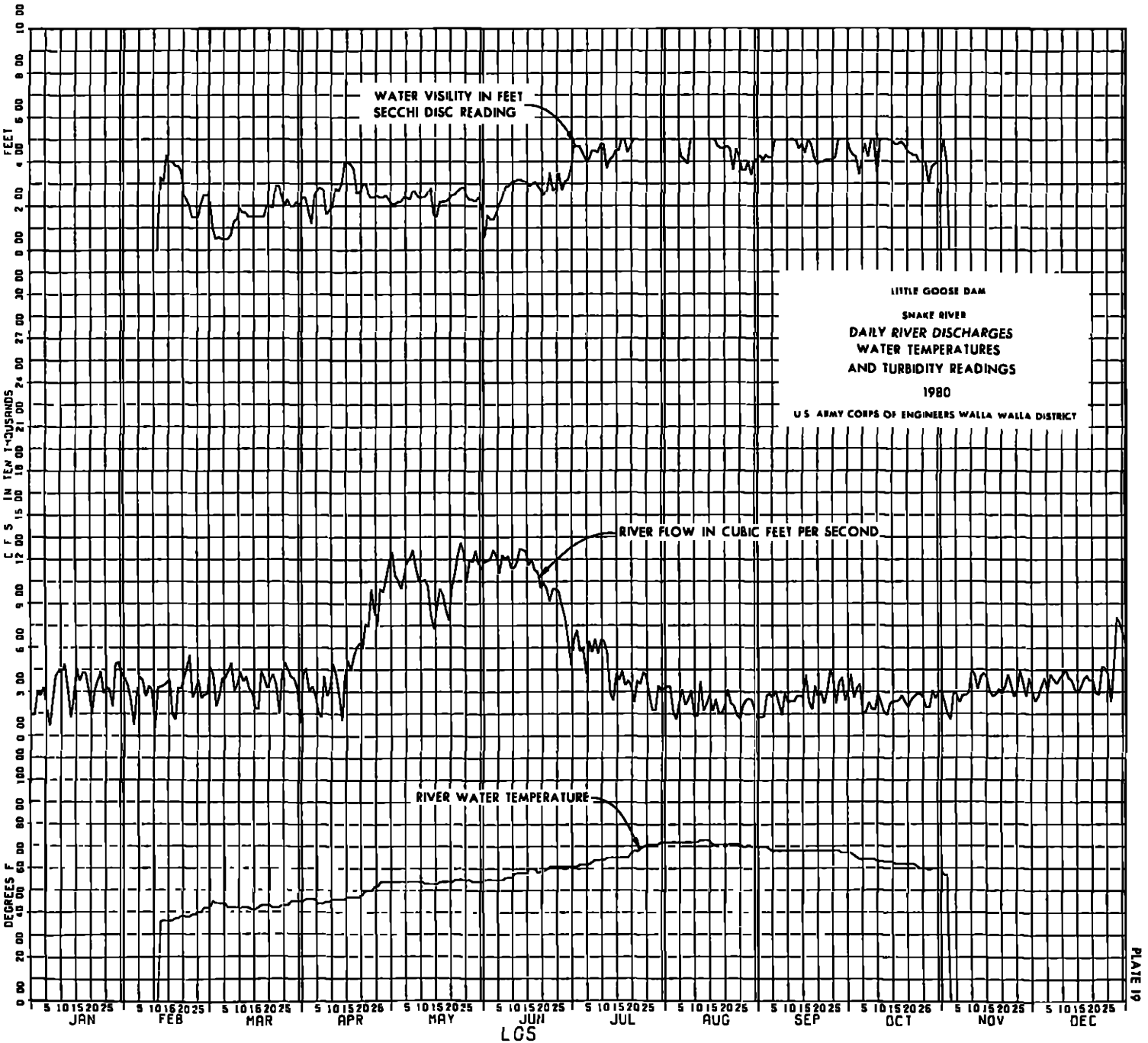

LITTLE GOOSE DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LGS

PLATE 19

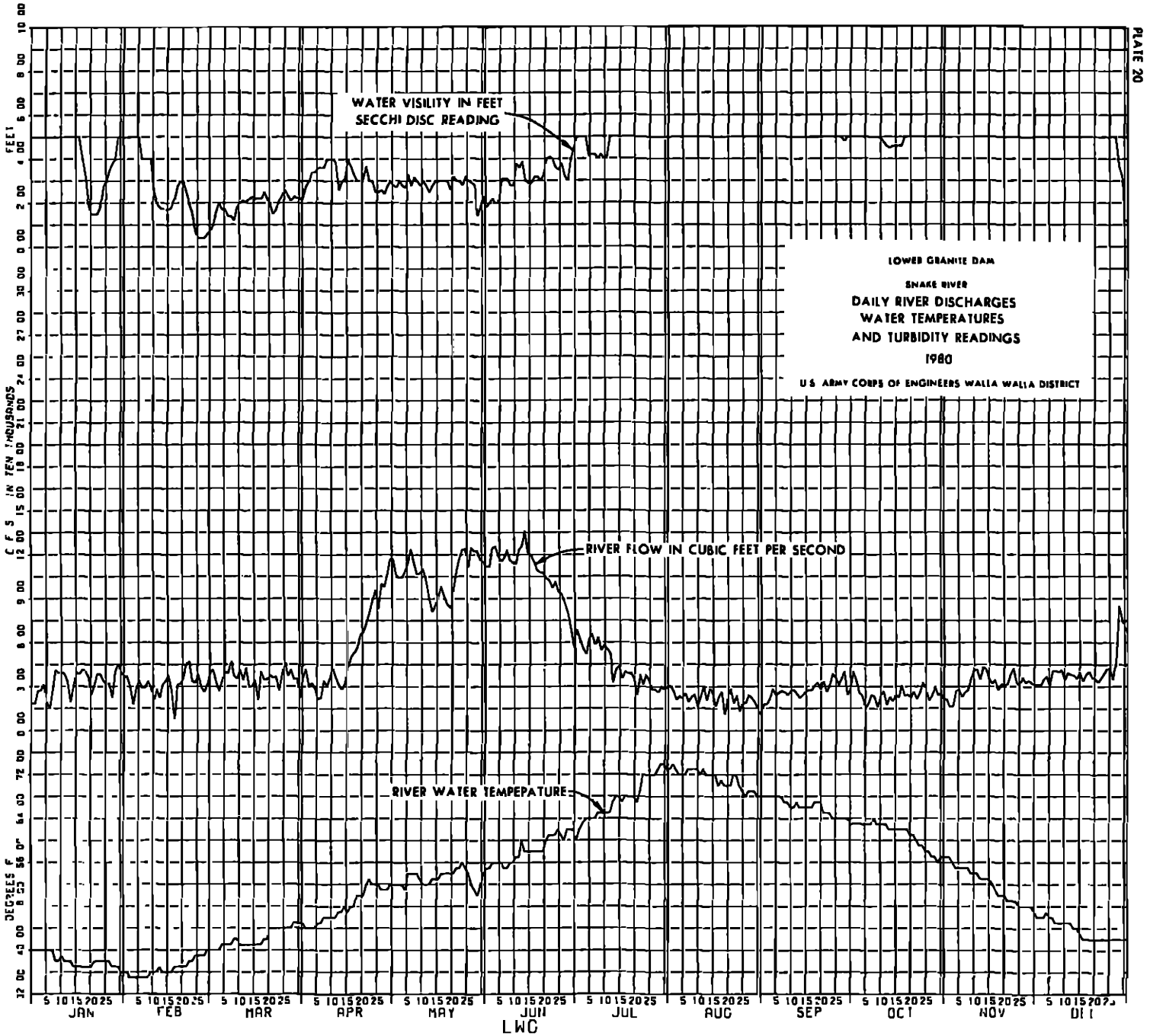


PLATE 20
LOWER GRANITE DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1980
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPEPATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LWC

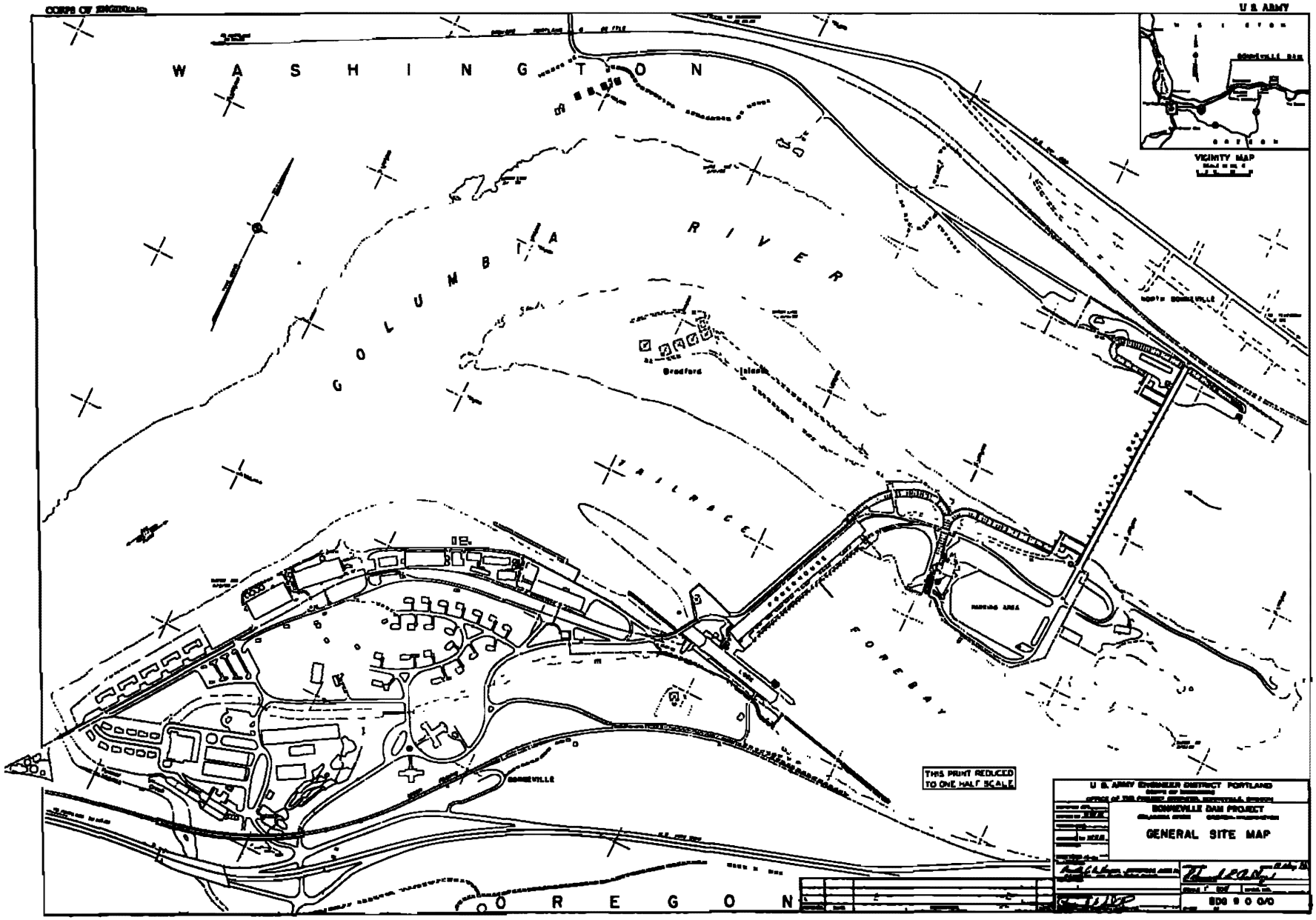
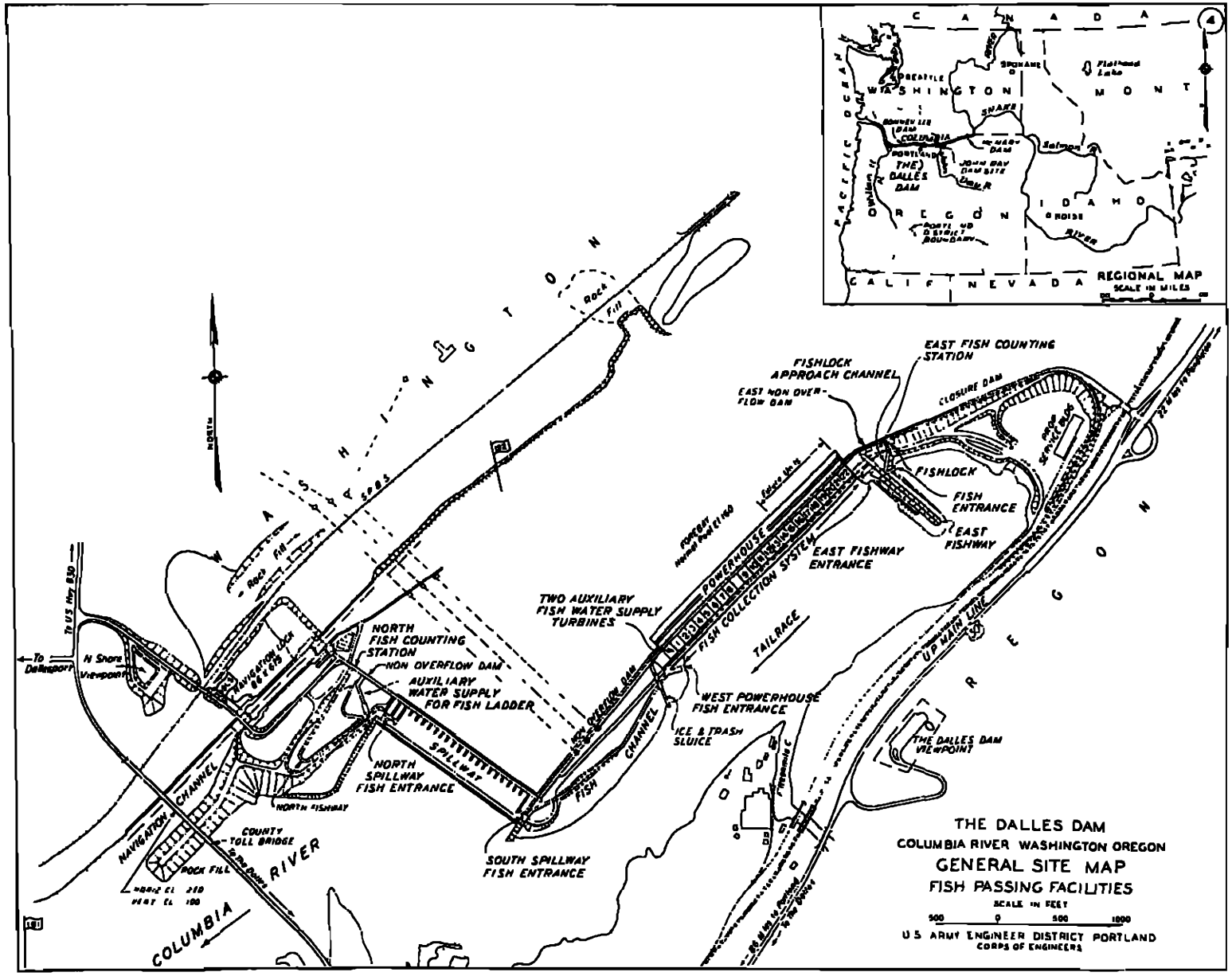
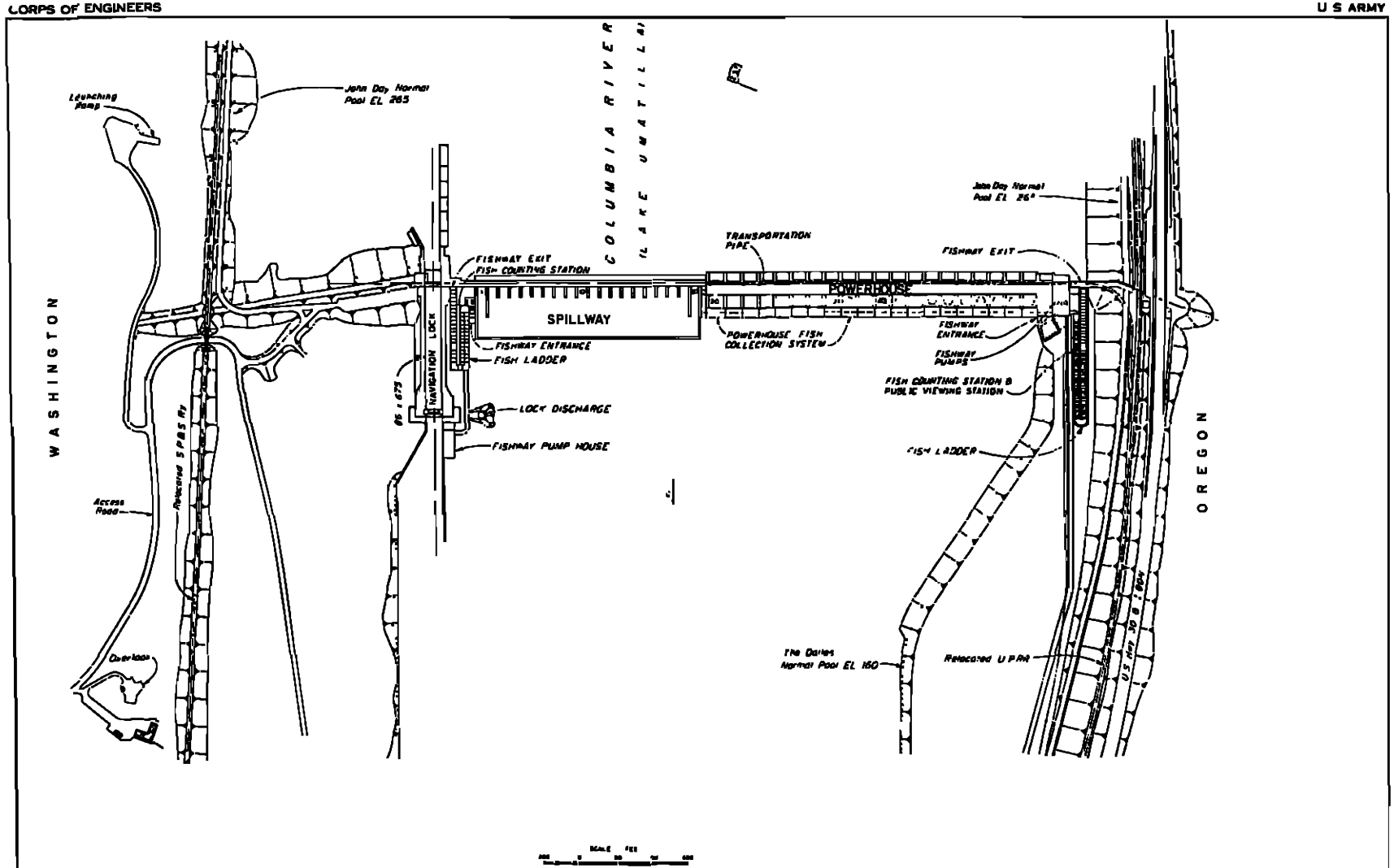
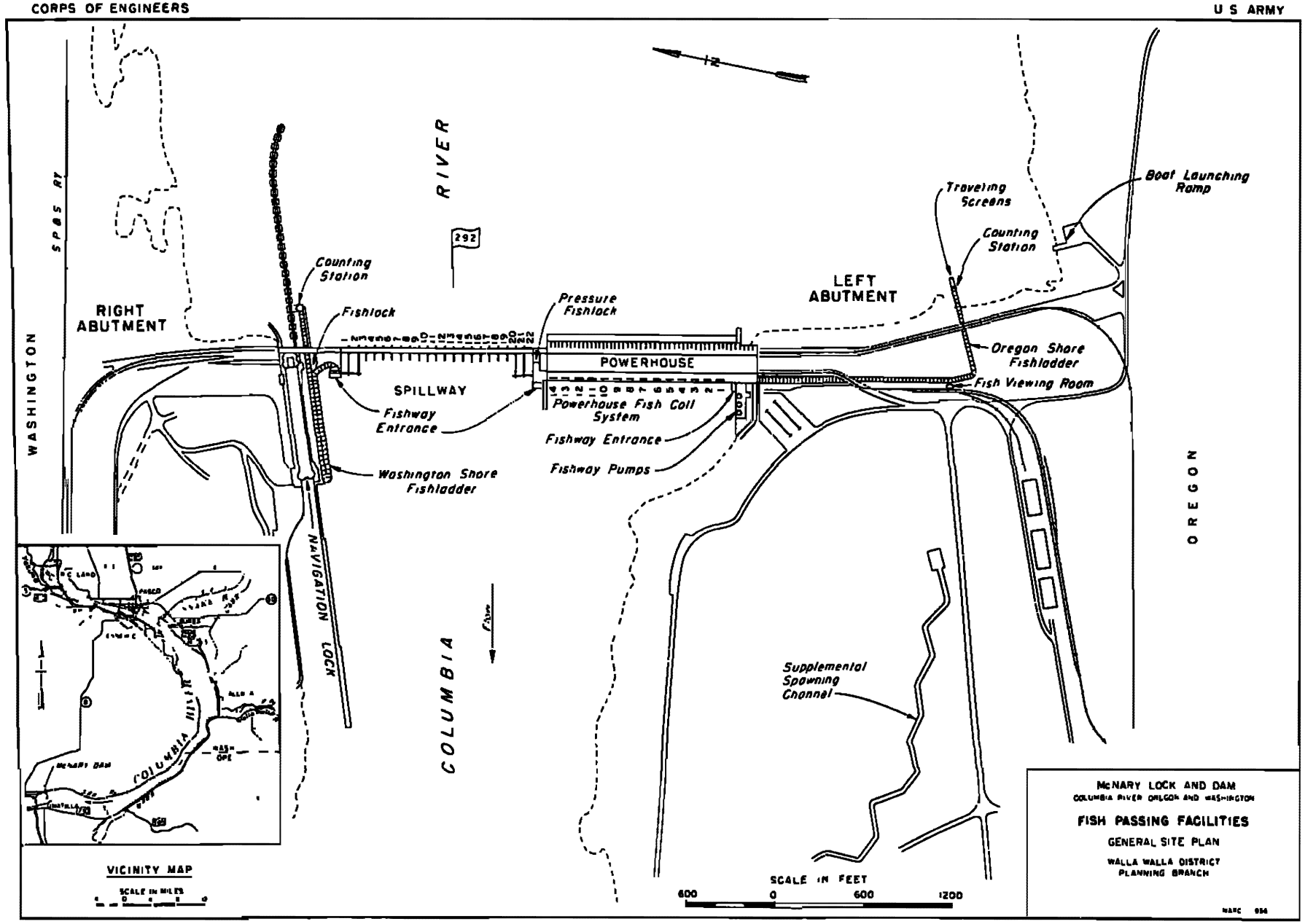

CORPS OF ENGINEERS
U S ARMY
W A S H I N G T O N
O R E G O N
COLUMBIA RIVER
Bradford Island
TAILRACE
FOREBAY
PARKING AREA
BONNEVILLE
NORTH BONNEVILLE
VICINITY MAP
THIS PRINT REDUCED TO ONE HALF SCALE
U S ARMY ENGINEER DISTRICT PORTLAND
BONNEVILLE DAM PROJECT
GENERAL SITE MAP

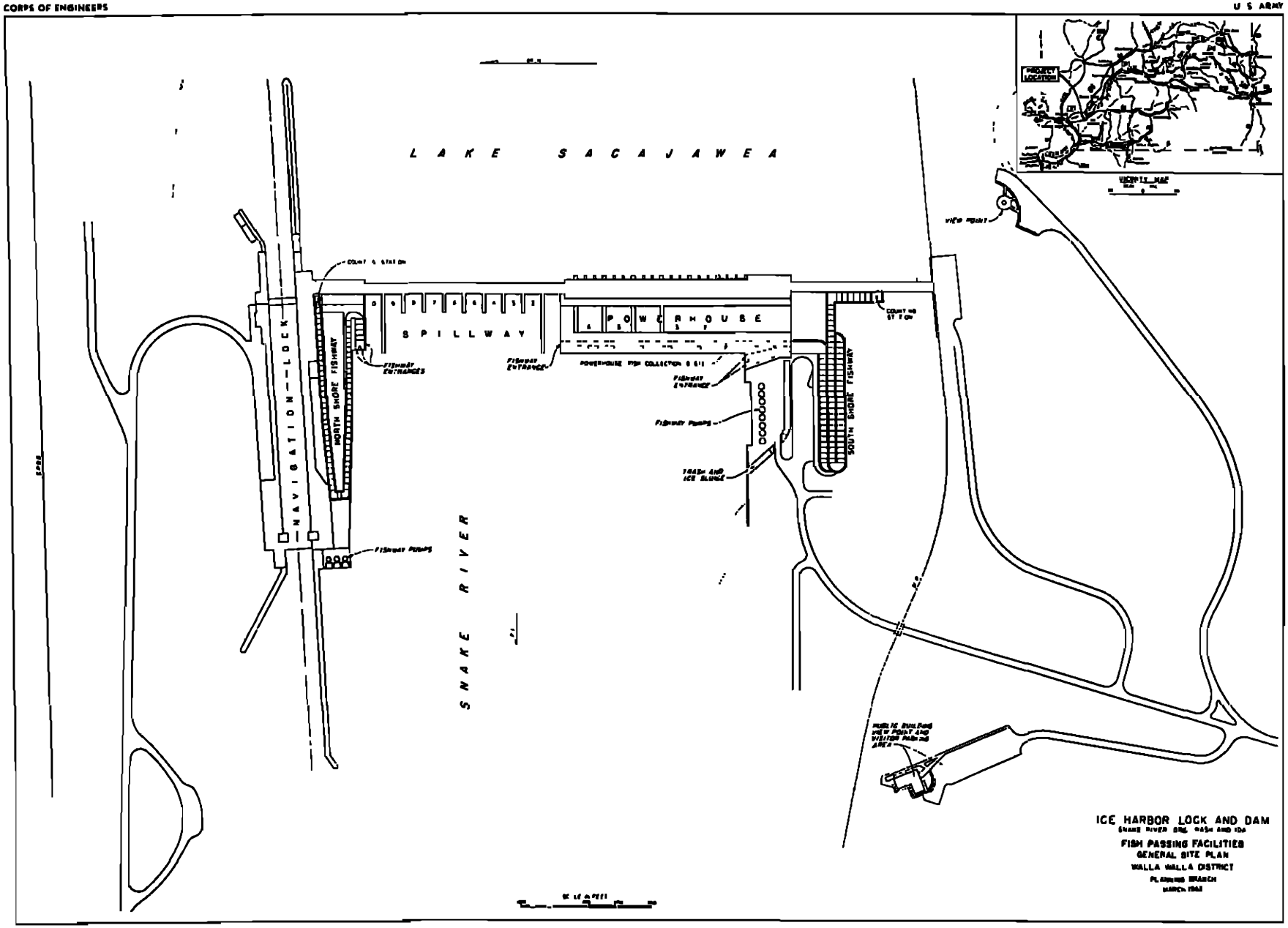
PLATE 21

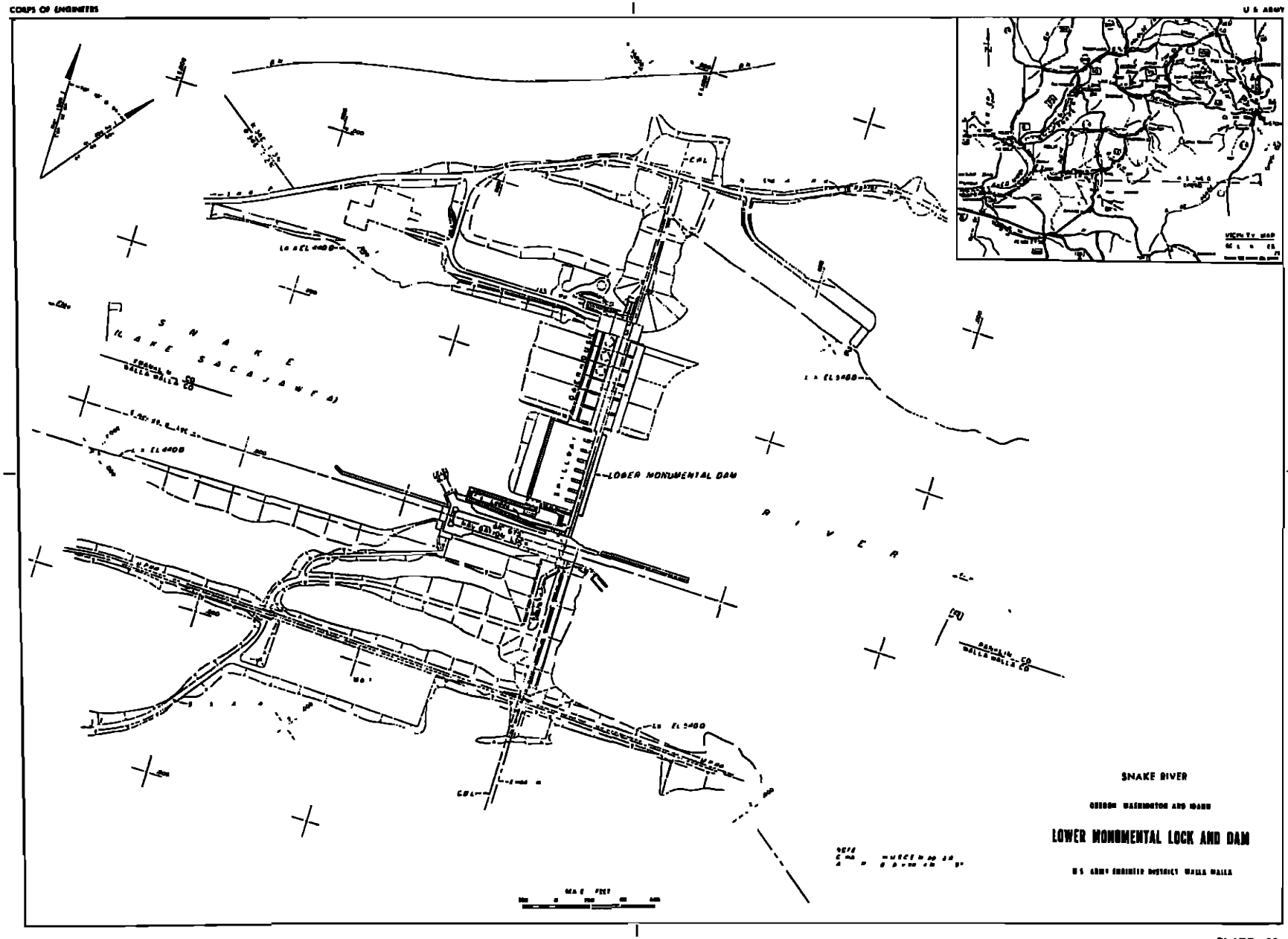

THE DALLES DAM
COLUMBIA RIVER WASHINGTON OREGON
GENERAL SITE MAP
FISH PASSING FACILITIES
SCALE IN FEET
500 0 500 1000
U S ARMY ENGINEER DISTRICT PORTLAND
CORPS OF ENGINEERS
REGIONAL MAP
SCALE IN MILES
CANADA
WASHINGTON
OREGON
IDAHO
MONT
CALIF
NEVADA
PACIFIC OCEAN
SEATTLE
SPOKANE
PORTLAND
BONNEVILLE DAM
COLUMBIA
SNAKE
McNARY DAM
JOHN DAY DAM SITE
THE DALLES DAM
BOISE
RIVER
NORTH
EAST FISH COUNTING STATION
FISHLOCK APPROACH CHANNEL
EAST NON OVER-FLOW DAM
CLOSURE DAM
FISHLOCK
FISH ENTRANCE
EAST FISHWAY
EAST FISHWAY ENTRANCE
POWERHOUSE
FISH COLLECTION SYSTEM
TWO AUXILIARY FISH WATER SUPPLY TURBINES
TAILRACE
NORTH FISH COUNTING STATION
NON OVERFLOW DAM
AUXILIARY WATER SUPPLY FOR FISH LADDER
WEST POWERHOUSE FISH ENTRANCE
ICE & TRASH SLUICE
NORTH SPILLWAY FISH ENTRANCE
SPILLWAY
FISH CHANNEL
SOUTH SPILLWAY FISH ENTRANCE
NORTH FISHWAY
COUNTY TOLL BRIDGE
ROCK FILL
NAVIGATION CHANNEL
NAVIGATION LOCK
N Shore Viewpoint
To Dallesport
To US Hwy 830
COLUMBIA RIVER
THE DALLES DAM VIEWPOINT
UP MAIN LINE
SERVICE BLDG

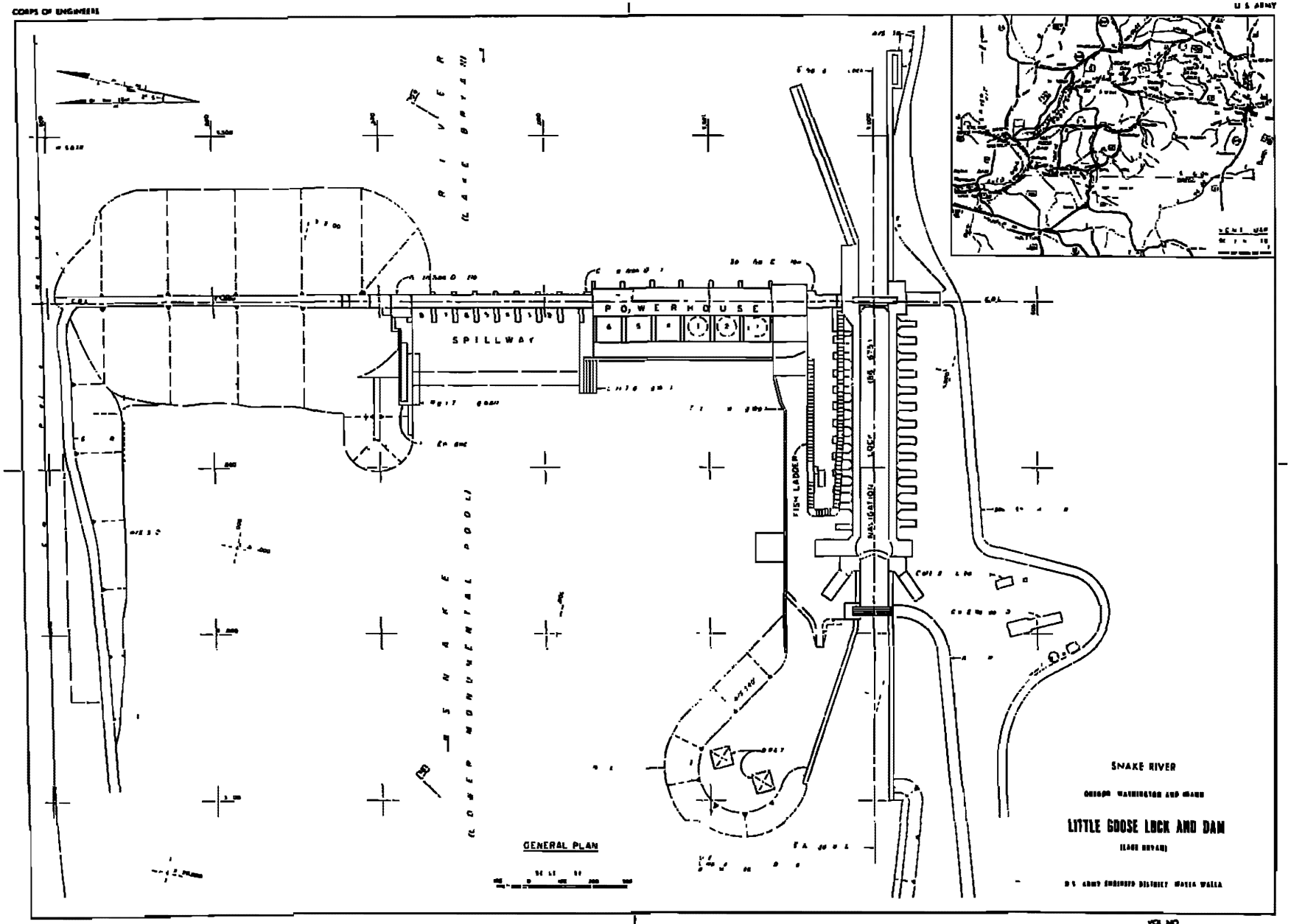


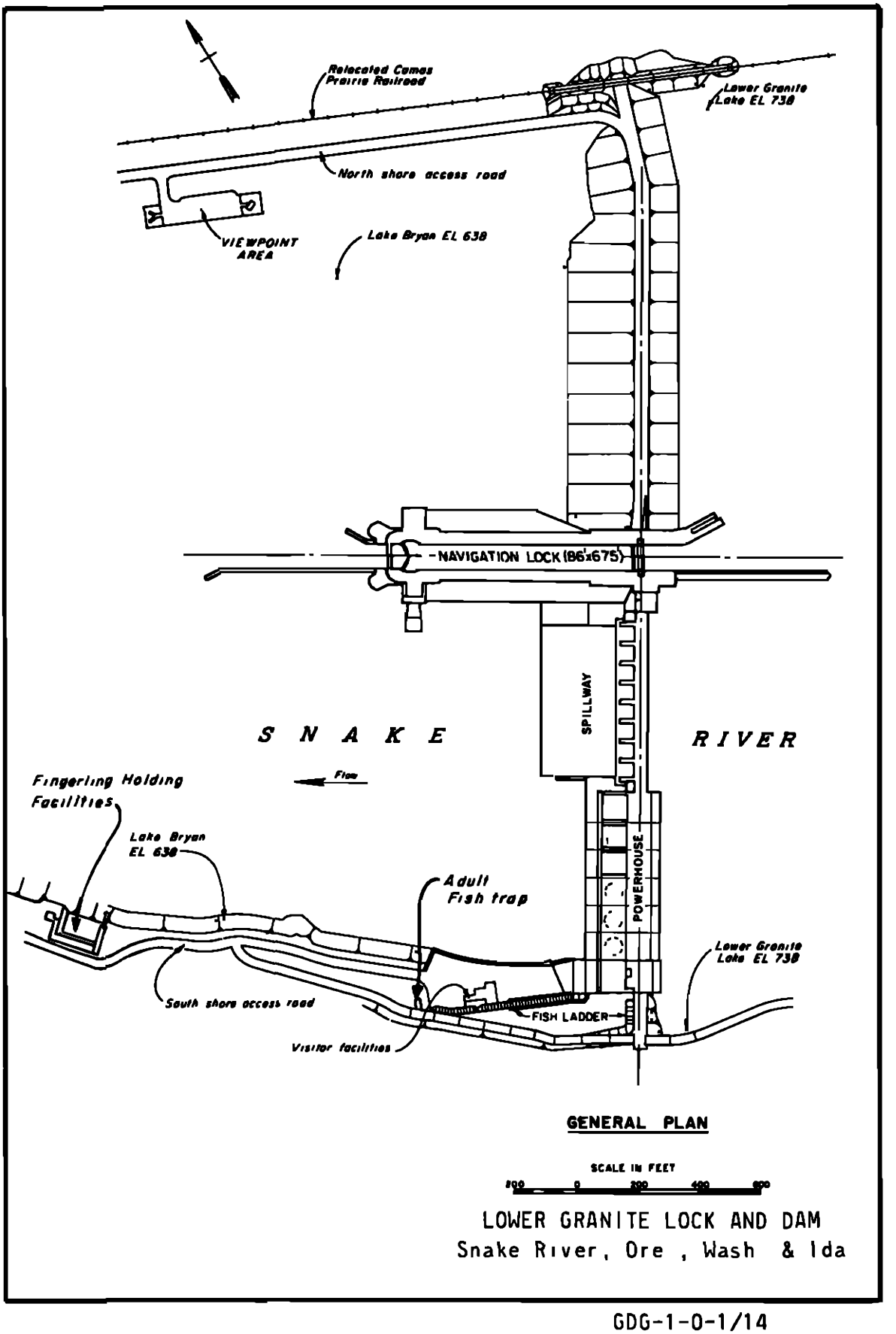
JOHN DAY LOCK AND DAM
COLUMBIA RIVER OREGON AND WASHINGTON
FISH PASSING FACILITIES
GENERAL SITE PLAN
WALLA WALLA DISTRICT
PLANNING BRANCH
AUGUST 1965


WASHINGTON
SPAS RY
RIVER
COLUMBIA
OREGON
RIGHT ABUTMENT
LEFT ABUTMENT
Counting Station
Fishlock
Pressure Fishlock
POWERHOUSE
SPILLWAY
Fishway Entrance
Powerhouse Fish Coll System
Fishway Entrance
Fishway Pumps
Washington Shore Fishladder
NAVIGATION LOCK
Traveling Screens
Counting Station
Boat Launching Ramp
Oregon Shore Fishladder
Fish Viewing Room
Supplemental Spawning Channel
292
VICINITY MAP
SCALE IN MILES
SCALE IN FEET
600 0 600 1200
McNARY LOCK AND DAM
COLUMBIA RIVER OREGON AND WASHINGTON
FISH PASSING FACILITIES
GENERAL SITE PLAN
WALLA WALLA DISTRICT
PLANNING BRANCH


LAKE SACAJAWEA
SPILLWAY
POWERHOUSE
NAVIGATION LOCK
NORTH SHORE FISHWAY
SOUTH SHORE FISHWAY
SNAKE RIVER
FISHWAY ENTRANCES
FISHWAY ENTRANCE
FISHWAY PUMPS
TRASH AND ICE SLUICE
VIEW POINT
PROJECT LOCATION
VICINITY MAP
ICE HARBOR LOCK AND DAM
FISH PASSING FACILITIES
GENERAL SITE PLAN
WALLA WALLA DISTRICT
PLANNING BRANCH


CORPS OF ENGINEERS
U.S. ARMY
SNAKE RIVER
LOWER MONUMENTAL DAM
RIVER
SNAKE RIVER
OREGON WASHINGTON AND IDAHO
LOWER MONUMENTAL LOCK AND DAM
U.S. ARMY ENGINEER DISTRICT WALLA WALLA


POWERHOUSE
SPILLWAY
FISH LADDER
LOCK
NAVIGATION
SNAKE RIVER
LOWER MONUMENTAL POOL
GENERAL PLAN
SNAKE RIVER
OREGON WASHINGTON AND IDAHO
LITTLE GOOSE LOCK AND DAM
(LAKE BENJAMIN)
U.S. ARMY ENGINEER DISTRICT WALLA WALLA



LOWER GRANITE LOCK AND DAM
Snake River, Ore , Wash & Ida

GDG-1-0-1/14