

ANNUAL FISH PASSAGE REPORT

COLUMBIA RIVER PROJECTS

BONNEVILLE JOHN DAY

THE DALLES McNARY

SNAKE RIVER PROJECTS

ICE HARBOR

LOWER MONUMENTAL

LITTLE GOOSE

OREGON AND WASHINGTON

1970



NORTH PACIFIC DIVISION

Corps of Engineers

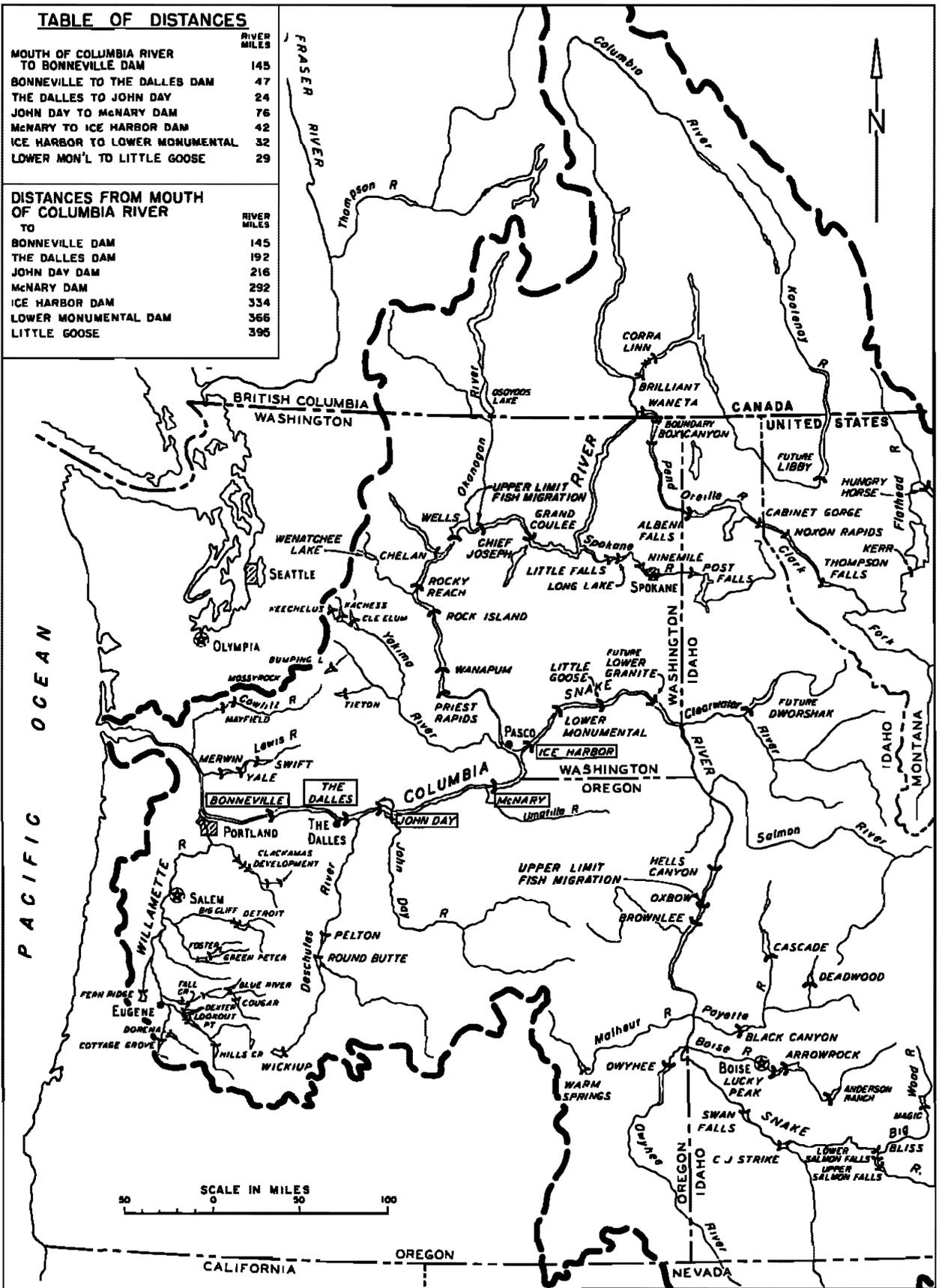
Prepared by

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COLUMBIA RIVER BASIN MAP

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ANNUAL FISH PASSAGE REPORT
COLUMBIA AND SNAKE RIVER PROJECTS
CALENDAR YEAR 1970

BONNEVILLE DAM

Salmon Passage

1. Totals of 649,527 salmonids, and 329,276 shad were counted at Bonneville Dam in 1970. The most salmon to be recorded in one day was 30,186 on 11 September; 19,363 of these were chinook, 8,576 coho, 2,212 steelhead, 13 sockeye, 7 chum, and 15 pinks.

2. A brief summary of salmonid counts is shown below. Comparative figures for other main stem projects are shown in Table 1.

| <u>Species</u> | <u>1970 Count</u> | <u>33-year Average</u> |
|-------------------------|-------------------|------------------------|
| Spring Run Chinook | 110,976 | 88,005 |
| Summer Run Chinook | 64,902 | 63,232 |
| Fall Run Chinook | 208,902 | 200,048 |
| Chinook Jacks or Grilse | 70,748 | 42,720 |
| Sockeye | 70,762 | 98,621 |
| Chum | 209 | 1,151 |
| Pink | 150 | 20 |
| Steelhead | 113,510 | 140,492 |
| Coho (Total) | 80,116 | 20,781 |
| Coho (Jacks) | 25,248 | 30,760* |

*5-Year Average

3. Of the 80,116 coho tabulated at Bonneville, 36,399, or 45.43% also passed McNary Dam.

Bonneville Dam

Miscellaneous Other Species

4. Miscellaneous species other than shad and sturgeon were disregarded in the 1970 fish counts.

5. Of the 329,276 shad passing into the Bonneville forebay, 308,670 were counted at The Dalles, 207,530 at John Day, and 108,350 at McNary. The maximum daily total of shad at Bonneville was 25,537 on 26 June.

Sturgeon

6. No sturgeon were observed at the Bonneville counting stations in 1970.

Bonneville 1970 Fish Counting Schedule

| | |
|---------------------------|--|
| 1 January - 28 February | No counting. Gates remained open at all times. |
| 1 March - 4 April | Two counters on duty 8:00 AM - 4:00 PM. Gates open and 1.26 factor applied to actual counts to compensate for night time and rest periods. |
| 5 April - 24 October | Four counters on duty 4:00 AM - 8:00 PM. Gates closed at night and during rest periods when no counting was being performed. |
| 25 October - 21 November | Two counters on duty 8:00 AM - 4:00 PM. Gates remained open at all times, and above factor applied to daily totals. |
| 22 November - 31 December | No counting. Gates open. |

Fishway 1970 In-service Periods

| | |
|------------------------|--------------|
| Bradford Island Ladder | Entire year. |
| Washington Ladder | Entire year. |

Fishway Activities

7. Two fishlocks, one at the Washington shore and one at the

Bonneville Dam

powerhouse were re-activated in December preparatory to periods some months hence when the fishways are to be reconstructed, and will, therefore, become inoperative. A horizontal Vee finger-barrier trap was installed on each fishlock brail.

8. Concomitant with fishlock renovation, extensive alterations were begun upon the powerhouse auxiliary water conduit. This work continued into 1971.

9. The Oregon Fish Commission tagged over sixteen-hundred spring chinook from the North Shore Fisheries Engineering Research Laboratory. The fish all readily ascended a 20 ft. long fishway set at a gradient of 27 percent at the top of which they were trapped, tagged, and released, some above and others below the dam. They were tallied at the counting stations until late in May. A number of the salmon, after being tagged and released into the forebay, descended through the dam and reascended the ladders.

10. A Columbia Broadcasting System television crew came to Bonneville 12 April to film a portion of an "Environment" documentary stressing ecology.

THE DALLES DAM

Fish Passage

11. The Dalles Dam fish counters recorded 461,545 salmonids and 308,670 shad in 1970. The maximum number of salmon in any one day was 13,821 on 13 Sept.; of these 9,231 were chinook, 2,840 steelhead, 3 sockeye, 1,746 coho, and one pink.

12. Miscellaneous species except the 308,670 shad were disregarded in the fish counts of 1970. The greatest number of shad in one day occurred on 27 June when 20,903 were tabulated.

The Dalles Dam 1970 Fish Counting Schedule

| | |
|--------------------------|---|
| 1 January - 4 April | No counting performed; gates remained open. |
| 5 April - 24 October | Four counters on duty 16 hours daily. Gates closed at night and rest periods. |
| 25 October - 31 December | No counting. Gates open. |

Fishway 1970 In-Service Periods

| | |
|--------------|---|
| North Ladder | 23 March - 16 November 10 December - 31 December |
| East Ladder | Entire year. |

Miscellaneous Activities

13. At Units 1 through 14 a total of 46 fingerling by-pass ports 6-inches in diameter were diamond-core-drilled between the intake gate slots and the trash sluice. Water passing through the 6 in. orifices now serves as a downstream fingerling by-pass route for "gate-well" fish.

14. Entrance weir settings were adjusted to comply with operating criteria established by a committee of representatives of the fishery agencies. This employs only two slots at the east and west powerhouse

The Dalles Dam

entrances, uses one slot at the south spillway entrance, provides greater depth of water flow at each slot, and maintains greater head on the powerhouse collection system orifice entry ports.

15. Contractors began work in May leading to completion of Units 15 through 22. This work continued into 1971. No additional Units were put on the line in 1970.

JOHN DAY DAM

Fish Passage

16. Fish counted at John Day Dam in 1970 included 402,624 salmonids and 207,530 shad. The greatest tabulation of salmonids for one day was 11,731 on 12 September, and comprised 6,408 chinook, 4,159 steelhead, 1,163 coho and one sockeye. The maximum daily count of shad was 14,238 on 1 July; other miscellaneous species were not counted in 1970.

John Day Dam 1970 Fish Counting Schedule

| | |
|--------------------------|--|
| 1 January - 4 April | No fish counted. Gates open. |
| 5 April - 24 October | Four counters on duty, counting 16 hours, 4:00 AM - 8:00 PM. Gates closed at night and rest periods. |
| 25 October - 31 December | No counting performed. Gates remained open. |

Fishway 1970 In-Service Periods

| | |
|--------------|--|
| North Ladder | 1 January - 1 March 27 March - 31 December |
| South Ladder | 18 February - 26 April 28 April - 20 November |

Maintenance and Operations Activities

17. By the end of May, one-half of the powerhouse fish collection system entry ports were closed. This was accomplished by inverting and filling 19 of the buoyant orifice assemblies. In addition, metal covers were placed over the orifice of the inverted buoyant adit structures. Thereafter, use of 3 powerhouse auxiliary water pumps created a head of nearly 2 feet at the south end of the powerhouse collection system and 12 inches of head at the north end. Since it was not known where the fish entered the system, it became desirable to

John Day Dam

attempt to learn where, and under what conditions the fish enter the powerhouse collection system. Plans were made to seek funds to count the number of fish entering each submerged orifice entry port by use of one electric fish counting tunnel at each of the 19 buoyant orifice edits. In addition, the electronic fish counting tunnels will make it possible to test the efficacy of lights to attract fish to the fishways. The investigation is planned for 1971.

18. During March, a vertical-slot fish-counting station was installed in the north ladder, together with angled picket leads upstream and downstream from the slot. An inverted periscope made it possible to see the fish very plainly.

19. Fish counters recorded the passage of numerous spring chinook salmon bearing Fish Commission of Oregon flag tags which had been applied at Bonneville.

Dates of Initial Unit Operation

| | |
|---------------------------|----------------------------|
| Unit 1 - 16 July 1968 | Unit 8 - 12 May 1969 |
| Unit 2 - 29 August 1968 | Unit 9 - 2 July 1969 |
| Unit 3 - 15 October 1968 | Unit 10 - 26 August 1969 |
| Unit 4 - 16 November 1968 | Unit 11 - 4 February 1970 |
| Unit 5 - 22 January 1969 | Unit 12 - 22 April 1970 |
| Unit 6 - 19 February 1969 | Unit 13 - 3 November 1970 |
| Unit 7 - 26 March 1969 | Unit 14 - 17 December 1970 |

McNARY DAM

Fish Passage

20. A total of 334,686 salmonids were counted over McNary Dam in 1970. The greatest number of salmonids for any one day was 9,259 on 14 September 1970. The miscellaneous species count was discontinued during the 1970 season.

McNary Fish Counting Schedule

| | |
|--------------------------|---|
| 1 January - 31 March | Gates open - no counting performed. |
| 1 April - 31 October | Full count 0400-2000 hours daily. Gates closed during noncount periods. |
| 1 November - 31 December | Gates open - no counting performed. |

Fishway 1970 In-Service Periods

| | |
|-------------------|-------------|
| Washington ladder | Entire year |
| Oregon ladder | Entire year |

Special Fishery Activities

21. The State of Washington, through cooperation with the National Marine Fisheries Service conducted a downstream migrant study by dipping the gate wells at McNary Dam. The purpose was to evaluate marked releases from spawning channels and natural rearing ponds on the upper Columbia River.

ICE HARBOR DAM

Fish Passage

22. A total of 136,001 salmonids were counted over Ice Harbor Dam in 1970. The greatest number of salmonids on any one day was 5,186 on 1 May 1970. Miscellaneous fishes were not included in the 1970 count.

Ice Harbor Fish Counting Schedule

| | |
|--------------------------|---|
| 1 January - 31 March | Gates open - no counting. |
| 1 April - 31 October | Two-shift full-count basis, 0400-2000. |
| 1 November - 5 December | Single-shift full-count basis, 0800-1600. |
| 6 December - 31 December | Gates open - no counting. |

Fishway 1970 In-service Periods

| | |
|--------------|-------------|
| North ladder | Entire year |
| South ladder | Entire year |

LOWER MONUMENTAL

Fish Passage

23. A total of 140,689 salmonids were counted over Lower Monumental Dam. The greatest number of salmonids in any one day was 4,630 on 3 May 1971. The miscellaneous species count was not conducted during the 1970 season.

Lower Monumental Fish Counting Schedule

| | |
|--------------------------|--|
| 2 January - 31 March | Single-shift full-count basis, 0800-1600 |
| 1 April - 31 October | Two-shift full-count basis, 0500-2100 |
| 1 November - 31 December | Single-shift full-count basis, 0800-1600 |

Fishway In-service Periods

| | |
|--------------|-------------|
| North ladder | Entire year |
| South ladder | Entire year |

Dates of Initial Powerhouse Unit Operation

Unit 1 - 28 May 1969
Unit 2 - 8 September 1969
Unit 3 - 6 January 1970

LITTLE GOOSE

Fish Passage

24. A total of 135,254 salmonids were counted over Little Goose Dam. The greatest number of salmon in any day was 3,598 on 4 May 1970. No miscellaneous species were counted.

Little Goose Fish Counting Schedule

1 March - 31 October Two-shift full-count basis, 0500-2100.
1 November - 30 November Single-shift full-count, 0800-1600.

Pertinent Data

Stream

| | |
|---|---------|
| River miles from mouth of Columbia River | 394.7 |
| River miles from mouth of Snake River | 70.3 |
| River mile upstream from Lower Monumental Dam | 28.7 |
| Drainage Area, square miles | 103,900 |
| Discharges in cubic feet per second: | |
| Minimum monthly low flow, natural | 11,000 |
| Mean annual flow | 48,950 |
| Maximum of record, June 1894 | 409,000 |
| Standard project flood | 340,000 |
| Spillway design flood | 850,000 |

Tailwater Elevations, msl, Lower Monumental pool 540:

| | |
|-------------------------------------|-----|
| 60,000 cfs | 540 |
| 340,000 cfs, Standard project flood | 548 |
| 850,000 cfs, Spillway design flood | 567 |

Reservoir

| | |
|----------------------------|--------|
| Elevation, normal pool msl | 638 |
| Elevation, minimum pool | 633 |
| Length, miles | 37.2 |
| Area at normal pool, acres | 10,025 |

General

| | |
|---|---------------|
| Length at crest, feet | 2,660 |
| Normal height headwater to tail water, feet | 98 |
| Estimated cost | \$149,000,000 |

Spillway

| | |
|----------------------------|-----|
| Overall crest length, feet | 512 |
| Number of bays | 8 |

Little Goose

Spillway (Cont'd)

| | |
|--|---------|
| Bay width, feet | 50 |
| Pier width, feet | 14 |
| Crest elevation, msl. | 581 |
| Gate size, width by height above crest | 50 x 59 |
| Deck elevation | 651 |

Powerhouse

| | |
|---|-------------|
| Length overall, feet | 656 |
| Total number of units definitely provided for | 6 |
| Skeleton units provided initially | 3 |
| Units installed complete initially | 3 |
| Dates in operation: | |
| Unit No. 1 | 26 Mar 1970 |
| Unit No. 2 | 30 Oct 1970 |
| Unit No. 3 | 8 Dec 1970 |
| Intake deck elevation | 651 |
| Tailrace deck elevation | 558 |
| Turbines: | |
| Type | Kaplan |
| Runner diameter, inches | 305 |
| Revolutions per minute | 90 |
| Rating, horsepower | 212,400 |
| Generators: | |
| Rating, (Name plate), kilowatts | 135,000 |

Navigation Lock (single lift)

| | |
|---------------------------------|-----|
| Net clear length of lock, feet | 675 |
| Net clear width of lock, feet | 86 |
| Minimum water depth over sills | 15 |
| Maximum operating lift, feet | 101 |
| Upstream sill block elevation | 618 |
| Downstream sill block elevation | 522 |

Fish Facilities

| | |
|---|-----------------------------|
| One ladder | on south shore |
| Ladder clear width, feet | 20 |
| Slope | 1 vertical on 10 horizontal |
| Normal ladder flow, cfs | 75 |
| Powerhouse collection channel: | |
| Entrances, number: | |
| Submerged orifices | 10 |
| Overflow weir | 3 |
| North shore entrance | 1 |
| Connected to powerhouse system by a channel under the spillway | |
| Auxiliary water supply: | |
| One facility supplying North shore entrance, powerhouse, and South shore. | |

Little Goose

Fish Facilities (Cont'd)

| | |
|---|----------------|
| Number of pumps | 3 |
| Capacity of each pump, cfs. | 850 |
| Type | turbine driven |
| Fingerling by-pass facility | |
| Collection ports located in the powerhouse intake gate slots with a header. | |

TABLE 1
FISH ESCAPEMENT AT MAIN STEM DAMS
COLUMBIA & SHAKO RIVERS 1966 TO 1970

| SPECIES | BONNEVILLE | THE DALLES | JOHN DAY | MCMARY | ICE HARBOR | LOWER MONUMENTAL | LITTLE GOOSE | PRIEST RAPIDS | ROCKY BEACH |
|--------------------------------|-------------------|-------------------|-------------------|----------------|--------------------|--------------------|------------------|------------------|------------------|
| 1966 | | | | | | | | | |
| CHINOOK | 340,111 | 240,671 | | 223,141 | 75,882 | | | 62,868 | 31,923 |
| Spring* | 112,669 | 96,628 | | 87,195 | 43,681 | | | 16,375 | 8,354 |
| Summer* | 71,997 | 61,062 | | 60,827 | 16,983 | | | 32,581 | 19,445 |
| Fall* | 155,445 | 82,981 | | 75,119 | 15,018 | | | 15,912 | 4,136 |
| Jacks | 45,468 | 36,482 | | | | | | 18,809 | 11,243 |
| STEELHEAD | 143,661 | 146,172 | | 145,130 | 65,798 | | | 12,749 | 6,093 |
| SOCKEYE | 156,661 | 147,886 | | 173,028 | 278 | | | 170,067 | 129,557 |
| COHO* | 71,891 | 32,279 | | 8,525 | 878 | | | 11,491 | 879 |
| Adults | 36,972 | 15,653 | | | | | | | |
| Jacks | 34,919a | 16,626a | | | | | | | |
| SHAD | 557,513 | 399,028 | | 100,483 | 8,398 | | | 716 | - |
| LAMPREY | 67,914 | 43,383 | | 3,410 | 15,106 | | | | 1,930 |
| 1967 | | | | | | | | | |
| CHINOOK* | 366,237 | 280,112 | | 195,653 | 86,930 | | | 48,918 | 23,446 |
| Spring* | 84,935 | 71,976 | | 62,591 | 35,593 | | | 10,589 | 3,160 |
| Summer** | 95,659 | 72,582 | | 59,973 | 30,315 | | | 26,241 | 15,358 |
| Fall* | 185,643 | 135,554 | | 73,087 | 19,022 | | | 12,088 | 2,328 |
| Jacks | 73,581 | 98,817 | | | 2,221 | | | 15,450 | 8,081 |
| STEELHEAD | 121,872 | 121,634 | | 77,700 | 44,205 | | | 7,354 | 2,487 |
| SOCKEYE | 144,158 | 120,589 | | 105,635 | 717 | | | 123,786 | 109,436 |
| COHO* | 96,488 | 32,015 | | 27,198 | 3,770 | | | 8,879 | 688 |
| Adults | 48,505 | 11,559 | | 5,876 | | | | | |
| Jacks | 47,983 | 20,456 | | 21,322 | | | | | |
| SHAD | 222,460 | 138,998 | | 25,673 | 6,531 | | | 239 | - |
| LAMPREY | 66,171 | 28,311 | | 1,516 | 4,836 | | | | 6,945 |
| 1968 | | | | | | | | | |
| CHINOOK* | 341,134 | 262,975 | 233,654 | 200,488 | 98,681 | | | 48,314 | 23,411 |
| Spring* | 99,187 | 98,742 | 77,482 | 67,092 | 44,773 | | | 11,621 | 6,422 |
| Summer** | 82,919 | 67,391 | 75,494 | 60,639 | 29,531 | | | 27,121 | 14,721 |
| Fall* | 159,048 | 96,842 | 80,678 | 72,757 | 24,377 | | | 9,572 | 2,268 |
| Jacks | 64,823 | 64,664 | 67,284 | 44,100 | 16,104 | | | 13,319 | 7,949 |
| STEELHEAD | 106,974 | 147,481 | 121,256 | 112,322 | 82,383 | | | 108,584 | 3,553 |
| SOCKEYE | 108,207 | 116,897 | 87,847 | 101,007 | 1,165 | | | 108,368 | 91,376 |
| COHO* | 63,488 | 42,687 | 38,233 | 39,518 | 6,227 | | | 13,212 | 735 |
| Adults | 43,030 | 29,652 | 24,306 | 21,852 | 3,856 | | | 11,459 | |
| Jacks | 20,458 | 13,035 | 13,927 | 17,566 | 2,371 | | | 1,757 | |
| SHAD | 294,078 | 231,136 | 123,136 | 26,247 | 584 | | | 300 | |
| LAMPREY | 109,029 | 57,628 | 21,669 | 1,568 | 6,676 | | | | 7,402 |
| 1969 | | | | | | | | | |
| CHINOOK* | 507,543 | 314,258 | 276,051 | 213,407 | 100,514 | 86,700 | | 40,696 | 21,034 |
| Spring* | 173,562 | 100,482 | 81,724 | 70,079 | 52,090 | 48,637 | | 8,872 | 4,400 |
| Summer** | 102,153 | 61,978 | 64,732 | 63,953 | 30,917 | 30,455 | | 20,329 | 12,996 |
| Fall* | 231,828 | 151,798 | 129,595 | 79,375 | 17,507 | 7,608 | | 11,495 | 3,638 |
| Jacks | 96,295 | 96,244 | 93,928 | 39,697 | 10,023 | 12,268 | | 14,028 | 8,532 |
| STEELHEAD | 140,782 | 112,529 | 86,348 | 76,681 | 63,889 | 71,434 | | 6,647 | 1,974 |
| SOCKEYE | 59,636 | 37,226 | 39,847 | 29,787 | 745 | 1,127 | | 39,131 | 20,374 |
| COHO* | 49,378 | 17,054 | 13,589 | 53,716 | 5,316 | 6,466 | | 1,344 | 179 |
| Adults | 24,162 | 5,836 | 4,558 | 6,751 | 2,276 | 3,912 | | 661 | |
| Jacks | 25,216 | 11,218 | 9,031 | 46,965 | 3,040 | 2,554 | | 683 | |
| SHAD | 317,358 | 305,888 | 174,523 | 89,402 | 442 | 545 | | 3,440 | |
| LAMPREY | 379,509 | 167,252 | 52,314 | 3,069 | 5,348 | 8,271 | | | 17,208 |
| 1970 | | | | | | | | | |
| CHINOOK* | 384,780 | 261,457 | 222,306 | 168,892 | 77,698 | 75,310 | 72,971 | 42,917 | 21,953 |
| Spring* | 110,976 | 83,549 | 72,355 | 62,982 | 47,931 | 45,613 | 43,572 | 6,078 | 4,288 |
| Summer** | 64,902 | 48,115 | 43,093 | 43,356 | 19,382 | 22,413 | 23,174 | 17,955 | 9,215 |
| Fall* | 208,902 | 129,793 | 106,858 | 61,554 | 10,385 | 7,284 | 6,225 | 19,884 | 8,450 |
| Jacks | 70,748 | 85,471 | 74,090 | 30,842 | 7,396 | 10,933 | 16,567 | 18,675 | 10,940 |
| STEELHEAD | 113,310 | 99,187 | 82,440 | 69,759 | 53,870 | 62,167 | 59,640 | 5,558 | 2,543 |
| SOCKEYE | 70,762 | 77,678 | 78,133 | 59,636 | 797 | 240 | 163 | 77,523 | 56,251 |
| COHO* | 80,116 | 23,219 | 19,543 | 36,399 | 3,636 | 2,972 | 2,480 | 4,368 | 207 |
| Adults | 54,868 | 11,892 | 10,276 | 8,273 | 1,783 | 1,649 | 1,080 | 1,797 | - |
| Jacks | 25,248 | 11,327 | 9,267 | 28,124 | 1,853 | 1,323 | 1,400 | 2,571 | - |
| SHAD | 329,276 | 308,670 | 207,530 | 108,350 | 395 | 812 | - | 6,770 | - |
| Assumed Dates for Chinook Runs | | | | | | | | | |
| Spring | 1 Mar - 31 May | 5 Apr ** 3 June | 5 Apr * 5 June | 1 Apr - 8 June | 1 Apr ** 11 June | 2 Jan ** 13 June | 1 Apr - 15 June | 16 Apr - 13 June | 30 Apr - 19 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 | 16 June - 13 Aug | 20 June - 19 Aug |
| Fall | 1 Aug - 21 Nov ** | 4 Aug - 24 Oct ** | 6 Aug - 24 Oct ** | 9 Aug - 31 Oct | 12 Aug - 31 Dec ** | 14 Aug - 31 Dec ** | 16 Aug - 31 Dec | 14 Aug - 31 Dec | 20 Aug - 15 Nov |

* Includes jack counts Fish classified as jacks are those under 22 inches in length except for counts marked "a" (under 12 inches)

** 1971 only Beginning and termination of counting for previous years may vary slightly

TABLE 1

TABLE 2

YEARLY TOTALS OF SALMONID FISH COUNTED OVER BONNEVILLE DAM

1938 - 1970

| 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 |
| 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 | 649,526 |
| Total | 11,592,395 | 4,635,935 | 3,254,497 | 685,759 | 37,972 | 668 | 20,207,225 |
| 33-Year Average | 351,285 | 140,483 | 98,621 | 20,781 | 1,151 | 20 | 612,340 |

TABLE 2

TABLE 3

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER BONNEVILLE DAM

1970

| SPECIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|--------------|-----|-----|-------|--------|--------|---------|---------|--------|---------|-------|-----|-----|---------|
| Chinook | - | - | 2,020 | 78,605 | 30,351 | 35,091 | 29,811 | 44,559 | 159,710 | 4,364 | 269 | - | 384,780 |
| Steelhead | - | - | 244 | 1,267 | 1,331 | 4,208 | 30,866 | 46,307 | 27,073 | 1,909 | 305 | - | 113,510 |
| Sockeye | - | - | - | 5 | 269 | 22,977 | 46,062 | 1,147 | 290 | 12 | - | - | 70,762 |
| Coho | - | - | - | - | - | 2 | 128 | 6,604 | 70,631 | 2,631 | 120 | - | 80,116 |
| Chum | - | - | - | - | - | - | - | 6 | 64 | 75 | 64 | - | 209 |
| Pink | - | - | - | - | - | - | 1 | 7 | 125 | 16 | 1 | - | 150 |
| Total Salmon | - | - | 2,264 | 79,877 | 31,951 | 62,278 | 106,868 | 98,630 | 257,893 | 9,007 | 759 | - | 649,527 |
| Shad | - | - | - | 2 | 250 | 228,519 | 99,659 | 566 | 262 | 18 | - | - | 329,276 |

TABLE 5

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNT DATA - MARCH 1970

BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|------------|-------|
| | Air | | Water | | Turbidity | Flow | Chinook | Steel-head | Total |
| | Max. | Min. | | | | | | | |
| 1 | 43 | 32 | 43 | 0.24 | 2.4 | 146,300 | - | 2 | 2 |
| 2 | 50 | 34 | 42 | 0.04 | 2.0 | 167,600 | 2 | 4 | 6 |
| 3 | 48 | 38 | 42 | 0.04 | 1.9 | 188,200 | 1 | - | 1 |
| 4 | 52 | 34 | 41 | 0.00 | 1.8 | 175,200 | 1 | 4 | 5 |
| 5 | 49 | 38 | 43 | 0.38 | 1.8 | 143,800 | 3 | 4 | 7 |
| 6 | 55 | 47 | 43 | 2.04 | 1.8 | 121,200 | 3 | 7 | 10 |
| 7 | 52 | 35 | 43 | 0.22 | 1.8 | 137,400 | 4 | 11 | 15 |
| 8 | 55 | 34 | 43 | 0.00 | 2.2 | 122,000 | 1 | 4 | 5 |
| 9 | 55 | 36 | 43 | 0.00 | 2.5 | 126,400 | 1 | 1 | 2 |
| 10 | 57 | 39 | 43 | 0.22 | 2.0 | 135,900 | 2 | 7 | 9 |
| 11 | 48 | 38 | 44 | 0.43 | 1.7 | 155,100 | 1 | 1 | 2 |
| 12 | 45 | 40 | 43 | 0.60 | 1.7 | 150,000 | - | - | - |
| 13 | 56 | 41 | 43 | 0.89 | 2.0 | 142,800 | - | - | - |
| 14 | 57 | 43 | 43 | 0.24 | 2.0 | 143,000 | 5 | 2 | 7 |
| 15 | 53 | 43 | 44 | 0.34 | 2.0 | 144,100 | 5 | 3 | 8 |
| 16 | 51 | 40 | 44 | 0.13 | 2.0 | 142,800 | 8 | 8 | 16 |
| 17 | 53 | 31 | 44 | 0.00 | 2.0 | 188,200 | 10 | 1 | 11 |
| 18 | 59 | 32 | 44 | 0.00 | 2.5 | 195,500 | 16 | 7 | 23 |
| 19 | 63 | 34 | 44 | 0.00 | 2.0 | 164,500 | 11 | 7 | 18 |
| 20 | 61 | 36 | 44 | 0.02 | 2.0 | 144,000 | 30 | 2 | 32 |
| 21 | 54 | 38 | 44 | 0.00 | 2.0 | 150,000 | 49 | 17 | 66 |
| 22 | 58 | 38 | 44 | 0.00 | 2.0 | 190,100 | 101 | 14 | 115 |
| 23 | 52 | 42 | 46 | 0.11 | 2.3 | 164,300 | 91 | 11 | 102 |
| 24 | 58 | 34 | 45 | 0.00 | 2.3 | 151,700 | 122 | 24 | 146 |
| 25 | 60 | 35 | 46 | 0.03 | 2.3 | 160,200 | 172 | 9 | 181 |
| 26 | 64 | 34 | 46 | 0.00 | 2.3 | 159,900 | 166 | 11 | 177 |
| 27 | 64 | 34 | 46 | 0.07 | 2.5 | 147,300 | 130 | 7 | 137 |
| 28 | 55 | 42 | 46 | 0.05 | 2.5 | 133,700 | 137 | 8 | 145 |
| 29 | 57 | 32 | 46 | 0.03 | 2.2 | 140,300 | 183 | 11 | 194 |
| 30 | 62 | 33 | 47 | 0.00 | 2.2 | 160,600 | 248 | 28 | 276 |
| 31 | 63 | 36 | 47 | 0.00 | 2.5 | 135,600 | 517 | 29 | 546 |
| | | | | 6.12 | | | 2,020 | 244 | 2,264 |

TABLE 5

TABLE 6
CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - APRIL 1970

BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | Shad |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|----------|--------------|----------------|----------|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Steel-head | Total Salmonid | |
| | Max. | Min. | | | | | | | | | |
| 1 | 52 | 42 | 47 | 0.18 | 2.3 | 110,800 | 107 | - | 4 | 111 | - |
| 2 | 58 | 32 | 47 | 0.00 | 2.3 | 170,100 | 364 | - | 5 | 369 | - |
| 3 | 63 | 35 | 47 | 0.00 | 2.3 | 197,200 | 889 | - | 26 | 915 | - |
| 4 | 58 | 39 | 47 | 0.40 | 2.3 | 144,500 | 992 | - | 23 | 1,015 | - |
| 5 | 63 | 47 | 47 | 0.08 | 2.3 | 125,400 | 1,667 | - | 63 | 1,730 | - |
| 6 | 49 | 37 | 47 | 0.90 | 2.3 | 120,700 | 1,717 | - | 61 | 1,778 | - |
| 7 | 51 | 37 | 48 | 0.05 | 2.2 | 160,800 | 2,812 | - | 62 | 2,874 | - |
| 8 | 64 | 42 | 48 | 0.12 | 2.2 | 139,400 | 3,533 | - | 42 | 3,575 | - |
| 9 | 56 | 43 | 48 | 1.26 | 2.4 | 159,800 | 1,720 | - | 27 | 1,747 | - |
| 10 | 54 | 38 | 48 | 0.11 | 2.4 | 172,800 | 2,766 | - | 64 | 2,830 | - |
| 11 | 52 | 31 | 48 | 0.07 | 2.4 | 163,400 | 2,420 | - | 27 | 2,447 | - |
| 12 | 57 | 33 | 48 | 0.00 | 3.2 | 144,100 | 2,600 | - | 31 | 2,631 | - |
| 13 | 62 | 33 | 48 | 0.00 | 3.3 | 155,600 | 2,877 | 3 | 41 | 2,921 | - |
| 14 | 62 | 37 | 48 | 0.00 | 3.3 | 145,900 | 3,835 | - | 51 | 3,886 | - |
| 15 | 61 | 37 | 49 | 0.00 | 3.4 | 156,300 | 3,695 | - | 53 | 3,748 | - |
| 16 | 62 | 37 | 49 | 0.00 | 3.3 | 182,500 | 3,924 | - | 73 | 3,997 | - |
| 17 | 66 | 39 | 49 | 0.00 | 3.6 | 172,400 | 2,400 | - | 37 | 2,437 | - |
| 18 | 62 | 38 | 49 | 0.98 | 3.5 | 152,500 | 2,375 | - | 37 | 2,412 | - |
| 19 | 49 | 38 | 49 | 0.63 | 3.5 | 140,400 | 2,264 | - | 27 | 2,291 | - |
| 20 | 53 | 38 | 49 | 0.00 | 3.5 | 150,800 | 3,224 | - | 76 | 3,300 | - |
| 21 | 54 | 40 | 49 | Trace | 3.5 | 163,400 | 3,212 | 1 | 49 | 3,262 | - |
| 22 | 56 | 42 | 49 | 0.28 | 3.7 | 172,700 | 3,507 | - | 45 | 3,552 | - |
| 23 | 50 | 43 | 49 | 0.59 | 3.5 | 165,400 | 1,534 | - | 16 | 1,550 | - |
| 24 | 50 | 39 | 49 | 0.50 | 3.2 | 144,400 | 2,698 | - | 30 | 2,728 | - |
| 25 | 45 | 35 | 49 | 0.87 | 3.2 | 134,900 | 4,809 | 1 | 73 | 4,883 | - |
| 26 | 49 | 37 | 49 | 0.03 | 3.2 | 155,300 | 2,821 | - | 27 | 2,848 | 1 |
| 27 | 53 | 40 | 49 | 0.00 | 3.5 | 145,600 | 4,837 | - | 62 | 4,899 | 1 |
| 28 | 58 | 41 | 49 | 0.04 | 3.3 | 148,100 | 3,403 | - | 47 | 3,450 | - |
| 29 | 49 | 42 | 49 | 0.29 | 3.5 | 152,100 | 2,343 | - | 35 | 2,378 | - |
| 30 | 61 | 44 | 49 | 0.03 | 3.4 | 149,100 | 3,260 | - | 53 | 3,313 | - |
| | | | | <u>7.41</u> | | | <u>78,605</u> | <u>5</u> | <u>1,267</u> | <u>79,877</u> | <u>2</u> |

TABLE 7
 CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - MAY 1970
 BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | Shad |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|---------|------------|----------------|------|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Steel-head | Total Salmonid | |
| | Max. | Min. | | | | | | | | | |
| 1 | 66 | 39 | 49 | 0.00 | 3.5 | 154,600 | 5,047 | 8 | 106 | 5,161 | 1 |
| 2 | 74 | 41 | 49 | 0.00 | 3.0 | 155,100 | 3,096 | 4 | 89 | 3,189 | 3 |
| 3 | 82 | 45 | 51 | 0.00 | 3.0 | 144,200 | 4,284 | 12 | 82 | 4,378 | - |
| 4 | 69 | 49 | 52 | 0.00 | 3.3 | 151,700 | 2,428 | 2 | 54 | 2,484 | 2 |
| 5 | 68 | 43 | 52 | 0.00 | 3.3 | 139,200 | 2,370 | 3 | 56 | 2,429 | - |
| 6 | 68 | 43 | 52 | 0.00 | 2.8 | 185,800 | 1,953 | 4 | 40 | 1,997 | 1 |
| 7 | 62 | 44 | 52 | 0.00 | 2.7 | 202,000 | 633 | 1 | 19 | 653 | - |
| 8 | 60 | 42 | 52 | 0.50 | 2.8 | 190,600 | 575 | 4 | 20 | 599 | - |
| 9 | 54 | 40 | 52 | 0.80 | 2.7 | 194,900 | 569 | 2 | 27 | 598 | 1 |
| 10 | 51 | 35 | 52 | 0.25 | 2.7 | 195,500 | 655 | - | 24 | 679 | - |
| 11 | 61 | 38 | 53 | 0.30 | 2.8 | 182,000 | 664 | - | 27 | 691 | 2 |
| 12 | 59 | 37 | 53 | 0.03 | 2.7 | 177,300 | 1,098 | 4 | 32 | 1,134 | - |
| 13 | 64 | 40 | 53 | 0.00 | 2.8 | 193,100 | 701 | 2 | 33 | 736 | - |
| 14 | 77 | 44 | 53 | 0.00 | 2.8 | 173,300 | 964 | 6 | 26 | 996 | - |
| 15 | 88 | 47 | 53 | 0.00 | 2.8 | 181,500 | 1,072 | 8 | 55 | 1,135 | 1 |
| 16 | 78 | 47 | 55 | 0.00 | 2.8 | 215,100 | 738 | 11 | 38 | 787 | 1 |
| 17 | 68 | 40 | 56 | 0.00 | 3.0 | 217,100 | 411 | 12 | 41 | 464 | - |
| 18 | 70 | 41 | 56 | 0.00 | 3.0 | 256,900 | 370 | 18 | 53 | 441 | 2 |
| 19 | 59 | 47 | 56 | 0.00 | 3.0 | 302,600 | 275 | 1 | 35 | 311 | - |
| 20 | 64 | 40 | 56 | 0.00 | 2.9 | 321,300 | 277 | 8 | 60 | 345 | - |
| 21 | 71 | 45 | 56 | Trace | 2.9 | 342,200 | 241 | 8 | 40 | 289 | - |
| 22 | 68 | 48 | 56 | 0.01 | 3.1 | 351,200 | 259 | 12 | 42 | 313 | 17 |
| 23 | 69 | 47 | 57 | 0.00 | 2.7 | 365,700 | 197 | 10 | 42 | 249 | 12 |
| 24 | 87 | 50 | 58 | 0.00 | 1.8 | 378,300 | 236 | 16 | 42 | 294 | 13 |
| 25 | 84 | 49 | 58 | 0.00 | 1.7 | 400,900 | 241 | 33 | 33 | 307 | 16 |
| 26 | 68 | 49 | 59 | 0.00 | 1.7 | 412,900 | 120 | 22 | 18 | 160 | 15 |
| 27 | 61 | 46 | 58 | 0.00 | 1.6 | 414,000 | 158 | 10 | 22 | 190 | 16 |
| 28 | 65 | 49 | 58 | 0.36 | 1.9 | 415,000 | 151 | 8 | 30 | 189 | 43 |
| 29 | 65 | 48 | 58 | 0.54 | 2.2 | 409,700 | 155 | 12 | 36 | 203 | 31 |
| 30 | 71 | 50 | 58 | 0.00 | 2.0 | 398,400 | 183 | 9 | 57 | 249 | 32 |
| 31 | 84 | 55 | 58 | 0.00 | 2.0 | 391,000 | 230 | 19 | 52 | 301 | 41 |
| | | | | 2.79 | | | 30,351 | 269 | 1,331 | 31,951 | 250 |

TABLE 7

TABLE 8
CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - JUNE 1970
BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | | Shad |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|---------|------|------------|----------------|---------|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | |
| | Max. | Min. | | | | | | | | | | |
| 1 | 89 | 58 | 58 | 0.00 | 2.0 | 390,400 | 288 | 15 | - | 80 | 383 | 113 |
| 2 | 96 | 62 | 58 | 0.00 | 2.4 | 395,700 | 245 | 21 | - | 63 | 329 | 151 |
| 3 | 76 | 54 | 59 | 0.00 | 2.1 | 397,800 | 369 | 26 | - | 71 | 466 | 295 |
| 4 | 72 | 50 | 59 | 0.00 | 2.2 | 393,400 | 525 | 32 | - | 72 | 629 | 201 |
| 5 | 95 | 56 | 59 | 0.00 | 2.2 | 394,400 | 645 | 36 | - | 85 | 766 | 437 |
| 6 | 89 | 53 | 60 | 0.00 | 2.2 | 393,100 | 797 | 52 | - | 100 | 949 | 1,248 |
| 7 | 71 | 49 | 60 | 0.00 | 2.2 | 393,800 | 1,001 | 33 | - | 90 | 1,124 | 907 |
| 8 | 62 | 49 | 60 | 0.45 | 2.2 | 395,200 | 1,329 | 28 | - | 66 | 1,423 | 1,484 |
| 9 | 65 | 49 | 60 | 0.46 | 2.2 | 391,000 | 1,136 | 23 | - | 60 | 1,219 | 743 |
| 10 | 63 | 50 | 60 | Trace | 2.2 | 382,900 | 1,621 | 33 | - | 76 | 1,730 | 1,778 |
| 11 | 63 | 47 | 60 | Trace | 2.2 | 366,500 | 1,184 | 27 | - | 96 | 1,307 | 2,841 |
| 12 | 73 | 49 | 60 | 0.02 | 2.2 | 341,300 | 1,154 | 116 | - | 110 | 1,380 | 3,294 |
| 13 | 65 | 55 | 60 | Trace | 2.2 | 328,500 | 1,488 | 178 | - | 140 | 1,806 | 7,045 |
| 14 | 63 | 53 | 60 | 0.02 | 2.2 | 319,600 | 1,755 | 275 | - | 143 | 2,173 | 7,485 |
| 15 | 61 | 52 | 60 | 0.03 | 2.2 | 301,800 | 780 | 252 | - | 122 | 1,154 | 7,560 |
| 16 | 66 | 45 | 60 | 0.00 | 2.2 | 310,900 | 1,176 | 371 | - | 130 | 1,677 | 2,225 |
| 17 | 82 | 49 | 60 | 0.00 | 2.1 | 331,300 | 746 | 255 | - | 126 | 1,127 | 1,971 |
| 18 | 84 | 54 | 59 | 0.00 | 2.2 | 330,900 | 821 | 681 | - | 268 | 1,770 | 8,448 |
| 19 | 86 | 55 | 60 | 0.00 | 2.1 | 327,900 | 1,141 | 846 | 1 | 224 | 2,212 | 12,754 |
| 20 | 94 | 60 | 61 | 0.00 | 2.1 | 331,900 | 1,136 | 895 | - | 190 | 2,221 | 25,364 |
| 21 | 83 | 57 | 61 | 0.00 | 2.2 | 331,600 | 1,669 | 1,266 | - | 250 | 3,185 | 25,411 |
| 22 | 83 | 53 | 61 | 0.00 | 2.5 | 327,000 | 1,933 | 1,234 | - | 234 | 3,401 | 15,939 |
| 23 | 83 | 53 | 62 | 0.00 | 2.5 | 320,400 | 1,873 | 2,633 | - | 222 | 4,728 | 14,994 |
| 24 | 85 | 50 | 64 | 0.00 | 3.0 | 320,100 | 1,938 | 2,417 | - | 226 | 4,581 | 11,165 |
| 25 | 88 | 60 | 63 | 0.00 | 3.0 | 314,300 | 1,643 | 2,166 | - | 233 | 4,042 | 21,453 |
| 26 | 85 | 56 | 64 | 0.00 | 2.8 | 290,200 | 1,622 | 1,741 | - | 183 | 3,546 | 25,537 |
| 27 | 65 | 51 | 64 | 0.00 | 2.9 | 290,300 | 1,644 | 1,902 | - | 139 | 3,685 | 8,903 |
| 28 | 64 | 50 | 64 | 0.03 | 2.9 | 261,600 | 1,561 | 1,615 | 1 | 165 | 3,342 | 8,670 |
| 29 | 63 | 50 | 64 | 0.23 | 2.9 | 246,400 | 1,084 | 1,821 | - | 137 | 3,042 | 5,057 |
| 30 | 64 | 51 | 63 | 0.03 | 2.8 | 248,000 | 787 | 1,987 | - | 107 | 2,881 | 5,046 |
| | | | | 1.27 | | | 35,091 | 22,977 | 2 | 4,208 | 62,278 | 228,519 |

TABLE 9
CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - JULY 1970
BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | | | Shad |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|---------|------|------|------------|----------------|--------|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Coho | Pink | Steel-head | Total Salmonid | |
| | Max. | Min. | | | | | | | | | | | |
| 1 | 77 | 55 | 63 | 0.03 | 2.9 | 256,700 | 636 | 1,668 | - | - | 147 | 2,451 | 18,613 |
| 2 | 98 | 62 | 64 | 0.00 | 3.1 | 249,300 | 1,646 | 2,387 | 2 | - | 328 | 4,363 | 20,704 |
| 3 | 98 | 62 | 66 | 0.00 | 2.6 | 249,300 | 1,848 | 3,456 | - | - | 291 | 5,595 | 10,607 |
| 4 | 84 | 54 | 66 | 0.03 | 2.6 | 243,700 | 1,810 | 3,470 | 3 | - | 337 | 5,620 | 6,860 |
| 5 | 80 | 52 | 66 | 0.03 | 3.3 | 228,100 | 1,580 | 3,498 | 7 | - | 431 | 5,516 | 5,546 |
| 6 | 78 | 54 | 66 | 0.00 | 3.3 | 204,400 | 1,173 | 2,994 | 2 | - | 366 | 4,535 | 4,125 |
| 7 | 83 | 59 | 66 | 0.00 | 3.4 | 191,500 | 1,197 | 2,583 | 3 | - | 450 | 4,233 | 2,540 |
| 8 | 85 | 54 | 66 | 0.00 | 3.4 | 186,500 | 1,245 | 2,798 | 3 | - | 551 | 4,597 | 4,702 |
| 9 | 82 | 56 | 67 | 0.00 | 3.4 | 194,700 | 918 | 2,102 | 1 | - | 592 | 3,613 | 3,371 |
| 10 | 82 | 56 | 67 | 0.00 | 3.5 | 220,200 | 1,143 | 2,192 | 4 | - | 689 | 4,028 | 2,177 |
| 11 | 81 | 56 | 68 | 0.00 | 3.5 | 191,400 | 932 | 1,617 | - | - | 700 | 3,249 | 1,924 |
| 12 | 79 | 52 | 67 | 0.00 | 3.5 | 156,300 | 1,083 | 1,905 | 10 | - | 1,024 | 4,022 | 3,717 |
| 13 | 80 | 53 | 67 | 0.00 | 3.5 | 154,500 | 949 | 2,167 | 9 | - | 1,041 | 4,166 | 4,307 |
| 14 | 95 | 60 | 67 | 0.00 | 3.8 | 172,700 | 856 | 2,422 | 7 | - | 985 | 4,270 | 2,120 |
| 15 | 97 | 60 | 69 | 0.00 | 4.5 | 180,400 | 840 | 1,917 | 3 | - | 927 | 3,687 | 2,024 |
| 16 | 67 | 57 | 68 | 0.00 | 3.6 | 175,300 | 856 | 1,305 | 1 | - | 886 | 3,048 | 1,438 |
| 17 | 82 | 55 | 68 | 0.00 | 4.0 | 190,300 | 944 | 1,118 | 5 | - | 1,382 | 3,449 | 844 |
| 18 | 87 | 60 | 70 | 0.00 | 3.5 | 189,100 | 825 | 968 | 3 | - | 940 | 2,736 | 593 |
| 19 | 85 | 60 | 70 | 0.00 | 3.8 | 142,600 | 767 | 630 | 2 | - | 629 | 2,028 | 714 |
| 20 | 81 | 53 | 70 | 0.00 | 3.8 | 160,500 | 741 | 740 | 1 | - | 1,054 | 2,536 | 925 |
| 21 | 71 | 52 | 70 | 0.00 | 3.4 | 167,700 | 817 | 711 | 3 | - | 647 | 2,178 | 501 |
| 22 | 74 | 48 | 70 | 0.00 | 4.2 | 175,300 | 613 | 498 | 5 | - | 736 | 1,852 | 254 |
| 23 | 81 | 52 | 70 | 0.00 | 4.1 | 145,800 | 673 | 505 | 1 | - | 1,257 | 2,436 | 298 |
| 24 | 78 | 57 | 70 | 0.00 | 4.2 | 152,300 | 517 | 356 | 3 | - | 1,543 | 2,419 | 160 |
| 25 | 68 | 55 | 70 | 0.03 | 3.6 | 132,700 | 502 | 348 | 5 | - | 1,004 | 1,859 | 182 |
| 26 | 67 | 58 | 68 | 0.30 | 4.3 | 99,800 | 722 | 324 | 8 | - | 1,446 | 2,500 | 106 |
| 27 | 69 | 55 | 67 | 0.01 | 5.0 | 130,600 | 968 | 361 | 12 | 1 | 1,851 | 3,193 | 93 |
| 28 | 74 | 56 | 70 | 0.00 | 4.5 | 141,700 | 858 | 239 | 4 | - | 1,950 | 3,051 | 51 |
| 29 | 75 | 53 | 69 | 0.00 | 4.0 | 142,300 | 742 | 270 | 3 | - | 2,935 | 3,950 | 45 |
| 30 | 78 | 50 | 69 | 0.00 | 4.5 | 140,000 | 790 | 346 | 6 | - | 2,763 | 3,905 | 59 |
| 31 | 83 | 51 | 69 | 0.00 | 4.5 | 139,700 | 620 | 167 | 12 | - | 984 | 1,783 | 59 |
| | | | | 0.43 | | | 29,811 | 46,062 | 128 | 1 | 30,866 | 106,868 | 99,659 |

TABLE 9

TABLE 10
CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - AUGUST 1970
BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | | | | Shad | |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|---------|-------|-------|------------|--------|----------------|--------|-----|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Coho | Chum | Steel-head | Pink | Total Salmonid | | |
| | Max. | Min. | | | | | | | | | | | | | |
| 1 | 73 | 57 | 70 | 0.00 | 4.5 | 138,400 | 829 | 125 | 4 | - | 1,479 | - | 2,437 | 66 | |
| 2 | 74 | 50 | 70 | 0.00 | 4.5 | 92,100 | 760 | 120 | 18 | - | 2,097 | - | 2,995 | 49 | |
| 3 | 82 | 51 | 69 | 0.00 | 5.5 | 130,700 | 798 | 153 | 18 | - | 1,666 | - | 2,635 | 37 | |
| 4 | 69 | 55 | 69 | 0.00 | 5.5 | 163,300 | 1,054 | 68 | 18 | - | 2,114 | - | 3,254 | 41 | |
| 5 | 81 | 56 | 70 | 0.00 | 5.5 | 153,000 | 926 | 72 | 19 | - | 2,986 | - | 4,003 | 47 | |
| 6 | 82 | 57 | 70 | 0.00 | 5.1 | 155,100 | 699 | 75 | 19 | - | 1,416 | - | 2,209 | 18 | |
| 7 | 75 | 55 | 71 | 0.00 | 5.1 | 162,800 | 1,236 | 77 | 16 | - | 2,783 | - | 4,112 | 27 | |
| 8 | 75 | 52 | 71 | 0.00 | 5.1 | 132,900 | 726 | 61 | 11 | - | 785 | - | 1,583 | 20 | |
| 9 | 85 | 52 | 71 | 0.00 | 5.1 | 96,700 | 1,153 | 38 | 24 | - | 1,188 | - | 2,403 | 24 | |
| 10 | 94 | 54 | 71 | 0.00 | 5.1 | 131,500 | 1,429 | 49 | 31 | - | 2,331 | - | 3,840 | 9 | |
| 11 | 94 | 55 | 69 | 0.00 | 5.1 | 159,000 | 867 | 30 | 18 | - | 1,555 | - | 2,470 | 15 | |
| 12 | 87 | 53 | 70 | 0.00 | 5.3 | 165,200 | 938 | 29 | 29 | - | 1,567 | - | 2,563 | 17 | |
| 13 | 75 | 53 | 70 | 0.00 | 5.2 | 145,900 | 944 | 16 | 77 | - | 1,591 | - | 2,628 | 24 | |
| 14 | 88 | 53 | 70 | 0.00 | 5.2 | 151,600 | 658 | 11 | 101 | - | 1,236 | - | 2,006 | 18 | |
| 15 | 96 | 55 | 70 | 0.00 | 5.2 | 126,700 | 614 | 12 | 203 | - | 1,605 | - | 2,434 | 22 | |
| 16 | 75 | 51 | 70 | 0.00 | 5.5 | 73,100 | 673 | 8 | 179 | - | 1,821 | - | 2,681 | 16 | |
| 17 | 75 | 51 | 70 | 0.00 | 5.6 | 117,000 | 1,563 | 23 | 424 | 2 | 2,093 | - | 4,105 | 16 | |
| 18 | 80 | 50 | 70 | 0.00 | 5.6 | 122,600 | 2,033 | 14 | 323 | - | 2,378 | - | 4,748 | 7 | |
| 19 | 82 | 50 | 70 | 0.00 | 5.7 | 134,400 | 1,802 | 19 | 191 | 1 | 1,298 | - | 3,311 | 7 | |
| 20 | 74 | 54 | 69 | 0.00 | 5.6 | 124,200 | 1,293 | 18 | 139 | - | 1,098 | - | 2,548 | 15 | |
| 21 | 82 | 56 | 70 | 0.00 | 5.9 | 121,700 | 1,019 | 14 | 132 | - | 911 | - | 2,076 | 8 | |
| 22 | 87 | 57 | 69 | 0.00 | 6.0 | 122,900 | 1,587 | 15 | 243 | - | 1,041 | - | 2,886 | 9 | |
| 23 | 80 | 57 | 70 | 0.00 | 6.1 | 93,600 | 2,390 | 4 | 284 | - | 1,071 | - | 3,749 | 6 | |
| 24 | 69 | 57 | 70 | 0.00 | 6.0 | 127,400 | 2,206 | 12 | 346 | - | 1,039 | - | 3,603 | 13 | |
| 25 | 72 | 52 | 70 | 0.00 | 6.0 | 125,500 | 2,136 | 20 | 374 | - | 1,041 | - | 3,571 | 7 | |
| 26 | 80 | 53 | 70 | 0.00 | 6.2 | 115,900 | 1,861 | 11 | 490 | - | 1,010 | - | 3,372 | 9 | |
| 27 | 77 | 55 | 70 | 0.00 | 6.1 | 121,500 | 1,717 | 15 | 388 | 1 | 909 | 2 | 3,032 | 5 | |
| 28 | 79 | 53 | 70 | 0.00 | 6.0 | 105,800 | 1,859 | 7 | 354 | - | 847 | - | 3,067 | 4 | |
| 29 | 84 | 57 | 70 | 0.00 | 6.2 | 103,800 | 2,729 | 8 | 699 | 1 | 1,027 | 2 | 4,466 | 2 | |
| 30 | 89 | 56 | 70 | 0.00 | 6.2 | 74,700 | 3,053 | 6 | 706 | 1 | 1,085 | 1 | 4,852 | 4 | |
| 31 | 74 | 57 | 70 | 0.00 | 6.2 | 109,600 | 3,007 | 17 | 726 | - | 1,239 | 2 | 4,991 | 4 | |
| | | | | 0.00 | | | 44,559 | | 1,147 | 6,604 | 6 | 46,307 | 7 | 98,630 | 566 |

TABLE 11

CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - SEPTEMBER 1970

BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | | | | Shad | |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|---------|-------|--------|------------|--------|----------------|---------|-----|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Coho | Chum | Steel-head | Pink | Total Salmonid | | |
| | Max. | Min. | | | | | | | | | | | | | |
| 1 | 69 | 55 | 70 | 0.00 | 6.4 | 122,600 | 2,080 | 12 | 369 | - | 878 | 1 | 3,340 | 1 | |
| 2 | 71 | 56 | 70 | 0.08 | 6.0 | 124,400 | 2,647 | 31 | 733 | 1 | 896 | 2 | 4,310 | 13 | |
| 3 | 61 | 52 | 70 | 0.56 | 6.0 | 113,200 | 3,370 | 14 | 1,091 | - | 949 | - | 5,424 | 16 | |
| 4 | 66 | 53 | 69 | 0.36 | 6.0 | 108,300 | 3,785 | 26 | 1,481 | 1 | 1,382 | - | 6,675 | 9 | |
| 5 | 62 | 52 | 69 | 0.14 | 6.0 | 72,400 | 5,780 | 24 | 2,084 | - | 1,316 | 3 | 9,207 | 12 | |
| 6 | 65 | 57 | 68 | 1.25 | 6.0 | 71,800 | 9,825 | 39 | 4,904 | 2 | 1,993 | 1 | 16,764 | 9 | |
| 7 | 64 | 52 | 68 | 0.00 | 5.5 | 112,000 | 15,838 | 38 | 7,618 | 2 | 2,659 | 5 | 26,160 | 18 | |
| 8 | 67 | 47 | 66 | 0.00 | 5.5 | 119,800 | 11,141 | 26 | 5,653 | 1 | 2,284 | 8 | 19,113 | 16 | |
| 9 | 76 | 52 | 68 | 0.00 | 5.5 | 112,700 | 8,390 | 11 | 6,076 | - | 2,223 | 5 | 16,705 | 4 | |
| 10 | 78 | 52 | 66 | 0.00 | 5.0 | 113,100 | 16,286 | 5 | 7,693 | 1 | 2,617 | 10 | 26,612 | 8 | |
| 11 | 75 | 52 | 66 | 0.00 | 5.5 | 108,300 | 19,363 | 13 | 8,576 | 7 | 2,212 | 15 | 30,186 | 16 | |
| 12 | 66 | 42 | 66 | 0.00 | 5.0 | 116,800 | 15,406 | 8 | 5,653 | 4 | 1,788 | 10 | 22,869 | 20 | |
| 13 | 68 | 41 | 66 | 0.00 | 4.5 | 82,100 | 11,679 | 10 | 3,520 | 7 | 1,322 | 10 | 16,548 | 22 | |
| 14 | 68 | 41 | 66 | 0.00 | 5.5 | 116,400 | 9,162 | 9 | 2,872 | 2 | 1,002 | 12 | 13,059 | 24 | |
| 15 | 75 | 43 | 66 | 0.00 | 5.4 | 123,200 | 6,644 | 4 | 2,779 | 6 | 744 | 14 | 10,191 | 9 | |
| 16 | 77 | 50 | 66 | 0.00 | 5.4 | 122,100 | 4,056 | 2 | 1,904 | 2 | 552 | 4 | 6,520 | 10 | |
| 17 | 75 | 52 | 65 | 0.00 | 5.4 | 120,900 | 3,656 | 2 | 2,119 | 1 | 449 | 8 | 6,235 | 5 | |
| 18 | 65 | 52 | 64 | 0.15 | 5.2 | 113,500 | 2,266 | 1 | 1,217 | 5 | 339 | 3 | 3,831 | 3 | |
| 19 | 65 | 46 | 65 | 0.50 | 5.0 | 94,800 | 1,547 | 2 | 777 | 2 | 231 | 5 | 2,564 | 3 | |
| 20 | 60 | 49 | 65 | 0.25 | 5.0 | 88,300 | 1,221 | 2 | 557 | 2 | 159 | 2 | 1,943 | 6 | |
| 21 | 68 | 58 | 65 | Trace | 5.5 | 113,000 | 837 | 1 | 386 | - | 123 | 1 | 1,348 | 2 | |
| 22 | 62 | 49 | 64 | 0.80 | 5.2 | 123,100 | 533 | - | 241 | - | 80 | - | 854 | 8 | |
| 23 | 60 | 38 | 64 | 0.00 | 5.3 | 111,600 | 646 | 2 | 344 | 2 | 134 | 1 | 1,129 | 8 | |
| 24 | 66 | 38 | 62 | 0.00 | 5.2 | 120,500 | 577 | 2 | 243 | - | 99 | 1 | 922 | 8 | |
| 25 | 71 | 48 | 62 | 0.00 | 5.3 | 109,200 | 551 | - | 221 | 3 | 80 | - | 855 | 1 | |
| 26 | 76 | 55 | 61 | 0.00 | 5.3 | 98,900 | 484 | 1 | 250 | 2 | 100 | - | 837 | 1 | |
| 27 | 80 | 55 | 60 | 0.00 | 5.3 | 93,600 | 437 | 3 | 279 | 6 | 68 | - | 793 | 3 | |
| 28 | 83 | 52 | 60 | 0.00 | 5.4 | 110,300 | 471 | - | 336 | 3 | 79 | - | 889 | 4 | |
| 29 | 78 | 46 | 61 | 0.00 | 5.5 | 97,600 | 531 | - | 370 | 2 | 112 | 4 | 1,019 | 2 | |
| 30 | 69 | 47 | 61 | 0.00 | 5.3 | 105,400 | 501 | 2 | 285 | - | 203 | - | 991 | 1 | |
| | | | | 4.09 | | | | 159,710 | 290 | 70,631 | 64 | 27,073 | 125 | 257,893 | 262 |

TABLE 11

TABLE 12
CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT DATA - OCTOBER 1970
BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | | | | Shad |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|---------|-------|------|------------|------|----------------|------|
| | Air | | Water | | Turbidity | Flow | Chinook | Sockeye | Coho | Chum | Steel-head | Pink | Total Salmonid | |
| | Max. | Min. | | | | | | | | | | | | |
| 1 | 72 | 46 | 62 | 0.00 | 5.3 | 115,500 | 475 | 1 | 254 | - | 187 | 2 | 919 | 1 |
| 2 | 84 | 56 | 62 | 0.00 | 5.2 | 120,000 | 226 | - | 160 | - | 49 | - | 435 | 4 |
| 3 | 80 | 53 | 62 | 0.00 | 5.2 | 83,300 | 220 | 3 | 131 | 6 | 124 | 1 | 485 | 1 |
| 4 | 65 | 50 | 62 | 0.28 | 5.2 | 86,300 | 235 | 1 | 141 | 7 | 91 | 1 | 476 | 1 |
| 5 | 59 | 43 | 62 | 0.38 | 5.2 | 113,000 | 218 | - | 113 | 2 | 34 | - | 367 | 3 |
| 6 | 52 | 35 | 63 | Trace | 5.5 | 123,900 | 272 | - | 123 | - | 56 | - | 451 | - |
| 7 | 61 | 36 | 60 | 0.00 | 5.2 | 126,100 | 222 | 2 | 214 | - | 56 | 2 | 496 | - |
| 8 | 59 | 51 | 60 | 0.02 | 6.0 | 124,700 | 178 | 1 | 116 | 6 | 35 | - | 336 | - |
| 9 | 58 | 47 | 60 | 0.22 | 6.0 | 123,600 | 201 | - | 105 | 1 | 50 | - | 357 | - |
| 10 | 64 | 46 | 60 | 0.01 | 6.2 | 88,200 | 189 | 1 | 103 | 1 | 48 | 2 | 344 | 1 |
| 11 | 62 | 43 | 60 | Trace | 5.6 | 89,900 | 176 | 1 | 128 | 1 | 38 | 1 | 345 | - |
| 12 | 61 | 38 | 60 | 0.00 | 5.6 | 96,500 | 176 | - | 118 | - | 29 | 2 | 325 | 1 |
| 13 | 67 | 53 | 60 | 0.00 | 5.6 | 107,800 | 150 | - | 80 | - | 23 | - | 253 | - |
| 14 | 67 | 42 | 60 | 0.00 | 5.6 | 109,500 | 138 | - | 66 | 2 | 21 | - | 227 | - |
| 15 | 66 | 45 | 59 | 0.00 | 5.7 | 105,600 | 84 | - | 54 | 4 | 16 | - | 158 | 4 |
| 16 | 68 | 48 | 58 | 0.00 | 5.7 | 120,900 | 91 | 1 | 44 | 5 | 27 | - | 168 | - |
| 17 | 65 | 51 | 58 | 0.23 | 5.6 | 136,200 | 106 | - | 51 | - | 31 | - | 188 | - |
| 18 | 60 | 47 | 58 | 0.03 | 5.4 | 89,900 | 100 | - | 60 | 1 | 29 | 1 | 191 | - |
| 19 | 55 | 49 | 59 | 0.47 | 4.5 | 116,500 | 94 | - | 73 | 2 | 34 | - | 203 | - |
| 20 | 56 | 45 | 58 | 0.78 | 4.5 | 139,500 | 114 | - | 83 | 1 | 140 | - | 338 | - |
| 21 | 51 | 47 | 58 | 0.76 | 4.5 | 138,800 | 158 | - | 137 | 1 | 206 | 3 | 505 | - |
| 22 | 52 | 49 | 58 | 1.29 | 5.1 | 130,000 | 125 | 1 | 56 | 2 | 175 | 1 | 360 | - |
| 23 | 55 | 42 | 58 | 0.75 | 4.5 | 125,900 | 123 | - | 51 | 11 | 123 | - | 308 | - |
| 24 | 49 | 41 | 58 | 0.60 | 4.5 | 91,100 | 95 | - | 43 | 4 | 181 | - | 323 | - |
| 25 | 47 | 39 | 58 | 0.10 | 4.5 | 84,900 | 55 | - | 32 | 5 | 29 | - | 121 | - |
| 26 | 54 | 34 | 58 | 0.00 | 5.0 | 111,800 | 23 | - | 22 | 3 | 8 | - | 56 | - |
| 27 | 56 | 35 | 56 | 0.00 | 5.0 | 160,600 | 19 | - | 20 | 2 | 21 | - | 62 | 2 |
| 28 | 57 | 37 | 56 | 0.00 | 3.8 | 148,900 | 30 | - | 19 | 5 | 8 | - | 62 | - |
| 29 | 57 | 38 | 55 | 0.00 | 3.5 | 122,900 | 25 | - | 10 | 1 | 10 | - | 46 | - |
| 30 | 60 | 40 | 55 | 0.00 | 3.4 | 114,900 | 23 | - | 12 | 1 | 11 | - | 47 | - |
| 31 | 62 | 43 | 55 | 0.00 | 3.4 | 88,400 | 23 | - | 12 | 1 | 19 | - | 55 | 1 |
| | | | | 5.92 | | | 4,364 | 12 | 2,631 | 75 | 1,909 | 16 | 9,007 | 19 |

TABLE 13

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNT DATA - NOVEMBER 1970

BONNEVILLE DAM

| Date | Temperature | | | Precipitation | River | | Salmonid Fish Count | | | | | |
|------|-------------|------|-------|---------------|-----------|---------|---------------------|------|------|------------|------|-------|
| | Air | | Water | | Turbidity | Flow | Chinook | Coho | Chum | Steel-head | Pink | Total |
| | Max. | Min. | | | | | | | | | | |
| 1 | 62 | 43 | 55 | 0.00 | 3.2 | 80,400 | 16 | 7 | - | 9 | - | 32 |
| 2 | 69 | 41 | 55 | 0.00 | 3.4 | 120,800 | 20 | 9 | - | 6 | - | 35 |
| 3 | 59 | 46 | 55 | 0.00 | 3.2 | 120,000 | 23 | 8 | 1 | 9 | - | 41 |
| 4 | 54 | 42 | 53 | 0.26 | 3.2 | 106,700 | 20 | 10 | 1 | 10 | - | 41 |
| 5 | 49 | 45 | 53 | 0.37 | 3.7 | 120,200 | 16 | 3 | 4 | 11 | 1 | 35 |
| 6 | 54 | 45 | 54 | 0.36 | 4.1 | 138,900 | 8 | 8 | 1 | 10 | - | 27 |
| 7 | 53 | 46 | 54 | 0.63 | 4.6 | 102,100 | 5 | 5 | 3 | 8 | - | 21 |
| 8 | 55 | 48 | 54 | 0.52 | 4.2 | 104,400 | 14 | 3 | 3 | 9 | - | 29 |
| 9 | 56 | 39 | 54 | 0.01 | * | 122,100 | 11 | 7 | 1 | 3 | - | 22 |
| 10 | 50 | 40 | 54 | 0.93 | 4.9 | 128,000 | 11 | 8 | 1 | 19 | - | 39 |
| 11 | 51 | 44 | 53 | 1.16 | 4.9 | 123,600 | 9 | 4 | 7 | 7 | - | 27 |
| 12 | 53 | 36 | 53 | 0.03 | 4.7 | 115,800 | 22 | 10 | 6 | 29 | - | 67 |
| 13 | 54 | 38 | 52 | 0.00 | 5.0 | 122,500 | 5 | 6 | 2 | 12 | - | 25 |
| 14 | 50 | 39 | 52 | 0.00 | 4.7 | 107,300 | 9 | 5 | 4 | 18 | - | 36 |
| 15 | 60 | 41 | 52 | 1.39 | 5.0 | 81,400 | 6 | 4 | 4 | 10 | - | 24 |
| 16 | 56 | 41 | 51 | 0.13 | 4.5 | 135,100 | 17 | 4 | 5 | 16 | - | 42 |
| 17 | 51 | 42 | 52 | 1.08 | 5.0 | 130,300 | 14 | 5 | 4 | 29 | - | 52 |
| 18 | 52 | 46 | 51 | 0.29 | 5.1 | 130,300 | 11 | 4 | 4 | 27 | - | 46 |
| 19 | 50 | 43 | 51 | 0.35 | 5.0 | 137,100 | 11 | 8 | 9 | 22 | - | 50 |
| 20 | 49 | 34 | 51 | 0.41 | 5.0 | 139,000 | 9 | - | 4 | 21 | - | 34 |
| *21 | 42 | 28 | 51 | 0.00 | 5.0 | 123,100 | 12 | 2 | - | 20 | - | 34 |
| 22 | 30 | 23 | 50 | 0.30 | 4.5 | 108,300 | | | | | | |
| 23 | 37 | 25 | 47 | 2.20 | 4.5 | 122,100 | | | | | | |
| 24 | 61 | 35 | 46 | 1.76 | 4.5 | 127,000 | | | | | | |
| 25 | 43 | 35 | 47 | 0.51 | 4.4 | 138,800 | | | | | | |
| 26 | 39 | 32 | 47 | 1.30 | 4.2 | 139,800 | | | | | | |
| 27 | 43 | 32 | 47 | 0.25 | 4.2 | 140,400 | | | | | | |
| 28 | 44 | 35 | 48 | Trace | 3.9 | 110,200 | | | | | | |
| 29 | 42 | 37 | 47 | 0.25 | 5.0 | 97,700 | | | | | | |
| 30 | 42 | 35 | 47 | 0.71 | 5.0 | 132,600 | | | | | | |
| | | | | 15.20 | | | 269 | 120 | 64 | 305 | 1 | 759 |

TABLE 13

* Fish count discontinued COB 11/21/70

TABLE 14

CLIMATOLOGICAL AND STREAM FLOW - DECEMBER 1970

BONNEVILLE DAM

| Date | T e m p e r a t u r e | | | R i v e r | | |
|------|-----------------------|------|-------|---------------|-----------|---------|
| | A i r | | Water | Precipitation | Turbidity | Flow |
| | Max. | Min. | | | | |
| 1 | 40 | 34 | 47 | 0.50 | 5.0 | 155,100 |
| 2 | 44 | 31 | 47 | 1.13 | 5.2 | 142,300 |
| 3 | 42 | 31 | 47 | 0.53 | 5.2 | 140,100 |
| 4 | 44 | 34 | 47 | 1.13 | 5.2 | 134,900 |
| 5 | 42 | 35 | 46 | 0.67 | 5.2 | 112,400 |
| 6 | 49 | 40 | 47 | 1.50 | 5.2 | 138,900 |
| 7 | 52 | 36 | 47 | 0.35 | 5.2 | 150,000 |
| 8 | 53 | 38 | 46 | 0.03 | 5.0 | 144,000 |
| 9 | 47 | 38 | 45 | 0.05 | 5.2 | 138,300 |
| 10 | 50 | 38 | 45 | 0.85 | 5.3 | 139,700 |
| 11 | 47 | 32 | 45 | 0.00 | 5.5 | 140,400 |
| 12 | 45 | 33 | 44 | 0.00 | 5.5 | 140,100 |
| 13 | 38 | 32 | 44 | 0.10 | 5.5 | 125,600 |
| 14 | 46 | 32 | 43 | 1.00 | 5.8 | 142,900 |
| 15 | 47 | 36 | 43 | 0.47 | 5.5 | 150,400 |
| 16 | 49 | 35 | 47 | 0.19 | 5.8 | 148,600 |
| 17 | 44 | 31 | 44 | 0.00 | 5.5 | 133,400 |
| 18 | 40 | 25 | 44 | 0.00 | 5.0 | 114,700 |
| 19 | 37 | 23 | 43 | 0.34 | 5.1 | 128,000 |
| 20 | 38 | 31 | 43 | 0.29 | 5.0 | 134,900 |
| 21 | 41 | 31 | 43 | Trace | 5.0 | 130,800 |
| 22 | 37 | 32 | 42 | Trace | 7.0 | 144,800 |
| 23 | 41 | 32 | 42 | 0.05 | 7.0 | 126,600 |
| 24 | 42 | 36 | 42 | 0.05 | 6.0 | 139,300 |
| 25 | 41 | 31 | 42 | 0.00 | 6.0 | 112,500 |
| 26 | 33 | 28 | 41 | 0.20 | 6.0 | 102,600 |
| 27 | 35 | 29 | 41 | 0.73 | 6.0 | 101,500 |
| 28 | 43 | 33 | 41 | 1.00 | 7.0 | 122,000 |
| 29 | 50 | 34 | 41 | 0.75 | 7.0 | 137,100 |
| 30 | 55 | 38 | 41 | 1.75 | 7.0 | 137,400 |
| 31 | 41 | 28 | 41 | 0.20 | 5.9 | 139,200 |
| | Total for December | | | 13.81 | | |
| | Annual Total | | | 86.05 | | |

TABLE 14

TABLE 15

PEAK DAYS OF FISH MIGRATION

BONNEVILLE DAM - 1938-1970

| 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 ¹ | 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 | 27,714 |
| 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 |
| 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 |
| Total | | 202,380 | | 110,890 | | 582,299 | | 169,174 | | 243,951 | | 61,487 | | 2,746 | | 318,314 |
| 33-Year Average | | 6,133 | | 3,360 | | 17,645 | | 5,126 | | 7,392 | | 1,863 | | 83 | | 9,646 |

TABLE 15

¹ Fish counting initiated on 7 May 1938.

TABLE 16
MONTHLY COUNT OF CHINOOK SALMON
RONNEVILLE DAM - 1938 - 1970

| Year | Spring Run Totals | | | | | Summer Run Totals | | | | | Fall Run Totals | | | | | Yearly Totals |
|----------------------------|----------------------|-----------|---------------|------------------|---------------------|----------------------|------------------|----------------|------------------|------------------|--------------------|----------------|--------------|------------|------------------|-------------------|
| | Jan | Feb | Mar | Apr | May | Jan 1-May 31 | Jun | Jul | Jun 1-Jul 31 | Aug | Sep | Oct | Nov | Dec | Aug 1-Dec 31 | |
| 1938 | - | - | - | - | 22,371 ¹ | 22,371 | 8,221 | 6,556 | 14,777 | 34,765 | 197,294 | 2,302 | 263 | 27 | 234,651 | 271,799 |
| 1939 | 6 | 12 | 121 | 51,410 | 25,159 | 76,708 | 5,602 | 17,828 | 23,430 | 32,909 | 150,851 | 2,197 | 78 | 16 | 186,051 | 286,189 |
| 1940 | - | - | 504 | 37,253 | 28,621 | 66,378 | 7,027 | 14,938 | 21,965 | 58,643 | 240,515 | 3,765 | 287 | 34 | 303,244 | 391,587 |
| 1941 | 4 | - | 1,360 | 51,486 | 19,445 | 72,295 | 7,013 | 9,395 | 16,408 | 12,590 | 351,967 | 7,179 | 866 | 138 | 372,740 | 461,443 |
| 1942 | 1 | 15 | 34 | 9,506 | 30,915 | 40,471 | 11,816 | 12,821 | 24,637 | 27,581 | 303,939 | 4,485 | 639 | 190 | 336,834 | 401,942 |
| 1943 | 11 | 6 | 43 | 12,172 | 53,268 | 65,500 | 5,440 | 8,044 | 13,484 | 28,985 | 201,414 | 3,354 | 365 | 21 | 234,139 | 313,123 |
| 1944 | 1 | 2 | 65 | 15,671 | 15,127 | 30,866 | 4,363 | 8,241 | 12,604 | 55,468 | 139,254 | 2,388 | 164 | 20 | 197,294 | 240,764 |
| 1945 | 6 | 4 | 81 | 17,148 | 26,276 | 43,515 | 11,293 | 16,317 | 27,610 | 32,254 | 189,675 | 4,281 | 137 | 6 | 226,353 | 297,478 |
| 1946 | 1 | 2 | 25 | 14,196 | 53,313 | 67,537 | 30,253 | 20,967 | 51,220 | 45,422 | 277,152 | 4,523 | 173 | 25 | 327,295 | 446,052 |
| 1947 | - | 2 | 141 | 83,520 | 49,899 | 133,562 | 25,502 | 13,358 | 38,860 | 43,062 | 260,385 | 3,945 | 526 | 37 | 307,955 | 480,377 |
| 1948 | 10 | - | 251 | 21,205 | 20,262 | 41,728 | 44,137 | 23,100 | 67,237 | 35,934 | 270,238 | 3,928 | 467 | 23 | 310,590 | 419,555 |
| 1949 | - | - | 5 | 5,765 | 44,304 | 50,074 | 24,232 | 22,500 | 46,732 | 41,500 | 137,599 | 1,571 | 215 | 6 | 180,891 | 277,697 |
| 1950 | - | - | 21 | 6,630 | 50,636 | 57,289 | 16,667 | 32,937 | 49,604 | 40,462 | 205,521 | 4,356 | 143 | - | 250,482 | 357,375 |
| 1951 | - | - | 32 | 28,801 | 86,055 | 114,888 | 54,889 | 24,394 | 79,283 | 33,785 | 97,131 | 6,489 | 212 | - | 137,617 | 331,788 |
| 1952 | - | - | 255 | 8,130 | 107,807 | 116,192 | 62,491 | 21,800 | 84,291 | 82,290 | 135,053 | 2,576 | 477 | - | 220,396 | 420,879 |
| 1953 | - | - | 1,254 | 126,450 | 42,583 | 170,287 | 27,228 | 30,593 | 57,821 | 27,398 | 75,145 | 1,495 | 333 | - | 104,371 | 332,479 |
| 1954 | - | 2 | 657 | 82,877 | 51,230 | 134,766 | 46,801 | 32,596 | 79,397 | 24,969 | 80,426 | 1,189 | 200 | - | 106,784 | 320,947 |
| 1955 | - | - | 1,391 | 84,436 | 85,769 | 171,596 | 45,502 | 37,437 | 82,939 | 32,833 | 70,558 | 1,803 | 124 | - | 105,318 | 359,853 |
| 1956 | - | - | 161 | 8,850 | 54,438 | 63,449 | 64,262 | 36,938 | 101,200 | 42,203 | 92,030 | 1,854 | 179 | 2 | 136,268 | 300,917 |
| 1957 | - | - | 328 | 90,984 | 45,128 | 136,440 | 104,243 | 30,790 | 135,033 | 34,829 | 95,457 | 1,352 | 175 | - | 131,813 | 403,286 |
| 1958 | - | - | 468 | 15,361 | 59,377 | 75,206 | 74,375 | 27,524 | 101,899 | 19,735 | 227,504 | 1,948 | 127 | - | 249,314 | 426,419 |
| 1959 | - | - | 182 | 26,944 | 34,007 | 61,133 | 39,581 | 49,371 | 88,952 | 24,945 | 168,187 | 1,643 | 168 | - | 194,943 | 345,028 |
| 1960 | - | - | 184 | 37,064 | 32,349 | 69,597 | 65,247 | 19,923 | 85,170 | 22,719 | 76,327 | 2,012 | 224 | - | 101,282 | 256,049 |
| 1961 | - | - | 476 | 72,526 | 25,693 | 98,695 | 41,302 | 25,159 | 66,461 | 22,675 | 90,688 | 3,108 | 353 | - | 116,824 | 281,980 |
| 1962 | - | - | 1,278 | 56,201 | 33,637 | 91,116 | 52,392 | 25,093 | 77,485 | 23,526 | 91,320 | 2,759 | 419 | - | 118,024 | 286,625 |
| 1963 | - | - | 2,802 | 43,859 | 28,810 | 75,471 | 36,836 | 27,178 | 64,014 | 28,586 | 104,415 | 5,571 | 503 | - | 139,075 | 278,560 |
| 1964 | - | - | 2,418 | 69,031 | 19,979 | 91,428 | 35,814 | 44,717 | 80,531 | 26,546 | 141,525 | 4,157 | 235 | - | 172,463 | 344,422 |
| 1965 | - | - | 1,238 | 47,083 | 35,945 | 84,266 | 38,482 | 37,515 | 75,997 | 38,727 | 112,664 | 6,074 | 229 | - | 157,694 | 317,957 |
| 1966 | - | - | 2,168 | 92,637 | 17,864 | 112,669 | 40,233 | 31,764 | 71,997 | 20,608 | 128,421 | 6,052 | 364 | - | 155,445 | 340,111 |
| 1967 | - | - | 1,620 | 71,957 | 11,358 | 84,935 | 41,847 | 53,812 | 95,659 | 25,760 | 154,323 | 5,405 | 155 | - | 185,643 | 366,237 |
| 1968 | - | - | 1,342 | 69,420 | 28,425 | 99,167 | 46,793 | 36,126 | 82,919 | 27,779 | 126,994 | 4,010 | 265 | - | 159,048 | 341,154 |
| 1969 | - | - | 1,910 | 65,371 | 106,281 | 173,562 | 59,177 | 42,976 | 102,153 | 38,456 | 187,502 | 5,511 | 359 | - | 231,828 | 507,543 |
| 1970 | - | - | 2,020 | 78,605 | 30,351 | 110,976 | 35,091 | 29,811 | 64,902 | 44,559 | 159,710 | 4,364 | 269 | - | 208,902 | 384,780 |
| Total | 40 | 45 | 24,835 | 1,502,549 | 1,376,684 | 2,904,153 | 1,214,152 | 872,519 | 2,086,671 | 1,132,503 | 5,341,184 | 117,646 | 9,693 | 545 | 6,601,571 | 11,592,395 |
| 33-Year Average | 1 | 1 | 753 | 45,532 | 41,718 | 88,005 | 36,792 | 26,440 | 63,232 | 34,318 | 161,854 | 3,565 | 294 | 17 | 200,048 | 351,285 |

TABLE 17
MONTHLY COUNT OF SOCKEYE SALMON
BONNEVILLE DAM - 1938-1970

| Year | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total |
|------------------------|-----|-----|-----------|------------|--------------|------------------|------------------|---------------|--------------|------------|-----------|----------|------------------|
| 1938 | | | | | 1,025 | 17,811 | 53,865 | 2,097 | 235 | 6 | 2 | | 75,040 |
| 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 | 32,078 | 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 |
| 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 |
| Total | | | 76 | 536 | 6,994 | 1,049,251 | 2,160,328 | 34,809 | 2,348 | 123 | 31 | 1 | 3,254,497 |
| 33-Year Average | | | 2 | 16 | 212 | 31,795 | 65,464 | 1,055 | 71 | 3 | 1 | | 98,621 |

TABLE 17

TABLE 18
MONTHLY COUNT OF COHO SALMON
BONNEVILLE DAM - 1938-1970

| Year | Jan | Feb | Mar | Apr | May | Jun | July | 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 |
| 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 |
| Total | 21 | 12 | 5 | | | 169 | 2,403 | 70,655 | 573,873 | 36,834 | 1,721 | 66 | 685,759 | 153,801 |
| 33-Year Average | 1 | .4 | .2 | | | 5 | 73 | 2,141 | 17,390 | 1,116 | 52 | 2 | 20,781 | 30,760 |

* In 1966 Jacks were classified as those coho's under 12" in length.
Beginning with 1967 Jacks were classified as under 22 inches.

** 5-Year Average

TABLE 19
MONTHLY COUNT OF CHUM SALMON
BONNEVILLE DAM - 1938-1970

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|--------|-------|--------|
| 1938 | | | | | | | | | | 1,245 | 799 | 73 | 2,117 |
| 1939 | 2 | | | | | | | | 6 | 700 | 411 | 49 | 1,168 |
| 1940 | | | | | | | | | | 860 | 835 | 34 | 1,729 |
| 1941 | | | | | | | | | | 1,116 | 4,130 | 23 | 5,269 |
| 1942 | | | | | | | | | | 700 | 1,149 | 16 | 1,865 |
| 1943 | | | | | | | | | | 125 | 623 | 40 | 788 |
| 1944 | 1 | | | | | | | | | 191 | 666 | 96 | 954 |
| 1945 | 2 | | | | | | | | 2 | 119 | 585 | 20 | 728 |
| 1946 | | | | | | | | | 1 | 306 | 808 | 63 | 1,178 |
| 1947 | | | | | | | | 1 | | 59 | 110 | 29 | 199 |
| 1948 | | | | | | | | | | 192 | 2,966 | 478 | 3,636 |
| 1949 | | | | | | | | | | 215 | 1,719 | 94 | 2,028 |
| 1950 | 1 | | | | | | | | | 298 | 770 | | 1,069 |
| 1951 | | | | | | | | | | 60 | 984 | | 1,044 |
| 1952 | | | | | | | | | 2 | 163 | 1,340 | | 1,505 |
| 1953 | | | | | | | | | | 373 | 1,355 | | 1,728 |
| 1954 | | | | | | | | | 6 | 193 | 1,370 | | 1,569 |
| 1955 | | | | | | | | | | 66 | 252 | | 318 |
| 1956 | | | | | | | | | 2 | 135 | 547 | 9 | 693 |
| 1957 | | | | | | | | | 3 | 38 | 528 | | 569 |
| 1958 | | | | | | | | | | 147 | 308 | | 455 |
| 1959 | | | | | | | | | 8 | 130 | 768 | | 906 |
| 1960 | | | | | | | | | | 291 | 735 | | 1,026 |
| 1961 | | | | | | | | | | 222 | 674 | | 896 |
| 1962 | | | | | | | | | | 188 | 825 | | 1,013 |
| 1963 | | | | | | | | | 25 | 302 | 412 | | 739 |
| 1964 | | | | | | | 3 | 1 | 15 | 176 | 437 | | 632 |
| 1965 | | | | | | | | | 10 | 55 | 431 | | 496 |
| 1966 | | | | | | | 1 | 4 | 28 | 114 | 725 | | 872 |
| 1967 | | | | | | | | | 11 | 58 | 283 | | 352 |
| 1968 | | | | | | | | | 11 | 10 | 58 | | 79 |
| 1969 | | | | | | | | | 6 | 75 | 62 | | 143 |
| 1970 | | | | | | | | 6 | 64 | 75 | 64 | | 209 |
| Total | 6 | | | | | | 4 | 12 | 200 | 8,997 | 27,729 | 1,024 | 37,972 |
| 33-Year Average | .2 | | | | | | .1 | 4 | 6 | 273 | 840 | 31 | 1,151 |

TABLE 19

TABLE 20
MONTHLY COUNT OF STEELHEAD TROUT
BONNEVILLE DAM - 1938-1970

| Year | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Total | SPRING | SUMMER | FALL |
|--------------------|-------|-------|--------|---------|--------|---------|-----------|-----------|-----------|--------|--------|-------|-----------|------------------|------------------|-------------------|
| | | | | | | | | | | | | | | Jan 1- May 31 | Jun 1- Aug 25 | 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 | 72,810 | 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 | 106,712 | 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 | | | 1,006 | 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 | 1,457 | 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 | 74,267 | 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 | 5,729 | 91,816 | 46,116 |
| 1967 | | | 416 | 1,182 | 899 | 3,062 | 40,881 | 36,787 | 35,472 | 2,701 | 472 | | 121,872 | 2,497 | 76,297 | 43,078 |
| 1968 | | | 340 | 861 | 1,315 | 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 | 35,004 |
| Total | 1,565 | 2,486 | 29,957 | 104,540 | 63,626 | 122,063 | 1,575,313 | 1,406,543 | 1,237,707 | 73,067 | 16,777 | 2,291 | 4,635,935 | 202,174 | 2,855,052 | 1,578,709 |
| 33-Year Average | 47 | 75 | 908 | 3,168 | 1,928 | 3,699 | 47,737 | 42,623 | 37,506 | 2,214 | 508 | 69 | 140,483 | 6,126 | 86,517 | 47,840 |

TABLE 21

MONTHLY COUNT OF SHAD AND PERCENT COUNTED OVER FISH LADDERS

BONNEVILLE DAM - 1938-1970

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total | Percent by Fish Ladders | |
|-----------------|-----|-----|-----|-----|-------|-----------|-----------|--------|-------|-----|-----|-----|-----------|-------------------------|-------------|
| | | | | | | | | | | | | | | Brad. Is. | 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 | | | | | | 42,689 | 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 |
| 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 |
| Total | | | 3 | 8 | 1,473 | 1,009,965 | 3,035,007 | 66,655 | 2,648 | 194 | 10 | | 4,115,963 | | |
| 33-Year Average | | | | .2 | 45 | 30,605 | 91,970 | 2,020 | 80 | 6 | .3 | | 124,726 | 61.34 | 38.65 |

TABLE 22

NUMBER AND PERCENT OF CHINOOK JACK SALMON 1/

BONNEVILLE DAM - 1938-1970

| Year | Total Jack Salmon | Percent of Total | Total Chinook including Jack Salmon |
|-----------------|-------------------|------------------|-------------------------------------|
| 1938 | 36,530 | 13.44 | 271,799 |
| 1939 | 63,793 | 22.29 | 286,189 |
| 1940 | 86,170 | 22.00 | 391,587 |
| 1941 | 46,884 | 10.16 | 461,443 |
| 1942 | 52,352 | 13.02 | 401,942 |
| 1943 | 19,286 | 6.16 | 313,123 |
| 1944 | 33,755 | 14.02 | 240,764 |
| 1945 | 37,036 | 12.45 | 297,478 |
| 1946 | 45,412 | 10.18 | 446,052 |
| 1947 | 25,582 | 5.32 | 480,377 |
| 1948 | 57,309 | 13.65 | 419,555 |
| 1949 | 14,573 | 5.25 | 277,697 |
| 1950 | 38,808 | 10.86 | 357,375 |
| 1951 | 24,060 | 7.25 | 331,788 |
| 1952 | 33,172 | 7.88 | 420,879 |
| 1953 | 32,215 | 9.69 | 332,479 |
| 1954 | 50,707 | 15.80 | 320,947 |
| 1955 | 35,071 | 9.75 | 359,853 |
| 1956 | 41,274 | 13.72 | 300,917 |
| 1957 | 25,553 | 6.33 | 403,286 |
| 1958 | 15,909 | 3.73 | 426,419 |
| 1959 | 31,594 | 9.16 | 345,028 |
| 1960 | 18,204 | 7.11 | 256,049 |
| 1961 | 29,736 | 10.55 | 281,980 |
| 1962 | 23,037 | 8.04 | 286,625 |
| 1963 | 48,114 | 17.27 | 278,560 |
| 1964 | 28,116 | 8.16 | 344,422 |
| 1965 | 64,597 | 20.33 | 317,957 |
| 1966 | 45,468 | 13.37 | 340,111 |
| 1967 | 73,581 | 20.09 | 366,237 |
| 1968 | 64,823 | 19.00 | 341,154 |
| 1969 | 96,295 | 18.97 | 507,543 |
| 1970 | 70,748 | 18.38 | 384,780 |
| Total | 1,409,764 | | 11,592,395 |
| 33-Year Average | 42,720 | 12.16 | 351,285 |

1/ Chinook tallied as Jacks through 1963 included only those approximately 16 to 18 inches in length. Subsequent Jack tallies included all chinooks under 22 inches in length.

TABLE 23

YEARLY PERCENTAGE OF SALMONIDS COUNTED OVER EACH FISH LADDER

BONNEVILLE DAM -- 1938-1970

| Year | Chinook | | Sockeye | | Coho | | Chum | | Steelhead | | Percent of total Salmonid count | | |
|------|-------------------|------------------|--------------------|------------------|--------------------|-------|-------------------|-------|--------------------|-------|------------------------------------|--------------------|--------------------|
| | B.I. | Wash. | B.I. | Wash. | B.I. | Wash. | B.I. | Wash. | B.I. | Wash. | B.I. | Wash. | Fish Locks |
| 1938 | 34.25 | 64.68 | 55.80 | 44.20 | 56.55 | 43.45 | 66.27 | 33.73 | 35.77 | 62.75 | 38.89 | 60.16 | |
| | 1.07 ₁ | | | | | | | | 1.48 ₁ | | | | .95 |
| 1939 | 55.21 | 40.15 | 40.90 | 59.10 | 35.06 | 64.94 | 23.75 | 76.25 | 44.72 | 53.62 | 50.72 | 46.17 | |
| | 4.64 ₁ | | | | | | | | 1.66 ₁ | | | | 3.11 |
| 1940 | 59.00 | 41.00 | 47.80 | 52.20 | 61.80 | 38.20 | 38.20 | 61.80 | 47.50 | 52.50 | 52.23 | 47.77 | |
| 1941 | 51.20 | 39.86 | 29.89 | 51.30 | 40.80 | 43.79 | 5.00 | 90.00 | 27.47 | 54.22 | 44.28 | 44.02 | |
| | 8.94 ₁ | | 18.81 ₁ | | 15.37 ₁ | | 5.00 ₁ | | 18.31 ₁ | | | | 11.70 ₂ |
| 1942 | 54.00 | 45.98 | 45.84 | 54.16 | 48.44 | 51.56 | 21.16 | 78.84 | 43.00 | 56.80 | 50.38 | 49.56 | |
| | .02 ₁ | | | | | | | | .20 ₁ | | | | .06 |
| 1943 | 48.96 | 51.04 | 47.44 | 52.56 | 53.45 | 46.55 | 29.17 | 70.83 | 46.14 | 53.86 | 48.29 | 51.71 | |
| 1944 | 62.02 | 37.98 | 51.76 | 48.24 | 58.59 | 41.41 | 14.95 | 85.05 | 52.14 | 47.86 | 58.60 | 41.40 | |
| 1945 | 69.69 | 30.31 | 51.20 | 48.80 | 70.56 | 29.44 | 27.70 | 72.30 | 67.55 | 32.45 | 68.65 | 31.35 | |
| 1946 | 65.00 | 35.00 | 42.00 | 58.00 | 60.00 | 40.00 | 43.00 | 57.00 | 43.00 | 57.00 | 60.51 | 39.49 | |
| 1947 | 65.20 | 34.80 | 35.00 | 65.00 | 88.40 | 11.60 | 74.40 | 25.60 | 54.30 | 45.70 | 57.23 | 42.77 | |
| 1948 | 66.50 | 33.50 | 47.20 | 52.80 | 82.50 | 17.50 | 74.40 | 25.60 | 59.60 | 40.40 | 61.57 | 38.43 | |
| 1949 | 78.50 | 21.50 | 61.50 | 38.50 | 82.50 | 17.50 | 67.50 | 32.50 | 65.10 | 34.90 | 73.04 | 26.96 | |
| 1950 | 69.40 | 30.60 | 49.60 | 50.40 | 66.10 | 33.90 | 40.50 | 59.50 | 49.30 | 50.70 | 62.46 | 37.54 | |
| 1951 | 58.80 | 41.20 | 39.50 | 60.50 | 57.00 | 43.00 | 33.10 | 66.90 | 28.03 | 71.91 | 47.01 | 52.96 | |
| | | | | | | | | | .06 ₁ | | | | .03 |
| 1952 | 62.54 | 37.45 | 44.00 | 56.00 | 74.50 | 25.20 | 14.80 | 79.10 | 59.30 | 40.20 | 57.68 | 42.15 | |
| | .01 ₁ | | | | .30 ₁ | | 6.10 ₁ | | .50 ₁ | | | | .17 |
| 1953 | 65.66 | 34.28 | 60.92 | 39.06 | 62.10 | 37.90 | 61.40 | 38.60 | 59.94 | 40.05 | 62.62 | 37.34 | |
| | .06 ₁ | | .02 ₁ | | | | | | .01 ₁ | | | | .04 |
| 1954 | 44.23 | 55.77 | 56.32 | 43.68 | 60.29 | 39.71 | 60.87 | 39.13 | 40.29 | 59.71 | 45.75 | 54.24 | |
| 1955 | 53.28 | 45.71 | 53.02 | 46.95 | 68.03 | 31.97 | 75.16 | 24.84 | 49.99 | 50.00 | 52.47 | 47.51 | |
| | | .01 ₁ | | .03 ₁ | | | | | .01 ₁ | | | | .01 |
| 1956 | 62.08 | 37.91 | 50.93 | 49.03 | 81.28 | 18.72 | 59.74 | 40.26 | 57.01 | 42.97 | 58.23 | 41.75 | |
| | | .01 ₁ | | .04 ₁ | | | | | .02 ₁ | | | | .02 |
| 1957 | 67.30 | 32.70 | 57.55 | 42.45 | 81.22 | 18.78 | 82.78 | 17.22 | 64.51 | 35.49 | 65.52 | 34.48 ₃ | |
| 1958 | 71.86 | 28.14 | 59.38 | 40.62 | 78.87 | 21.13 | 54.95 | 45.05 | 69.28 | 30.72 | 69.16 | 30.84 | |
| 1959 | 63.44 | 36.56 | 39.10 | 60.90 | 72.50 | 27.50 | 89.96 | 10.04 | 44.05 | 55.95 | 55.36 | 44.64 | |
| 1960 | 63.68 | 36.32 | 47.37 | 53.63 | 86.57 | 13.43 | 60.43 | 39.57 | 57.93 | 42.07 | 59.96 | 40.04 | |
| 1961 | 66.72 | 33.28 | 50.38 | 49.62 | 78.12 | 21.88 | 75.22 | 24.78 | 55.90 | 44.10 | 62.78 | 37.22 | |
| 1962 | 62.92 | 37.08 | 50.42 | 49.58 | 80.32 | 19.68 | 44.92 | 55.08 | 45.13 | 54.87 | 56.79 | 43.21 | |
| 1963 | 71.30 | 28.70 | 45.82 | 54.18 | 86.15 | 13.85 | 55.07 | 44.93 | 49.55 | 50.45 | 62.63 | 37.37 | |
| 1964 | 75.56 | 24.44 | 56.26 | 43.74 | 94.33 | 5.67 | 89.24 | 10.76 | 48.80 | 51.20 | 65.31 | 34.69 | |
| 1965 | 62.61 | 37.39 | 47.41 | 52.59 | 87.97 | 12.02 | 63.10 | 36.90 | 46.97 | 53.03 | 60.15 | 39.84 | |
| | | | | | .01 ₂ | | | | | | | | |
| 1966 | 74.28 | 25.72 | 37.03 | 62.97 | 87.39 | 12.61 | 73.45 | 26.55 | 46.69 | 53.31 | 61.86 | 38.14 | |
| 1967 | 65.21 | 34.79 | 37.36 | 62.64 | 89.24 | 10.76 | 72.16 | 27.84 | 45.70 | 54.30 | 59.63 | 40.37 | |
| 1968 | 65.76 | 34.24 | 46.00 | 54.00 | 65.95 | 34.05 | 67.09 | 32.91 | 40.42 | 59.58 | 57.95 | 42.05 | |
| 1969 | 64.80 | 35.19 | 60.00 | 40.00 | 73.68 | 26.31 | 67.13 | 32.86 | 53.65 | 46.34 | 62.92 | 37.07 | |
| 1970 | 77.28 | 22.71 | 58.63 | 41.36 | 76.47 | 23.52 | 79.90 | 20.09 | 65.05 | 34.94 | 73.01 | 26.98 | |
| 1971 | 70.24 | 29.71 | 54.54 | 45.46 | 79.39 | 20.61 | 82.61 | 17.39 | 67.08 | 32.92 | 69.33 | 30.67 | |

1 Via fish locks

2 Powerhouse branch fishway had been removed to permit construction of the four north units of the powerhouse

3 1 chinook and 1 chum salmon lifted in fish lock in November 1957

4 12 humpback salmon counted in 1957 - included in percent of total count

5 6 silvers lifted in powerhouse fish lock in 1965

TABLE 23

TABLE 24
 YEARLY TOTALS OF ALL FISH COUNTED OVER THE DALLES DAM
 1957 - 1970

| 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 | 381,251 |
| 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 |
| Total | 3,326,861 | 1,812,958 | 1,071,284 | 195,148 | 191 | 54 | 6,406,496 |
| 14-Year Average | 237,633 | 129,497 | 76,520 | 13,939 | 14 | 4 | 457,607 |

TABLE 24

TABLE 25

MONTHLY TOTALS OF SALMONID AND SHAD COUNTED OVER THE DALLES DAM

1970

| SPECIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|---------------------|-----|-----|-----|--------|--------|---------|--------|--------|---------|-------|-----|-----|---------|
| Chinook | - | - | - | 53,370 | 29,670 | 22,903 | 23,318 | 34,906 | 93,633 | 3,657 | - | - | 261,457 |
| Steelhead | - | - | - | 337 | 172 | 733 | 15,905 | 32,752 | 44,823 | 4,465 | - | - | 99,187 |
| Sockeye | - | - | - | - | 1 | 18,309 | 56,903 | 2,387 | 75 | 3 | - | - | 77,678 |
| Coho | - | - | - | - | - | - | 96 | 2,064 | 19,983 | 1,076 | - | - | 23,219 |
| Pink | | | | | | | | | 4 | | | | 4 |
| Total Salmon | - | - | - | 53,707 | 29,843 | 41,945 | 96,222 | 72,109 | 158,518 | 9,201 | - | - | 461,545 |
| Shad | | - | - | - | 110 | 208,950 | 99,119 | 457 | 30 | 4 | - | - | 308,670 |

TABLE 26
SALMONID AND SHAD COUNT - APRIL, MAY & JUNE 1970
THE DALLES DAM

| Date | APRIL | | | MAY | | | | | JUNE | | | | | Date |
|------|---------|------------|--------|---------|---------|------------|----------------|------|---------|---------|------------|----------------|---------|------|
| | Chinook | Steel-head | Total | Chinook | Sockeye | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Steel-head | Total Salmonid | Shad | |
| 1 | | | | 2,306 | | 5 | 2,311 | | 171 | | 8 | 179 | 34 | 1 |
| 2 | | | | 4,191 | | 7 | 4,198 | | 165 | | 5 | 171 | 144 | 2 |
| 3 | | | | 4,007 | | 10 | 4,017 | | 173 | 1 | 3 | 176 | 199 | 3 |
| 4 | | | | 1,974 | | 9 | 1,983 | | 232 | 1 | 3 | 236 | 259 | 4 |
| 5 | 1,157 | 45 | 1,202 | 2,742 | | 5 | 2,747 | | 260 | | 10 | 270 | 522 | 5 |
| 6 | 645 | 33 | 678 | 1,527 | | 15 | 1,542 | | 277 | | 10 | 287 | 718 | 6 |
| 7 | 1,384 | 22 | 1,406 | 1,381 | | 7 | 1,388 | | 460 | 4 | 1 | 465 | 569 | 7 |
| 8 | 840 | 19 | 859 | 1,095 | | 5 | 1,100 | | 540 | 7 | 6 | 553 | 1,532 | 8 |
| 9 | 1,057 | 11 | 1,068 | 1,183 | | 4 | 1,187 | | 531 | 3 | 11 | 545 | 1,506 | 9 |
| 10 | 1,845 | 13 | 1,858 | 919 | | 7 | 926 | | 652 | 2 | 12 | 666 | 1,484 | 10 |
| 11 | 2,315 | 9 | 2,324 | 878 | | 5 | 883 | | 745 | 8 | 7 | 760 | 1,741 | 11 |
| 12 | 2,347 | 21 | 2,368 | 515 | | 6 | 521 | | 885 | 11 | 11 | 907 | 2,535 | 12 |
| 13 | 1,508 | 10 | 1,518 | 457 | | 2 | 459 | | 688 | 30 | 17 | 735 | 3,855 | 13 |
| 14 | 1,553 | 8 | 1,561 | 680 | | 4 | 684 | | 1,066 | 52 | 19 | 1,137 | 3,372 | 14 |
| 15 | 1,623 | 11 | 1,634 | 646 | | 2 | 648 | | 706 | 66 | 33 | 805 | 3,653 | 15 |
| 16 | 1,388 | 5 | 1,393 | 512 | | 8 | 520 | | 755 | 157 | 33 | 945 | 2,818 | 16 |
| 17 | 1,322 | 7 | 1,329 | 635 | | 6 | 641 | | 648 | 182 | 18 | 848 | 3,510 | 17 |
| 18 | 4,557 | 14 | 4,571 | 607 | | 7 | 614 | | 624 | 262 | 20 | 906 | 5,659 | 18 |
| 19 | 3,805 | 13 | 3,818 | 449 | | 9 | 458 | | 708 | 384 | 23 | 1,115 | 7,638 | 19 |
| 20 | 2,117 | 8 | 2,125 | 516 | | 4 | 520 | 1 | 928 | 834 | 20 | 1,782 | 9,414 | 20 |
| 21 | 1,811 | 9 | 1,820 | 471 | | 5 | 476 | 5 | 1,384 | 1,129 | 45 | 2,558 | 16,245 | 21 |
| 22 | 1,749 | 11 | 1,760 | 287 | | 11 | 298 | 6 | 932 | 1,202 | 42 | 2,176 | 15,616 | 22 |
| 23 | 2,278 | 14 | 2,292 | 243 | | 4 | 247 | 2 | 888 | 1,572 | 42 | 2,502 | 21,107 | 23 |
| 24 | 2,807 | 9 | 2,816 | 192 | | 1 | 193 | 3 | 1,175 | 1,825 | 46 | 3,046 | 16,943 | 24 |
| 25 | 2,150 | 8 | 2,158 | 205 | | 4 | 209 | 1 | 1,057 | 2,233 | 40 | 3,330 | 17,624 | 25 |
| 26 | 3,398 | 3 | 3,401 | 245 | | 5 | 250 | 6 | 1,087 | 2,023 | 36 | 3,146 | 18,810 | 26 |
| 27 | 1,705 | 12 | 1,717 | 266 | | 4 | 270 | 22 | 1,618 | 2,042 | 57 | 3,717 | 20,903 | 27 |
| 28 | 2,475 | 9 | 2,484 | 175 | | 3 | 178 | 14 | 1,321 | 1,471 | 46 | 2,838 | 9,201 | 28 |
| 29 | 2,716 | 8 | 2,724 | 112 | | 1 | 113 | 11 | 1,314 | 1,535 | 75 | 2,924 | 9,673 | 29 |
| 30 | 2,818 | 5 | 2,823 | 119 | | 5 | 124 | 23 | 913 | 1,273 | 34 | 2,220 | 11,666 | 30 |
| 31 | | | | 135 | 1 | 2 | 138 | 16 | | | | | | 31 |
| | 53,370 | 337 | 53,707 | 29,670 | 1 | 172 | 29,843 | 110 | 22,903 | 18,309 | 733 | 41,945 | 208,950 | |

TABLE 27
SALMONID AND SHAD COUNT - JULY & AUGUST 1970
THE DALLES DAM

| Date | JULY | | | | | | AUGUST | | | | | | Date |
|------|---------|---------|------|------------|----------------|--------|---------|---------|-------|------------|----------------|------|------|
| | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | Shad | |
| 1 | 798 | 1,457 | | 51 | 2,306 | 10,693 | 902 | 253 | 3 | 1,548 | 2,706 | 75 | 1 |
| 2 | 898 | 1,996 | | 38 | 2,932 | 7,701 | 814 | 403 | 31 | 1,598 | 2,846 | 59 | 2 |
| 3 | 702 | 2,164 | | 34 | 2,900 | 14,481 | 687 | 152 | 3 | 917 | 1,759 | 22 | 3 |
| 4 | 1,283 | 3,859 | | 69 | 5,211 | 11,885 | 409 | 171 | | 672 | 1,252 | 36 | 4 |
| 5 | 1,477 | 3,536 | | 108 | 5,121 | 6,677 | 932 | 156 | | 1,056 | 2,144 | 41 | 5 |
| 6 | 1,230 | 3,453 | | 165 | 4,848 | 5,781 | 938 | 98 | | 1,334 | 2,370 | 27 | 6 |
| 7 | 1,052 | 3,197 | | 169 | 4,418 | 5,842 | 886 | 304 | 178 | 2,092 | 3,460 | 35 | 7 |
| 8 | 728 | 2,688 | | 154 | 3,570 | 4,563 | 1,003 | 110 | 5 | 1,509 | 2,627 | 20 | 8 |
| 9 | 865 | 3,020 | | 161 | 4,046 | 3,433 | 557 | 130 | 67 | 1,020 | 1,774 | 12 | 9 |
| 10 | 598 | 2,542 | | 189 | 3,329 | 3,240 | 878 | 44 | 5 | 1,282 | 2,209 | 13 | 10 |
| 11 | 989 | 3,280 | 3 | 424 | 4,696 | 4,608 | 618 | 139 | 33 | 879 | 1,669 | 9 | 11 |
| 12 | 844 | 2,762 | 2 | 427 | 4,035 | 3,029 | 838 | 39 | | 929 | 1,806 | 13 | 12 |
| 13 | 899 | 2,813 | | 643 | 4,355 | 1,896 | 613 | 60 | 22 | 775 | 1,470 | 7 | 13 |
| 14 | 827 | 2,462 | | 595 | 3,884 | 2,413 | 756 | 20 | | 806 | 1,582 | 9 | 14 |
| 15 | 658 | 2,549 | | 586 | 3,793 | 3,038 | 1,127 | 22 | | 922 | 2,071 | 12 | 15 |
| 16 | 555 | 1,946 | | 459 | 2,960 | 1,487 | 955 | 24 | 6 | 895 | 1,880 | 7 | 16 |
| 17 | 470 | 1,948 | 9 | 463 | 2,890 | 1,236 | 624 | 18 | 2 | 842 | 1,486 | 5 | 17 |
| 18 | 579 | 1,474 | 3 | 536 | 2,592 | 1,729 | 724 | 16 | 7 | 1,085 | 1,832 | 3 | 18 |
| 19 | 646 | 1,445 | 10 | 629 | 2,730 | 1,098 | 1,357 | 22 | 26 | 1,510 | 2,915 | 4 | 19 |
| 20 | 773 | 1,245 | | 786 | 2,804 | 793 | 1,681 | 46 | 53 | 1,235 | 3,015 | 9 | 20 |
| 21 | 499 | 1,223 | 20 | 474 | 2,216 | 607 | 1,669 | 43 | 53 | 1,356 | 3,121 | 8 | 21 |
| 22 | 429 | 997 | | 518 | 1,944 | 451 | 1,475 | 21 | 111 | 1,177 | 2,784 | 7 | 22 |
| 23 | 522 | 834 | | 555 | 1,911 | 470 | 1,502 | 21 | 79 | 834 | 2,436 | 6 | 23 |
| 24 | 574 | 992 | | 706 | 2,272 | 537 | 1,369 | 16 | 117 | 744 | 2,273 | 8 | 24 |
| 25 | 636 | 557 | | 909 | 2,102 | 494 | 1,747 | 9 | 136 | 760 | 2,652 | 1 | 25 |
| 26 | 613 | 532 | | 1,024 | 2,169 | 239 | 1,568 | 6 | 147 | 914 | 2,635 | 1 | 26 |
| 27 | 524 | 381 | | 664 | 1,569 | 229 | 1,689 | 4 | 150 | 821 | 2,664 | 2 | 27 |
| 28 | 631 | 376 | | 660 | 1,667 | 182 | 1,630 | 4 | 195 | 1,106 | 2,935 | 3 | 28 |
| 29 | 695 | 373 | 17 | 1,299 | 2,384 | 94 | 1,757 | 27 | 249 | 1,067 | 3,100 | 1 | 29 |
| 30 | 735 | 343 | | 1,101 | 2,179 | 82 | 1,387 | | 161 | 605 | 2,153 | 1 | 30 |
| 31 | 589 | 459 | 32 | 1,309 | 2,389 | 111 | 1,787 | 9 | 225 | 462 | 2,483 | 1 | 31 |
| | 23,318 | 56,903 | 96 | 15,905 | 96,222 | 99,119 | 34,906 | 2,387 | 2,064 | 32,752 | 72,109 | 457 | |

TABLE 27

TABLE 28
SALMONID AND SHAD COUNT - SEPTEMBER AND OCTOBER 1970
THE DALLES DAM

| Date | SEPTEMBER | | | | | | | OCTOBER | | | | | | Date |
|------|-----------|---------|--------|------|------------|----------------|------|---------|---------|-------|------------|----------------|------|------|
| | Chinook | Sockeye | Coho | Pink | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | Shad | |
| 1 | 1,986 | 3 | 328 | | 604 | 2,921 | 1 | 407 | 1 | 50 | 310 | 768 | | 1 |
| 2 | 1,835 | 4 | 268 | | 268 | 2,806 | | 298 | | 83 | 371 | 752 | | 2 |
| 3 | 1,736 | 3 | 334 | | 334 | 3,050 | 3 | 357 | | 135 | 427 | 919 | | 3 |
| 4 | 2,358 | | 465 | | 465 | 3,691 | 2 | 240 | | 65 | 202 | 507 | 1 | 4 |
| 5 | 3,266 | 2 | 786 | | 786 | 5,601 | 2 | 335 | | 134 | 366 | 835 | | 5 |
| 6 | 3,985 | | 954 | | 954 | 6,902 | 2 | 226 | 1 | 109 | 387 | 723 | | 6 |
| 7 | 4,559 | 4 | 1,271 | | 1,271 | 8,703 | | 159 | | 43 | 256 | 458 | 1 | 7 |
| 8 | 5,862 | 6 | 1,441 | | 1,441 | 10,527 | 2 | 148 | | 57 | 154 | 359 | | 8 |
| 9 | 7,098 | 7 | 1,562 | | 1,562 | 12,507 | 2 | 132 | 1 | 32 | 166 | 331 | | 9 |
| 10 | 4,023 | 5 | 917 | | 917 | 8,286 | 4 | 180 | | 60 | 182 | 422 | 1 | 10 |
| 11 | 7,290 | 4 | 1,162 | | 1,162 | 12,543 | 2 | 169 | | 37 | 167 | 373 | | 11 |
| 12 | 8,172 | 15 | 1,198 | 1 | 1,198 | 12,495 | | 117 | | 38 | 163 | 318 | | 12 |
| 13 | 9,231 | 3 | 1,746 | 1 | 1,746 | 13,821 | 1 | 85 | | 13 | 92 | 190 | | 13 |
| 14 | 5,115 | 14 | 1,098 | | 1,098 | 7,833 | | 89 | | 14 | 74 | 177 | | 14 |
| 15 | 4,428 | | 807 | | 807 | 6,578 | | 84 | | 15 | 72 | 171 | | 15 |
| 16 | 3,944 | 4 | 899 | | 899 | 6,379 | 3 | 87 | | 14 | 53 | 154 | | 16 |
| 17 | 3,813 | | 759 | | 759 | 5,908 | | 85 | | 13 | 53 | 151 | | 17 |
| 18 | 2,937 | | 692 | | 692 | 4,884 | | 60 | | 16 | 69 | 145 | | 18 |
| 19 | 3,082 | | 865 | | 865 | 5,468 | | 46 | | 14 | 49 | 109 | | 19 |
| 20 | 1,891 | 1 | 486 | | 486 | 3,381 | | 62 | | 15 | 66 | 143 | | 20 |
| 21 | 1,234 | | 346 | | 346 | 2,245 | 1 | 43 | | 36 | 87 | 166 | | 21 |
| 22 | 787 | | 233 | | 233 | 1,496 | | 75 | | 30 | 192 | 297 | | 22 |
| 23 | 790 | | 334 | 1 | 334 | 1,630 | 1 | 105 | | 23 | 287 | 415 | 1 | 23 |
| 24 | 681 | | 219 | | 219 | 1,423 | 1 | 68 | | 30 | 220 | 318 | | 24 |
| 25 | 619 | | 239 | 1 | 239 | 1,511 | | | | | | | | 25 |
| 26 | 772 | | 175 | | 175 | 1,705 | | | | | | | | 26 |
| 27 | 622 | | 168 | | 168 | 1,266 | | | | | | | | 27 |
| 28 | 536 | | 95 | | 95 | 1,106 | 2 | | | | | | | 28 |
| 29 | 507 | | 66 | | 66 | 958 | | | | | | | | 29 |
| 30 | 474 | | 70 | | 70 | 894 | 1 | | | | | | | 30 |
| 31 | | | | | | | | | | | | | | 31 |
| | 93,633 | 75 | 19,983 | 4 | 44,823 | 158,518 | 30 | 3,657 | 3 | 1,076 | 4,465 | 9,201 | 4 | |

TABLE 29
 PEAK DAYS OF FISH MIGRATION
 THE DALLES DAM - 1957- 1970

| 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 |
| 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 | 4,257 | 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 | 3,351 | 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 17 | 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 | | | 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 | 6,636 | 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 | 9,231 | Sep 11 | 4,087 | Jul 4 | 3,859 | Sep 13 | 1,746 | None | | Jun 27 | 20,903 |
| | Total | 68,521 | | 43,840 | | 80,477 | | 60,108 | | 73,413 | | 13,430 | | | | 171,221 |
| | 14-Year Average | 4,894 | | 3,131 | | 5,748 | | 4,293 | | 5,244 | | 959 | | | | 12,230 |

TABLE 29

TABLE 30
MONTHLY COUNT OF CHINOOK SALMON
THE DALLES DAM - 1957-1970

| Year | Jan | Feb | Mar | Apr | May | June | Jul | Aug | Sep | Oct | Nov | Dec | Total for Year | 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 |
| Total | | | 1,907 | 479,254 | 533,812 | 484,567 | 424,082 | 301,671 | 1,048,705 | 52,025 | 838 | | 3,326,861 | 1,037,694 | 916,656 | 1,372,511 | 715,948 |
| 14-Year Average | | | 136 | 34,232 | 38,129 | 34,612 | 30,292 | 21,548 | 74,908 | 3,716 | 60 | | 237,633 | 74,121 | 65,475 | 98,037 | 51,139 |

TABLE 31
MONTHLY COUNT OF SOCKEYE SALMON
THE DALLES DAM - 1957-1970

| 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 |
| Total | | | | | 1,303 | 323,134 | 731,234 | 14,832 | 771 | 10 | | | 1,071,284 |
| 14-Year Average | | | | | 93 | 23,081 | 52,231 | 1,059 | 55 | 1 | | | 76,520 |

TABLE 31

TABLE 32
MONTHLY COUNT OF COHO SALMON
THE DALLES DAM - 1957-1970

| 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 |
| Total | | | | | | | 1,535 | 13,249 | 161,339 | 18,915 | 110 | | 195,148 | 56,036 |
| 14-Year Average | | | | | | | 110 | 946 | 11,524 | 1,351 | 8 | | 13,939 | 14,009 |

* Total including Jacks

** 4-Year average Coho "Jacks"

TABLE 33
MONTHLY COUNT OF STEELHEAD TROUT
THE DALLES DAM - 1957-1970

| 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 | 32,657 | 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 | 33,675 | 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 |
| Total | | 25 | 2,677 | 7,084 | 7,268 | 27,119 | 478,333 | 429,569 | 952,075 | 764,802 | 94,160 | 1,921 | - | 1,812,958 |
| 14-Year Average | | 2 | 191 | 506 | 519 | 1,937 | 34,167 | 30,684 | 68,005 | 54,629 | 6,726 | 137 | | 129,497 |

* Subtotal through 31 August

TABLE 34
 YEARLY PERCENTAGE OF SALMONIDS COUNTED OVER EACH FISH LADDER
 THE DALLES DAM - 1957-1970

| Year | Chinook | | Sockeye | | Coho | | Steelhead | | Percent of total count* of Salmonids | |
|------|---------|-------|---------|-------|-------|-------|-----------|-------|--------------------------------------|-------|
| | East | North | East | North | East | North | East | North | East | North |
| 1957 | 57.4 | 42.6 | 47.2 | 52.8 | 61.8 | 38.2 | 55.6 | 44.4 | 55.3 | 44.7 |
| 1958 | 63.4 | 36.6 | 46.5 | 53.5 | 78.1 | 21.9 | 69.8 | 30.2 | 61.4 | 38.6 |
| 1959 | 71.4 | 28.6 | 52.0 | 48.0 | 72.5 | 27.5 | 77.2 | 22.8 | 69.7 | 30.3 |
| 1960 | 77.7 | 22.3 | 57.3 | 42.7 | 79.4 | 20.6 | 84.7 | 15.3 | 76.6 | 23.4 |
| 1961 | 80.0 | 20.0 | 58.9 | 41.1 | 79.9 | 20.1 | 83.0 | 17.0 | 80.1 | 19.9 |
| 1962 | 69.8 | 30.2 | 59.7 | 42.3 | 66.3 | 33.7 | 74.5 | 25.5 | 71.0 | 29.0 |
| 1963 | 75.7 | 24.3 | 49.0 | 51.0 | 68.2 | 31.8 | 77.8 | 22.2 | 72.1 | 27.9 |
| 1964 | 75.4 | 24.6 | 52.6 | 47.4 | 81.4 | 18.6 | 80.4 | 19.6 | 72.2 | 27.8 |
| 1965 | 77.7 | 22.3 | 47.4 | 52.6 | 79.0 | 21.0 | 76.7 | 23.3 | 74.0 | 26.0 |
| 1966 | 81.8 | 18.2 | 46.0 | 54.0 | 86.6 | 13.4 | 82.8 | 17.2 | 73.0 | 27.0 |
| 1967 | 82.7 | 17.3 | 51.0 | 49.0 | 86.9 | 13.1 | 89.2 | 10.8 | 75.5 | 22.5 |
| 1968 | 81.9 | 18.1 | 54.4 | 45.6 | 84.5 | 15.5 | 85.9 | 14.1 | 77.2 | 22.8 |
| 1969 | 78.3 | 21.7 | 68.0 | 32.0 | 83.3 | 16.7 | 89.9 | 12.1 | 79.9 | 20.1 |
| 1970 | 87.9 | 12.1 | 67.7 | 32.3 | 87.2 | 12.7 | 92.0 | 8.0 | 85.4 | 14.6 |
| 1971 | 82.66 | 11.34 | 56.92 | 43.08 | 92.51 | 7.49 | 93.59 | 6.41 | 87.12 | 12.88 |

* Not including chum or pink salmon.

TABLE 35

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER JOHN DAY DAM

1970

| SPECIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|--------------|-----|-----|-----|--------|--------|---------|---------|--------|---------|--------|-----|-----|---------|
| CHINOOK | - | - | - | 35,750 | 35,248 | 20,439 | 21,542 | 24,784 | 80,969 | 3,774 | - | - | 222,506 |
| STEELHEAD | - | - | - | 1,987 | 1,279 | 253 | 7,373 | 19,412 | 46,036 | 6,100 | - | - | 82,440 |
| SOCKEYE | - | - | - | - | - | 18,029 | 58,176 | 1,909 | 19 | - | - | - | 78,133 |
| COHO | - | - | - | - | - | - | 14 | 1,026 | 17,272 | 1,231 | - | - | 19,543 |
| CHUM | - | - | - | - | - | - | - | - | 1 | 1 | - | - | 2 |
| TOTAL SALMON | - | - | - | 37,737 | 36,527 | 38,721 | 87,105 | 47,131 | 144,297 | 11,106 | - | - | 402,624 |
| SHAD | - | - | - | - | 12 | 100,050 | 107,091 | 367 | 9 | 1 | - | - | 207,530 |

TABLE 36

MONTHLY COUNT OF CHINOOK, STEELHEAD, SOCKEYE AND COHO OVER JOHN DAY DAM

1968 - 1970

MONTHLY COUNT OF CHINOOK SALMON

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total for Year | Spring Apr 1* Jun 5 | Summer Jun 6 Aug 5 | Fall Aug 6 Oct 31* |
|-----------|-----|-----|-----|--------|---------|--------|--------|--------|---------|--------|-----|-----|----------------------|---------------------------|--------------------------|--------------------------|
| 1968 | - | - | - | 29,973 | 46,272 | 30,702 | 42,212 | 16,726 | 62,709 | 4,851 | 290 | - | 233,654 | 77,482 | 75,494 | 80,678 |
| 1969 | - | - | 6 | 4,266 | 72,966 | 35,899 | 31,071 | 18,523 | 103,778 | 9,542 | - | - | 276,051 | 81,724 | 64,732 | 129,595 |
| 1970 | - | - | - | 35,750 | 35,248 | 20,439 | 21,542 | 24,784 | 80,969 | 3,774 | - | - | 222,506 | 72,555 | 43,093 | 106,858 |
| Total | - | - | 6 | 69,989 | 154,486 | 87,040 | 94,825 | 60,033 | 247,456 | 18,167 | 209 | - | 732,211 | 231,761 | 183,319 | 317,131 |
| 3 Yr Ave. | - | - | 2 | 23,330 | 51,495 | 29,013 | 31,608 | 20,011 | 82,485 | 6,056 | 65 | - | 244,070 | 77,254 | 61,108 | 105,710 |

* 1971 only. Beginning and termination of counting for previous years may vary slightly.

MONTHLY COUNT OF STEELHEAD TROUT

| 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 |
| Total | - | - | 314 | 9,912 | 7,629 | 1,118 | 25,471 | 59,503 | 154,909 | 29,795 | 1,393 | - | 290,044 |
| 3-Yr Av. | - | - | 105 | 3,304 | 2,543 | 373 | 8,490 | 19,834 | 51,636 | 9,932 | 464 | - | 96,681 |

MONTHLY COUNT OF SOCKEYE SALMON

| 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 |
| Total | - | - | - | - | - | 73,587 | 129,292 | 2,844 | 88 | 15 | 1 | - | 205,827 |
| 3-Yr Av. | - | - | - | - | - | 24,529 | 43,097 | 938 | 29 | 5 | - | - | 68,609 |

MONTHLY COUNT OF COHO SALMON

| 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 |
| Total | - | - | - | - | - | - | 43 | 2,645 | 60,033 | 8,456 | 188 | - | 71,365 |
| 3-Yr Av. | - | - | - | - | - | - | 14 | 882 | 20,011 | 2,819 | 63 | - | 23,788 |

TABLE 37
SALMONID AND SHAD COUNT - APRIL, MAY & JUNE 1970
JOHN DAY DAM

| Date | APRIL | | | MAY | | | | JUNE | | | | | Date |
|------|---------|------------|----------------|---------|------------|----------------|------|---------|---------|------------|----------------|---------|------|
| | Chinook | Steel-head | Total Salmonid | Chinook | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Steel-head | Total Salmonid | Shad | |
| 1 | | | | 2,852 | 39 | 2,891 | | 154 | | 3 | 157 | | 1 |
| 2 | | | | 2,806 | 60 | 2,866 | | 298 | | 8 | 306 | 5 | 2 |
| 3 | | | | 4,294 | 149 | 4,443 | | 299 | | 10 | 309 | 7 | 3 |
| 4 | | | | 5,485 | 166 | 5,651 | | 348 | | 7 | 355 | 11 | 4 |
| 5 | 84 | 187 | 271 | 2,556 | 42 | 2,598 | | 458 | | 5 | 463 | 29 | 5 |
| 6 | 209 | 103 | 312 | 1,671 | 40 | 1,711 | | 347 | | | 347 | 72 | 6 |
| 7 | 302 | 132 | 434 | 2,405 | 82 | 2,487 | | 289 | | 1 | 290 | 126 | 7 |
| 8 | 725 | 153 | 878 | 2,343 | 70 | 2,413 | | 572 | 1 | 3 | 576 | 123 | 8 |
| 9 | 561 | 114 | 675 | 807 | 57 | 864 | | 366 | | 3 | 369 | 165 | 9 |
| 10 | 974 | 70 | 444 | 1,723 | 44 | 1,767 | | 546 | | 1 | 547 | 386 | 10 |
| 11 | 626 | 98 | 624 | 743 | 30 | 773 | | 459 | 7 | 6 | 472 | 699 | 11 |
| 12 | 1,945 | 162 | 2,107 | 329 | 14 | 343 | | 701 | 15 | 4 | 720 | 1,045 | 12 |
| 13 | 825 | 107 | 932 | 788 | 27 | 815 | | 688 | 21 | 5 | 714 | 743 | 13 |
| 14 | 501 | 83 | 584 | 557 | 18 | 575 | | 780 | 47 | 1 | 828 | 1,664 | 14 |
| 15 | 597 | 66 | 663 | 254 | 22 | 276 | | 674 | 50 | 5 | 729 | 913 | 15 |
| 16 | 1,538 | 99 | 1,637 | 407 | 33 | 440 | | 807 | 79 | 3 | 889 | 840 | 16 |
| 17 | 509 | 56 | 565 | 319 | 21 | 340 | | 788 | 79 | 10 | 877 | 1,163 | 17 |
| 18 | 260 | 51 | 311 | 712 | 39 | 751 | | 598 | 132 | 4 | 734 | 2,490 | 18 |
| 19 | 1,003 | 55 | 1,058 | 681 | 54 | 735 | | 648 | 195 | 4 | 847 | 2,131 | 19 |
| 20 | 1,693 | 30 | 1,723 | 620 | 73 | 693 | | 584 | 302 | 4 | 890 | 2,761 | 20 |
| 21 | 210 | 22 | 232 | 514 | 45 | 559 | | 737 | 485 | 18 | 1,240 | 3,753 | 21 |
| 22 | 329 | 28 | 357 | 392 | 31 | 423 | | 1,231 | 1,032 | 9 | 2,272 | 5,346 | 22 |
| 23 | 1,236 | 40 | 1,276 | 246 | 22 | 268 | | 1,070 | 1,492 | 10 | 2,572 | 8,758 | 23 |
| 24 | 5,018 | 68 | 5,086 | 98 | 12 | 110 | | 988 | 1,871 | 7 | 2,866 | 8,132 | 24 |
| 25 | 3,339 | 41 | 3,380 | 166 | 23 | 189 | | 620 | 1,708 | 6 | 2,334 | 8,243 | 25 |
| 26 | 3,833 | 37 | 3,870 | 406 | 9 | 415 | | 828 | 2,028 | 23 | 2,879 | 11,330 | 26 |
| 27 | 4,308 | 46 | 4,354 | 388 | 15 | 403 | | 1,061 | 2,381 | 19 | 3,461 | 11,263 | 27 |
| 28 | 1,949 | 39 | 1,988 | 212 | 12 | 224 | | 1,342 | 2,447 | 25 | 3,814 | 7,879 | 28 |
| 29 | 1,836 | 52 | 1,888 | 149 | 13 | 162 | 1 | 1,070 | 1,822 | 21 | 2,913 | 9,087 | 29 |
| 30 | 1,940 | 48 | 1,988 | 171 | 10 | 181 | | 1,088 | 1,835 | 28 | 2,951 | 10,886 | 30 |
| 31 | | | | 154 | 7 | 161 | 11 | | | | | | 31 |
| | 35,750 | 1,987 | 37,737 | 35,248 | 1,279 | 36,527 | 12 | 20,439 | 18,029 | 253 | 38,721 | 100,050 | |

TABLE 37

TABLE 38
SALMONID AND SHAD COUNT - JULY AND AUGUST 1970
JOHN DAY DAM

TABLE 38

| Date | JULY | | | | | | AUGUST | | | | | | Date |
|------|---------------|---------------|-----------|--------------|----------------|----------------|---------------|--------------|--------------|---------------|----------------|------------|------|
| | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | Shad | |
| 1 | 783 | 1,480 | | 13 | 2,276 | 14,238 | 678 | 342 | | 755 | 1,775 | 43 | 1 |
| 2 | 667 | 1,178 | | 23 | 1,868 | 7,788 | 357 | 221 | | 400 | 978 | 25 | 2 |
| 3 | 559 | 1,461 | | 20 | 2,040 | 10,049 | 452 | 187 | | 762 | 1,401 | 22 | 3 |
| 4 | 610 | 2,175 | | 33 | 2,818 | 9,573 | 781 | 169 | | 880 | 1,830 | 50 | 4 |
| 5 | 1,187 | 3,608 | | 41 | 4,836 | 7,600 | 401 | 123 | | 505 | 1,029 | 19 | 5 |
| 6 | 1,582 | 4,119 | | 68 | 5,769 | 6,611 | 754 | 168 | | 662 | 1,584 | 37 | 6 |
| 7 | 800 | 3,071 | | 41 | 3,912 | 6,849 | 758 | 116 | 1 | 738 | 1,613 | 38 | 7 |
| 8 | 574 | 2,724 | | 62 | 3,360 | 6,206 | 545 | 92 | | 746 | 1,383 | 19 | 8 |
| 9 | 433 | 3,119 | | 90 | 3,642 | 4,324 | 368 | 89 | | 568 | 1,025 | 14 | 9 |
| 10 | 1,244 | 3,516 | | 108 | 4,868 | 3,994 | 431 | 63 | | 726 | 1,220 | 15 | 10 |
| 11 | 1,897 | 3,401 | | 131 | 5,429 | 4,084 | 810 | 80 | | 801 | 1,691 | 10 | 11 |
| 12 | 965 | 3,297 | | 186 | 4,448 | 3,567 | 468 | 44 | | 424 | 936 | 3 | 12 |
| 13 | 717 | 2,817 | | 239 | 3,773 | 2,184 | 747 | 38 | | 648 | 1,433 | 9 | 13 |
| 14 | 669 | 2,725 | | 228 | 3,622 | 2,468 | 450 | 25 | | 649 | 1,124 | 5 | 14 |
| 15 | 271 | 1,656 | | 154 | 2,081 | 1,825 | 661 | 16 | 1 | 566 | 1,244 | 12 | 15 |
| 16 | 1,244 | 3,957 | | 317 | 5,518 | 5,518 | 632 | 17 | 7 | 461 | 1,117 | 6 | 16 |
| 17 | 416 | 1,921 | | 234 | 2,571 | 2,571 | 841 | 12 | | 686 | 1,539 | 11 | 17 |
| 18 | 268 | 1,598 | | 166 | 2,032 | 2,032 | 454 | 11 | 1 | 437 | 903 | 8 | 18 |
| 19 | 441 | 1,427 | | 206 | 2,074 | 2,074 | 142 | 11 | 3 | 115 | 271 | | 19 |
| 20 | 707 | 1,540 | | 235 | 2,482 | 2,482 | 1,243 | 19 | 8 | 764 | 2,034 | 2 | 20 |
| 21 | 861 | 1,284 | | 392 | 2,537 | 2,537 | 920 | 12 | 13 | 790 | 1,735 | 5 | 21 |
| 22 | 383 | 718 | | 248 | 1,349 | 1,349 | 1,427 | 5 | 22 | 979 | 2,433 | 5 | 22 |
| 23 | 330 | 914 | | 311 | 1,555 | 1,555 | 1,238 | 12 | 45 | 748 | 2,043 | | 23 |
| 24 | 694 | 1,021 | 8 | 425 | 2,148 | 2,148 | 1,036 | 6 | 52 | 456 | 1,550 | 2 | 24 |
| 25 | 470 | 746 | 5 | 356 | 1,577 | 1,577 | 1,230 | 6 | 59 | 786 | 2,081 | 1 | 25 |
| 26 | 300 | 379 | 1 | 364 | 1,044 | 1,044 | 1,152 | 8 | 42 | 555 | 1,757 | 2 | 26 |
| 27 | 609 | 642 | | 676 | 1,927 | 1,927 | 1,163 | 3 | 42 | 498 | 1,706 | | 27 |
| 28 | 415 | 473 | | 505 | 1,393 | 1,393 | 1,023 | 1 | 191 | 472 | 1,687 | 1 | 28 |
| 29 | 513 | 445 | | 343 | 1,301 | 1,301 | 1,112 | 7 | 116 | 575 | 1,810 | 1 | 29 |
| 30 | 611 | 438 | | 667 | 1,716 | 1,716 | 940 | 3 | 160 | 545 | 1,648 | | 30 |
| 31 | 322 | 326 | | 491 | 1,139 | 1,139 | 1,570 | 3 | 263 | 715 | 2,551 | 2 | 31 |
| | 21,542 | 58,176 | 14 | 7,373 | 87,105 | 107,091 | 24,784 | 1,909 | 1,026 | 19,412 | 47,131 | 367 | |

TABLE 39
SALMONID AND SHAD COUNT - SEPTEMBER AND OCTOBER 1970
JOHN DAY DAM

| Date | SEPTEMBER | | | | | | | OCTOBER* | | | | | | Date |
|------|-----------|---------|--------|------|------------|----------------|------|----------|-------|------------|------|----------------|------|------|
| | Chinook | Sockeye | Coho | Chum | Steel-head | Total Salmonid | Shad | Chinook | Coho | Steel-head | Chum | Total Salmonid | Shad | |
| 1 | 1,289 | | 306 | | 508 | 2,103 | 1 | 515 | 139 | 556 | | 1,210 | | 1 |
| 2 | 1,374 | | 307 | | 412 | 2,093 | 2 | 462 | 58 | 380 | | 900 | | 2 |
| 3 | 1,121 | | 403 | | 415 | 1,939 | 1 | 371 | 66 | 564 | | 1,001 | | 3 |
| 4 | 1,569 | 1 | 240 | | 680 | 2,490 | 3 | 324 | 62 | 411 | | 797 | | 4 |
| 5 | 1,964 | 1 | 253 | | 621 | 2,839 | 1 | 275 | 63 | 327 | | 665 | | 5 |
| 6 | 3,125 | 1 | 312 | | 1,505 | 4,943 | | 157 | 102 | 262 | | 521 | | 6 |
| 7 | 3,395 | | 532 | | 1,958 | 5,885 | 1 | 229 | 172 | 459 | | 860 | | 7 |
| 8 | 4,312 | | 647 | | 2,484 | 7,443 | -1 | 173 | 117 | 346 | | 636 | 1 | 8 |
| 9 | 4,421 | 4 | 923 | | 2,782 | 8,130 | | 111 | 76 | 247 | 1 | 435 | | 9 |
| 10 | 4,800 | | 815 | | 2,722 | 8,337 | | 126 | 35 | 268 | | 429 | | 10 |
| 11 | 4,623 | 2 | 1,319 | | 3,280 | 9,224 | | 102 | 51 | 209 | | 362 | | 11 |
| 12 | 6,408 | 1 | 1,163 | | 4,159 | 11,731 | | 118 | 43 | 209 | | 370 | | 12 |
| 13 | 6,728 | 1 | 1,215 | | 3,452 | 11,396 | | 136 | 41 | 280 | | 457 | | 13 |
| 14 | 6,643 | | 1,316 | | 2,700 | 10,659 | | 87 | 18 | 183 | | 288 | | 14 |
| 15 | 4,022 | 2 | 1,033 | | 2,156 | 7,213 | | 87 | 21 | 237 | | 345 | | 15 |
| 16 | 3,313 | | 846 | | 1,415 | 5,574 | | 56 | 18 | 189 | | 263 | | 16 |
| 17 | 4,373 | 1 | 913 | | 2,030 | 7,317 | 1 | 90 | 16 | 172 | | 278 | | 17 |
| 18 | 3,639 | 1 | 830 | | 1,813 | 6,283 | | 76 | 9 | 120 | | 205 | | 18 |
| 19 | 2,973 | | 813 | | 1,715 | 5,501 | | 54 | 9 | 101 | | 164 | | 19 |
| 20 | 2,414 | 1 | 738 | | 1,473 | 4,626 | | 39 | 13 | 86 | | 138 | | 20 |
| 21 | 1,999 | | 579 | 1 | 1,538 | 4,117 | | 34 | 12 | 106 | | 152 | | 21 |
| 22 | 1,116 | | 252 | | 835 | 2,203 | | 46 | 29 | 89 | | 164 | | 22 |
| 23 | 712 | 2 | 165 | | 559 | 1,438 | | 49 | 39 | 129 | | 217 | | 23 |
| 24 | 674 | | 175 | | 537 | 1,386 | | 57 | 22 | 170 | | 249 | | 24 |
| 25 | 729 | | 168 | | 734 | 1,631 | | | | | | | | 25 |
| 26 | 1,065 | | 319 | | 953 | 2,337 | | | | | | | | 26 |
| 27 | 814 | | 260 | | 836 | 1,910 | | | | | | | | 27 |
| 28 | 345 | 1 | 148 | | 505 | 999 | | | | | | | | 28 |
| 29 | 599 | | 175 | | 822 | 1,569 | | | | | | | | 29 |
| 30 | 410 | | 107 | | 437 | 954 | | | | | | | | 30 |
| 31 | | | | | | | | | | | | | | 31 |
| | 80,969 | 19 | 17,272 | 1 | 46,036 | 144,297 | 9 | 3,774 | 1,231 | 6,100 | 1 | 11,106 | 1 | |

* Counting was terminated 24 October.

TABLE 39

TABLE 40

YEARLY TOTALS OF SALMONID FISH COUNTED OVER McNARY DAM

1954 - 1970

| <u>Year</u> | <u>Chinook</u> | <u>Steelhead</u> | <u>Sockeye</u> | <u>Coho</u> | <u>Chum</u> | <u>Total Salmon</u> |
|--------------------|----------------|------------------|----------------|-------------|-------------|-------------------------|
| 1954 | 126,555 | 75,059 | 108,181 | 950 | 1 | 310,746 |
| 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 | | 468,739 |
| 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 |
| TOTAL | 2,999,490 | 1,686,240 | 1,411,870 | 189,785 | 1 | 6,287,386 |
| 17-year Average | 176,441 | 99,191 | 83,051 | 11,164 | | 369,846 |

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

TABLE 41
MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER McNARY DAM
1970

| <u>Species</u> | <u>Jan</u> | <u>Feb</u> | <u>Mar</u> | <u>Apr</u> | <u>May</u> | <u>Jun</u> | <u>Jul</u> | <u>Aug</u> | <u>Sep</u> | <u>Oct</u> | <u>Nov</u> | <u>Dec</u> | <u>Total</u> |
|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Chinook | - | - | - | 28,015 | 34,027 | 18,661 | 23,132 | 13,773 | 44,635 | 6,649 | - | - | 168,892 |
| Sockeye | - | - | - | - | - | 7,152 | 47,339 | 5,134 | 11 | - | - | - | 59,636 |
| Coho | - | - | - | - | - | - | - | 3,576 | 31,161 | 1,662 | - | - | 36,399 |
| Steelhead | - | - | - | 1,347 | 1,001 | 340 | 5,183 | 15,236 | 39,150 | 7,502 | - | - | 69,759 |
| Total Salmon | - | - | - | 29,362 | 35,028 | 26,153 | 75,654 | 37,719 | 114,957 | 15,813 | - | - | 334,686 |
| Shad | - | - | - | - | - | 35,080 | 72,107 | 101 | - | - | - | - | 108,350 |

TABIE 41

TABLE 42

CLIMATOLOGICAL AND STREAM FLOW DATA

McNARY DAM

TABLE 42

| JANUARY 1970 | | | | | FEBRUARY 1970 | | | | | MARCH 1970 | | | | |
|---------------------------------|--------------|------------|------------|-----------------------|---------------------------------|--------------|------------|------------|-----------------------|---------------------------------|--------------|------------|------------|-----------------------|
| <u>Temperatures</u> (Deg. F) | | | | | <u>Temperatures</u> (Deg. F) | | | | | <u>Temperatures</u> (Deg. F) | | | | |
| <u>DATE</u> | <u>AIR</u> | | | <u>RIVER FLOW-cfs</u> | <u>DATE</u> | <u>AIR</u> | | | <u>RIVER FLOW-cfs</u> | <u>DATE</u> | <u>AIR</u> | | | <u>RIVER FLOW-cfs</u> |
| | <u>WATER</u> | <u>MAX</u> | <u>MIN</u> | | | <u>WATER</u> | <u>MAX</u> | <u>MIN</u> | | | <u>WATER</u> | <u>MAX</u> | <u>MIN</u> | |
| 1 | 45 | 37 | 30 | 92,700 | 1 | 40 | 50 | 34 | 107,600 | 1 | 42 | 43 | 31 | 137,900 |
| 2 | 45 | 34 | 30 | 145,600 | 2 | 40 | 52 | 38 | 129,400 | 2 | 42 | 33 | 29 | 154,500 |
| 3 | 45 | 35 | 30 | 138,500 | 3 | 40 | 51 | 37 | 138,700 | 3 | 42 | 42 | 29 | 180,400 |
| 4 | 45 | 32 | 28 | 131,900 | 4 | 40 | 48 | 33 | 122,200 | 4 | 42 | 45 | 37 | 130,100 |
| 5 | 45 | 32 | 19 | 131,400 | 5 | 40 | 46 | 33 | 153,500 | 5 | 42 | 48 | 29 | 122,900 |
| 6 | 44 | 32 | 18 | 153,600 | 6 | 40 | 41 | 35 | 134,500 | 6 | 42 | 49 | 29 | 128,900 |
| 7 | 42 | 32 | 17 | 161,100 | 7 | 40 | 42 | 36 | 111,100 | 7 | 42 | 53 | 40 | 109,200 |
| 8 | 42 | 28 | 17 | 142,100 | 8 | 40 | 45 | 38 | 76,000 | 8 | 42 | 56 | 34 | 96,400 |
| 9 | 41 | 32 | 24 | 125,500 | 9 | 40 | 43 | 38 | 122,200 | 9 | 42 | 56 | 31 | 94,800 |
| 10 | 41 | 34 | 28 | 116,000 | 10 | 40 | 42 | 39 | 139,400 | 10 | 42 | 54 | 30 | 141,700 |
| 11 | 41 | 36 | 26 | 81,200 | 11 | 40 | 42 | 38 | 146,300 | 11 | 42 | 55 | 31 | 141,100 |
| 12 | 41 | 44 | 27 | 124,000 | 12 | 40 | 42 | 37 | 108,600 | 12 | 42 | 49 | 34 | 126,700 |
| 13 | 41 | 35 | 31 | 124,200 | 13 | 40 | 44 | 38 | 155,500 | 13 | 42 | 54 | 42 | 126,400 |
| 14 | 40 | 43 | 33 | 124,200 | 14 | 40 | 52 | 39 | 122,200 | 14 | 42 | 61 | 44 | 111,200 |
| 15 | 40 | 52 | 35 | 121,800 | 15 | 40 | 56 | 38 | 119,800 | 15 | 42 | 60 | 41 | 130,000 |
| 16 | 40 | 42 | 28 | 137,700 | 16 | 40 | 50 | 40 | 118,200 | 16 | 42 | 60 | 41 | 153,000 |
| 17 | 40 | 32 | 25 | 126,500 | 17 | 40 | 49 | 40 | 154,400 | 17 | 42 | 58 | 35 | 173,300 |
| 18 | 40 | 33 | 24 | 104,100 | 18 | 40 | 53 | 38 | 128,000 | 18 | 42 | 52 | 36 | 146,600 |
| 19 | 40 | 49 | 28 | 130,700 | 19 | 41 | 53 | 34 | 160,100 | 19 | 42 | 54 | 33 | 127,300 |
| 20 | 40 | 33 | 29 | 143,200 | 20 | 42 | 54 | 31 | 141,100 | 20 | 43 | 60 | 32 | 134,000 |
| 21 | 40 | 41 | 36 | 142,400 | 21 | 42 | 49 | 30 | 148,900 | 21 | 43 | 61 | 39 | 144,400 |
| 22 | 40 | 40 | 36 | 197,500 | 22 | 42 | 48 | 30 | 109,200 | 22 | 44 | 59 | 38 | 134,500 |
| 23 | 40 | 44 | 37 | 166,600 | 23 | 42 | 54 | 30 | 142,100 | 23 | 44 | 60 | 39 | 130,000 |
| 24 | 40 | 47 | 36 | 173,600 | 24 | 42 | 51 | 33 | 151,700 | 24 | 44 | 59 | 43 | 153,500 |
| 25 | 40 | 48 | 41 | 149,600 | 25 | 42 | 45 | 30 | 120,700 | 25 | 44 | 64 | 36 | 153,000 |
| 26 | 40 | 49 | 38 | 148,500 | 26 | 42 | 47 | 30 | 142,900 | 26 | 44 | 62 | 36 | 139,600 |
| 27 | 40 | 48 | 43 | 186,400 | 27 | 42 | 45 | 29 | 139,000 | 27 | 44 | 65 | 34 | 132,800 |
| 28 | 40 | 48 | 35 | 170,300 | 28 | 42 | 52 | 27 | 149,400 | 28 | 44 | 67 | 37 | 132,300 |
| 29 | 40 | 47 | 30 | 160,500 | | | | | | 29 | 45 | 65 | 45 | 113,200 |
| 30 | 40 | 44 | 29 | 131,800 | | | | | | 30 | 46 | 59 | 41 | 134,100 |
| 31 | 40 | 42 | 29 | 155,800 | | | | | | 31 | 46 | 59 | 35 | 127,600 |

TABLE 43

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNT- APRIL 1970

McNARY DAM

| DATE | WATER TEMPERATURE | RIVER | | | CHINOOK | STEELHEAD | TOTAL |
|-------|----------------------|--------------------|--------------------|---------|-------------------|-----------|--------|
| | | TURBIDITY NORTH | TURBIDITY SOUTH | FLOW | | | |
| 1 | 46 | 3.0 | 2.0 | 162,600 | 2 | 26 | 28 |
| 2 | 46 | 3.0 | 2.3 | 164,100 | 10 | 50 | 60 |
| 3 | 46 | 3.1 | 2.0 | 162,400 | 5 | 55 | 60 |
| 4 | 46 | 3.3 | 2.3 | 129,400 | 12 | 56 | 68 |
| 5 | 46 | 3.2 | 2.0 | 81,100 | 83 | 74 | 157 |
| 6 | 47 | 3.6 | 2.7 | 126,300 | 36 | 51 | 87 |
| 7 | 47 | 3.2 | 2.1 | 135,100 | 29 | 73 | 102 |
| 8 | 47 | 3.8 | 2.3 | 137,800 | 63 | 108 | 171 |
| 9 | 47 | 3.8 | 2.1 | 174,300 | 170 | 141 | 311 |
| 10 | 47 | 3.8 | 2.1 | 148,200 | 113 | 51 | 164 |
| 11 | 47 | 3.7 | 2.5 | 154,000 | 507 | 67 | 574 |
| 12 | 47 | 3.4 | 2.7 | 110,500 | 519 | 48 | 567 |
| 13 | 47 | 3.7 | 2.4 | 142,600 | 334 | 29 | 363 |
| 14 | 47 | 3.5 | 2.4 | 144,400 | 570 | 19 | 589 |
| 15 | 47 | 3.4 | 2.3 | 159,600 | 1281 | 42 | 1323 |
| 16 | 47 | 3.5 | 2.1 | 160,800 | 836 | 32 | 868 |
| 17 | 47 | 3.6 | 2.3 | 127,100 | 877 | 39 | 916 |
| 18 | 47 | 3.5 | 2.7 | 118,700 | 759 | 51 | 810 |
| 19 | 47 | 3.5 | 2.7 | 132,500 | 777 | 58 | 835 |
| 20 | 47 | 3.6 | 2.7 | 166,300 | 701 | 58 | 759 |
| 21 | 47 | 3.5 | 2.5 | 163,700 | 428 | 39 | 467 |
| 22 | 47 | 3.9 | 2.3 | 159,500 | 1323 | 34 | 1357 |
| 23 | 47 | 3.6 | 2.8 | 138,600 | 1048 | 23 | 1071 |
| 24 | 47 | 3.6 | 2.5 | 145,300 | 364 | 5 | 369 |
| 25 | 48 | 3.5 | 2.9 | 157,100 | 500 | 17 | 517 |
| 26 | 48 | 3.2 | 2.7 | 110,300 | 2767 | 25 | 2792 |
| 27 | 48 | 3.8 | 2.9 | 141,300 | 3196 ¹ | 17 | 3213 |
| 28 | 48 | 3.7 | 3.1 | 160,500 | 3694 | 21 | 3715 |
| 29 | 48 | 3.5 | 3.0 | 152,600 | 2087 | 15 | 2102 |
| 30 | 48 | 3.6 | 2.8 | 160,500 | 4924 | 23 | 4947 |
| Total | | | | | 28,015 | 1,347 | 29,362 |

TABLE 43

1/ Jack salmonids are included.

TABLE 44

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNT - MAY 1970

McNARY DAM

TABLE 44

| DATE | WATER TEMPERATURE | RIVER | | | CHINOOK | STEELHEAD | TOTAL |
|-------|-------------------|-----------|-------|---------|---------|-----------|--------|
| | | TURBIDITY | | FLOW | | | |
| | | NORTH | SOUTH | | | | |
| 1 | 50 | 4.0 | 3.0 | 149,500 | 2391 | 24 | 2415 |
| 2 | 50 | 4.0 | 3.0 | 131,800 | 2047 | 20 | 2067 |
| 3 | 50 | 4.0 | 3.5 | 97,500 | 2439 | 26 | 2465 |
| 4 | 50 | 4.0 | 3.7 | 143,000 | 2397 | 28 | 2425 |
| 5 | 50 | 4.3 | 3.9 | 167,600 | 2685 | 32 | 2717 |
| 6 | 50 | 4.0 | 4.0 | 177,400 | 3874 | 38 | 3912 |
| 7 | 50 | 4.2 | 3.0 | 186,000 | 3530 | 55 | 3585 |
| 8 | 52 | 4.0 | 3.3 | 167,000 | 1000 | 52 | 1052 |
| 9 | 53 | 4.2 | 2.2 | 175,800 | 612 | 26 | 638 |
| 10 | 53 | 3.6 | 3.1 | 180,500 | 945 | 37 | 982 |
| 11 | 53 | 3.8 | 2.8 | 179,800 | 2691 | 81 | 2772 |
| 12 | 53 | 3.3 | 2.9 | 197,400 | 1647 | 61 | 1708 |
| 13 | 53 | 3.2 | 2.8 | 178,400 | 1420 | 30 | 1450 |
| 14 | 53 | 3.3 | 3.3 | 142,400 | 862 | 24 | 886 |
| 15 | 53 | 3.7 | 2.9 | 160,900 | 477 | 13 | 490 |
| 16 | 53 | 3.6 | 3.3 | 168,400 | 423 | 15 | 438 |
| 17 | 53 | 3.5 | 3.3 | 199,000 | 396 | 18 | 414 |
| 18 | 53 | 3.6 | 3.5 | 242,700 | 310 | 22 | 332 |
| 19 | 53 | 3.8 | 3.5 | 303,000 | 363 | 39 | 402 |
| 20 | 53 | 3.6 | 3.5 | 327,500 | 431 | 44 | 475 |
| 21 | 53 | 3.5 | 3.0 | 339,300 | 419 | 52 | 471 |
| 22 | 53 | 3.6 | 3.2 | 341,900 | 376 | 51 | 427 |
| 23 | 53 | 3.5 | 3.6 | 322,500 | 485 | 40 | 525 |
| 24 | 53 | 3.6 | 3.2 | 374,200 | 259 | 27 | 286 |
| 25 | 53 | 3.5 | 3.5 | 400,200 | 337 | 31 | 368 |
| 26 | 54 | 3.6 | 2.6 | 412,900 | 144 | 20 | 164 |
| 27 | 55 | 3.5 | 2.7 | 426,500 | 132 | 17 | 149 |
| 28 | 55 | 3.7 | 2.4 | 420,000 | 157 | 28 | 185 |
| 29 | 55 | 3.6 | 2.4 | 393,400 | 312 | 20 | 332 |
| 30 | 55 | 4.0 | 1.9 | 365,900 | 263 | 13 | 276 |
| 31 | 55 | 4.0 | 2.2 | 354,000 | 203 | 17 | 220 |
| TOTAL | | | | | 34,027 | 1,001 | 35,028 |

TABLE 45
 CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT - JUNE 1970
 McNARY DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | CHINOOK | TOTAL SALMONIDS | SHAD |
|-------|-------------------|-----------|---------|-----------|---------|---------|-----------------|--------|
| 1 | 55 | 2.7 | 354,800 | 8 | | 204 | 212 | |
| 2 | 55 | 2.5 | 357,100 | 5 | | 153 | 158 | |
| 3 | 55 | 2.9 | 377,800 | 3 | | 191 | 194 | |
| 4 | 55 | 2.7 | 399,100 | 5 | | 155 | 160 | |
| 5 | 55 | 2.7 | 426,300 | 3 | | 195 | 198 | |
| 6 | 55 | 2.5 | 432,600 | 2 | | 223 | 225 | |
| 7 | 56 | 2.5 | 416,100 | 6 | | 396 | 402 | |
| 8 | 56 | 4.0 | 397,200 | 4 | | 423 | 427 | |
| 9 | 56 | 2.5 | 370,600 | 9 | | 307 | 316 | 3 |
| 10 | 56 | 2.3 | 364,000 | 5 | | 372 | 377 | |
| 11 | 56 | 1.8 | 356,300 | 13 | | 353 | 366 | |
| 12 | 56 | 2.0 | 326,500 | 6 | | 444 | 450 | 36 |
| 13 | 56 | 1.6 | 316,600 | 4 | | 329 | 333 | 23 |
| 14 | 56 | 2.1 | 302,500 | 6 | | 452 | 458 | 45 |
| 15 | 58 | 2.0 | 310,400 | 9 | | 719 | 728 | 106 |
| 16 | 58 | 2.2 | 337,700 | 3 | | 667 | 670 | 214 |
| 17 | 58 | 2.1 | 327,500 | 2 | | 493 | 495 | 413 |
| 18 | 58 | 2.2 | 327,500 | 0 | | 866 | 866 | 989 |
| 19 | 58 | 2.3 | 325,600 | 2 | | 998 | 1,000 | 1,207 |
| 20 | 58 | 2.5 | 313,700 | 8 | | 830 | 838 | 1,553 |
| 21 | 58 | 2.5 | 314,000 | 13 | 3 | 762 | 778 | 1,085 |
| 22 | 58 | 2.6 | 322,400 | 10 | 18 | 633 | 661 | 1,281 |
| 23 | 58 | 3.0 | 324,700 | 8 | 67 | 931 | 1,006 | 2,132 |
| 24 | 62 | 2.8 | 324,500 | 15 | 155 | 1,088 | 1,258 | 2,464 |
| 25 | 62 | 3.5 | 314,400 | 49 | 583 | 1,238 | 1,870 | 5,294 |
| 26 | 64 | 3.2 | 299,000 | 24 | 759 | 982 | 1,765 | 4,898 |
| 27 | 64 | 2.5 | 258,700 | 23 | 1,021 | 972 | 2,016 | 4,183 |
| 28 | 64 | 2.5 | 249,200 | 19 | 1,514 | 978 | 2,511 | 2,926 |
| 29 | 64 | 2.6 | 265,000 | 26 | 1,588 | 1,133 | 2,747 | 3,232 |
| 30 | 64 | 2.5 | 269,000 | 50 | 1,444 | 1,174 | 2,668 | 2,996 |
| 31 | | | | | | | | |
| TOTAL | | | | 340 | 7,152 | 18,661 | 26,153 | 35,080 |

TABLE 45

TABLE 46

CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT - JULY 1970

McNARY DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL SALMONID | SHAD |
|-------|-------------------|-----------|---------|-----------|---------|------|---------|----------------|--------|
| 1 | 64 | 2.7 | 241,000 | 43 | 1,351 | | 1,087 | 2,481 | 4,083 |
| 2 | 64 | 3.4 | 249,400 | 27 | 1,045 | | 853 | 1,925 | 2,683 |
| 3 | 64 | 2.9 | 256,900 | 36 | 856 | | 699 | 1,591 | 3,584 |
| 4 | 64 | 3.2 | 217,600 | 24 | 865 | | 723 | 1,612 | 4,938 |
| 5 | 64 | 3.0 | 217,800 | 29 | 909 | | 813 | 1,751 | 6,642 |
| 6 | 64 | 4.0 | 212,600 | 36 | 1,739 | | 729 | 2,504 | 7,246 |
| 7 | 66 | 3.2 | 225,400 | 13 | 1,950 | | 780 | 2,743 | 4,115 |
| 8 | 66 | 3.0 | 201,600 | 63 | 3,053 | | 1,629 | 4,745 | 5,490 |
| 9 | 66 | 3.0 | 211,300 | 43 | 2,545 | | 1,235 | 3,823 | 3,861 |
| 10 | 66 | 3.5 | 207,800 | 75 | 2,292 | | 935 | 3,302 | 3,802 |
| 11 | 66 | 4.0 | 154,500 | 60 | 3,081 | | 816 | 3,957 | 3,151 |
| 12 | 66 | 3.8 | 166,700 | 125 | 2,794 | | 940 | 3,859 | 3,091 |
| 13 | 66 | 4.0 | 167,800 | 118 | 2,369 | | 1,704 | 4,191 | 2,006 |
| 14 | 66 | 3.6 | 186,300 | 174 | 2,354 | | 1,072 | 3,600 | 2,941 |
| 15 | 66 | 3.7 | 180,300 | 91 | 2,244 | | 779 | 3,114 | 2,561 |
| 16 | 66 | 4.0 | 174,500 | 162 | 1,925 | | 715 | 2,802 | 3,673 |
| 17 | 68 | 3.6 | 163,700 | 182 | 1,548 | | 485 | 2,215 | 1,136 |
| 18 | 68 | 3.6 | 150,600 | 209 | 2,139 | | 1,025 | 3,373 | 1,577 |
| 19 | 69 | 3.7 | 132,400 | 208 | 1,672 | | 569 | 2,449 | 1,406 |
| 20 | 69 | 4.4 | 153,500 | 172 | 1,467 | | 323 | 1,962 | 945 |
| 21 | 69 | 3.5 | 162,100 | 313 | 1,732 | | 486 | 2,531 | 708 |
| 22 | 69 | 3.4 | 162,000 | 297 | 1,280 | | 699 | 2,276 | 466 |
| 23 | 69 | 3.4 | 142,900 | 195 | 945 | | 652 | 1,792 | 330 |
| 24 | 69 | 3.7 | 156,800 | 197 | 913 | | 433 | 1,543 | 452 |
| 25 | 69 | 4.0 | 125,200 | 275 | 820 | | 280 | 1,375 | 299 |
| 26 | 69 | 3.6 | 116,300 | 324 | 929 | | 633 | 1,886 | 195 |
| 27 | 69 | 4.2 | 123,200 | 288 | 729 | | 418 | 1,435 | 177 |
| 28 | 69 | 3.8 | 156,500 | 307 | 611 | | 329 | 1,247 | 163 |
| 29 | 69 | 3.0 | 147,500 | 424 | 497 | | 482 | 1,403 | 152 |
| 30 | 69 | 3.1 | 166,200 | 361 | 430 | | 401 | 1,192 | 112 |
| 31 | 69 | 3.0 | 173,900 | 312 | 255 | | 408 | 975 | 122 |
| TOTAL | | | | 5,183 | 47,339 | | 23,132 | 75,654 | 72,107 |

TABLE 46

TABLE 47

CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT - AUGUST 1970

McNARY DAM

| DATE | TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL | SHAD |
|-------|-------------|-----------|---------|-----------|---------|-------|---------|--------|-------|
| 1 | 69 | 3.3 | 139,000 | 303 | 454 | | 693 | 1,450 | 196 |
| 2 | 69 | 4.4 | 108,100 | 436 | 356 | | 334 | 1,126 | 89 |
| 3 | 69 | 3.8 | 126,400 | 415 | 372 | | 473 | 1,260 | 70 |
| 4 | 69 | 3.6 | 169,600 | 313 | 272 | | 301 | 886 | 79 |
| 5 | 69 | 3.8 | 131,300 | 346 | 365 | | 279 | 990 | 100 |
| 6 | 69 | 4.2 | 146,200 | 303 | 266 | | 505 | 1,074 | 55 |
| 7 | 69 | 4.0 | 146,700 | 911 | 237 | | 381 | 1,529 | 38 |
| 8 | 69 | 3.7 | 125,200 | 658 | 248 | | 537 | 1,443 | 47 |
| 9 | 69 | 3.8 | 102,700 | 630 | 194 | | 635 | 1,459 | 35 |
| 10 | 69 | 4.4 | 158,600 | 299 | 189 | | 261 | 749 | 17 |
| 11 | 69 | 2.5 | 148,100 | 220 | 144 | | 242 | 606 | 62 |
| 12 | 69 | 3.9 | 134,300 | 437 | 137 | | 415 | 989 | 26 |
| 13 | 69 | 4.0 | 137,800 | 352 | 145 | | 400 | 897 | 33 |
| 14 | 70 | 4.0 | 121,500 | 502 | 144 | | 420 | 1,066 | 35 |
| 15 | 70 | 4.0 | 105,900 | 578 | 104 | | 411 | 1,093 | 28 |
| 16 | 70 | 4.0 | 101,500 | 495 | 99 | | 435 | 1,029 | 18 |
| 17 | 70 | 4.0 | 123,100 | 403 | 102 | | 335 | 840 | 44 |
| 18 | 70 | 4.0 | 139,000 | 556 | 131 | | 380 | 1,067 | 11 |
| 19 | 71 | 3.5 | 125,900 | 632 | 237 | | 495 | 1,364 | 0 |
| 20 | 71 | 4.0 | 122,300 | 376 | 169 | | 282 | 827 | 0 |
| 21 | 71 | 4.8 | 136,000 | 339 | 96 | | 146 | 581 | 9 |
| 22 | 71 | 4.0 | 135,900 | 510 | 188 | 6 | 586 | 1,290 | 17 |
| 23 | 71 | 5.0 | 75,500 | 635 | 194 | 34 | 643 | 1,506 | 2 |
| 24 | 71 | 4.0 | 116,800 | 479 | 125 | 145 | 634 | 1,383 | 6 |
| 25 | 71 | 4.2 | 115,800 | 922 | 52 | 341 | 832 | 2,147 | 37 |
| 26 | 71 | 4.0 | 95,500 | 872 | 49 | 544 | 574 | 2,039 | 3 |
| 27 | 71 | 3.9 | 102,700 | 450 | 21 | 413 | 520 | 1,404 | 5 |
| 28 | 71 | 4.0 | 123,900 | 426 | 27 | 548 | 412 | 1,413 | 0 |
| 29 | 71 | 3.8 | 107,300 | 469 | 17 | 478 | 481 | 1,445 | 0 |
| 30 | 71 | 3.9 | 72,000 | 606 | 0 | 605 | 396 | 1,607 | 0 |
| 31 | 71 | 3.6 | 109,200 | 363 | 0 | 462 | 335 | 1,160 | 0 |
| TOTAL | | | | 15,236 | 5,134 | 3,576 | 13,773 | 37,719 | 1,062 |

TABLE 47

TABLE 48

CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT - SEPTEMBER 1970

McNARY DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL | SHAD |
|-------|-------------------|-----------|---------|-----------|---------|--------|---------|---------|------|
| 1 | 71 | 3.9 | 137,200 | 365 | 5 | 685 | 323 | 1,378 | 10 |
| 2 | 71 | 3.8 | 101,800 | 669 | | 1,025 | 586 | 2,280 | |
| 3 | 71 | 3.3 | 108,300 | 537 | | 716 | 287 | 1,540 | 2 |
| 4 | 71 | 3.5 | 106,700 | 880 | 6 | 1,086 | 680 | 2,652 | |
| 5 | 71 | 4.0 | 84,300 | 503 | | 814 | 305 | 1,622 | 19 |
| 6 | 71 | 4.0 | 84,800 | 716 | | 1,252 | 624 | 2,592 | 2 |
| 7 | 69 | 3.8 | 97,800 | 719 | | 1,062 | 579 | 2,360 | 31 |
| 8 | 67 | 3.8 | 92,100 | 956 | | 1,636 | 787 | 3,379 | |
| 9 | 67 | 4.4 | 102,300 | 962 | | 1,223 | 1,231 | 3,416 | |
| 10 | 66 | 2.8 | 121,600 | 1,228 | | 1,946 | 1,133 | 4,307 | |
| 11 | 66 | 3.9 | 107,900 | 1,333 | | 1,540 | 1,376 | 4,249 | |
| 12 | 66 | 2.8 | 101,700 | 1,322 | | 1,241 | 1,155 | 3,718 | |
| 13 | 66 | 3.6 | 94,500 | 2,191 | | 2,289 | 2,809 | 7,289 | |
| 14 | 65 | 3.9 | 120,400 | 3,011 | | 2,794 | 3,454 | 9,259 | |
| 15 | 64 | 3.6 | 110,000 | 2,188 | | 1,199 | 3,363 | 6,750 | |
| 16 | 64 | 3.8 | 103,100 | 2,395 | | 1,558 | 3,625 | 7,578 | 5 |
| 17 | 62 | 3.6 | 118,100 | 2,151 | | 929 | 3,173 | 6,253 | 13 |
| 18 | 62 | 3.9 | 113,200 | 2,155 | | 1,448 | 2,460 | 6,063 | |
| 19 | 62 | 4.3 | 95,500 | 2,079 | | 1,012 | 2,599 | 5,690 | |
| 20 | 62 | 3.9 | 83,900 | 2,919 | | 1,251 | 3,261 | 7,431 | |
| 21 | 62 | 4.2 | 124,000 | 1,425 | | 686 | 1,907 | 4,018 | |
| 22 | 62 | 3.4 | 105,800 | 2,155 | | 1,029 | 2,624 | 5,808 | 11 |
| 23 | 62 | 4.1 | 116,500 | 1,563 | | 668 | 1,742 | 3,973 | |
| 24 | 62 | 4.0 | 94,200 | 1,388 | | 496 | 1,182 | 3,066 | 8 |
| 25 | 62 | 4.0 | 107,400 | 830 | | 357 | 730 | 1,917 | |
| 26 | 62 | 4.0 | 94,900 | 553 | | 168 | 449 | 1,170 | |
| 27 | 62 | 4.0 | 72,500 | 539 | | 288 | 543 | 1,370 | |
| 28 | 62 | 4.0 | 90,900 | 350 | | 218 | 513 | 1,081 | |
| 29 | 64 | 4.0 | 107,800 | 539 | | 291 | 607 | 1,437 | |
| 30 | 62 | 4.6 | 113,600 | 529 | | 254 | 528 | 1,311 | |
| 31 | | | | | | | | | |
| TOTAL | | | | 39,150 | 11 | 31,161 | 44,635 | 114,957 | 101 |

TABLE 48

TABLE 49
 CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - OCTOBER 1970

McNARY DAM

| DATE | TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | COHO | CHINOOK | TOTAL |
|--------------|-------------|-----------|---------|--------------|--------------|--------------|---------------|
| 1 | 62 | 4.0 | 118,400 | 494 | 246 | 401 | 1,141 |
| 2 | 62 | 4.7 | 100,400 | 719 | 213 | 567 | 1,499 |
| 3 | 62 | 4.0 | 87,100 | 401 | 142 | 374 | 917 |
| 4 | 62 | 4.5 | 72,900 | 462 | 141 | 490 | 1,093 |
| 5 | 62 | 4.0 | 124,000 | 439 | 106 | 453 | 998 |
| 6 | 62 | 4.2 | 114,200 | 624 | 164 | 548 | 1,336 |
| 7 | 62 | 4.0 | 110,900 | 284 | 66 | 304 | 654 |
| 8 | 62 | 3.9 | 105,600 | 412 | 75 | 215 | 702 |
| 9 | 62 | 4.0 | 82,700 | 362 | 86 | 224 | 672 |
| 10 | 62 | 4.5 | 112,600 | 381 | 71 | 261 | 713 |
| 11 | 62 | 4.0 | 67,700 | 384 | 57 | 226 | 667 |
| 12 | 62 | 4.5 | 100,800 | 273 | 43 | 154 | 470 |
| 13 | 60 | 4.0 | 121,000 | 165 | 32 | 128 | 325 |
| 14 | 60 | 4.0 | 115,000 | 224 | 30 | 140 | 394 |
| 15 | 60 | 4.0 | 114,300 | 138 | 19 | 133 | 290 |
| 16 | 60 | 4.0 | 127,100 | 187 | 22 | 156 | 365 |
| 17 | 60 | 4.0 | 114,700 | 129 | 25 | 168 | 322 |
| 18 | 60 | 4.0 | 74,800 | 129 | 30 | 173 | 332 |
| 19 | 60 | 4.0 | 133,600 | 133 | 18 | 130 | 281 |
| 20 | 60 | 4.0 | 124,400 | 94 | 14 | 124 | 232 |
| 21 | 59 | 3.9 | 98,500 | 165 | 18 | 203 | 386 |
| 22 | 59 | 4.0 | 115,700 | 126 | 16 | 171 | 313 |
| 23 | 58 | 4.3 | 86,800 | 150 | 10 | 144 | 304 |
| 24 | 59 | 4.0 | 86,000 | 102 | 2 | 140 | 244 |
| 25 | 57 | 4.5 | 100,800 | 97 | 11 | 121 | 229 |
| 26 | 57 | 4.0 | 148,300 | 90 | 0 | 101 | 191 |
| 27 | 57 | 4.3 | 134,900 | 63 | 3 | 131 | 197 |
| 28 | 56 | 4.0 | 96,600 | 39 | 2 | 85 | 126 |
| 29 | 56 | 4.4 | 116,000 | 41 | 0 | 63 | 104 |
| 30 | 55 | 4.0 | 100,300 | 81 | 0 | 59 | 140 |
| 31 | 55 | 4.5 | 74,500 | 114 | 0 | 62 | 176 |
| TOTAL | | | | 7,502 | 1,662 | 6,649 | 15,813 |

TABLE 49

TABLE 50

PEAK DAYS OF FISH MIGRATION
McNARY DAM - 1954 - 1970

| Year | Spring Chinook | | Summer Chinook | | Fall Chinook | | Steelhead | | Sockeye | | Coho | | Chum | |
|-----------------|----------------|----------------|----------------|----------------|--------------|----------------|-----------|----------------|---------|----------------|-------------|----------------|--------|----------------|
| | 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 |
| 1954 | May 12 | 6,571 | Jul 5 | 2,565 | Sep 12 | 906 | Sep 10 | 1,285 | Jul 9 | 6,798 | Sep 11 | 79 | Oct 17 | 1 |
| 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 | Jul 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 | | |
| Total | | 74,089 | | 54,024 | | 54,524 | | 55,927 | | 107,638 | | 12,469 | | |
| 17 Year Average | | 4,358 | | 3,178 | | 3,207 | | 3,290 | | 6,332 | | 733 | | |

TABLE 51
 MONTHLY COUNT OF CHINOOK SALMON
 McNARY DAM - 1954 - 1970

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total for Year | 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 | 44,633 | 6,649 | | | 168,892 | 63,982 | 43,356 | 61,554 |
| Total | | | | 220,744 | 638,569 | 523,713 | 578,350 | 230,419 | 716,270 | 90,677 | 721 | | 2,999,490 | 944,909 | 1,102,697 | 951,884 |
| 1717 Year Average | | | | 12,984 | 37,563 | 30,807 | 34,021 | 13,554 | 42,134 | 5,334 | 45 | | 176,441 | 55,583 | 64,864 | 55,993 |

TABLE 51

TABLE 52
MONTHLY COUNT OF SOCKEYE SALMON
McNARY DAM - 1954 - 1970

| 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 |
| Total | | | | | 157 | 94,921 | 1,245,051 | 66,961 | 4,725 | 53 | 2 | | 1,411,870 |
| 17-Year Average | | | | | 9 | 5,584 | 73,238 | 3,939 | 278 | 3 | | | 83,051 |

TABLE 53
MONTHLY COUNT OF COHO SALMON
McNARY DAM - 1954 - 1970

| 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 |
| Total | | | | | | | 64 | 8,341 | 162,819 | 18,465 | 95 | 1 | 189,785 |
| 17-Year Average | | | | | | | 4 | 491 | 9,578 | 1,086 | 6 | | 11,164 |

TABLE 53

TABLE 54
MONTHLY COUNT OF STEELHEAD TROUT
McNARY DAM - 1954 - 1970

| 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 | 75,509 |
| 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 |
| Total | 1,059 | 925 | 2,918 | 36,394 | 20,217 | 12,492 | 147,689 | 377,414 | 796,469 | 280,119 | 8,168 | 2,377 | 1,686,240 |
| 17-Year Average | 62 | 54 | 172 | 2,141 | 1,189 | 735 | 8,688 | 22,201 | 46,851 | 16,478 | 480 | 140 | 99,191 |

TABLE 55

YEARLY PERCENTAGES OF SALMONIDS COUNTED OVER EACH FISH LADDER
McNARY DAM - 1954 - 1970

| Year | Chinook | | Sockeye | | Coho | | Chum | | Steelhead | | Percent of Total Count | | |
|------|---------------------------|---------------|---------|-------|------------------|-------|-------|-------|-----------------|-------|------------------------|-------|---------------|
| | Ore. | Wash. | Ore. | Wash. | Ore. | Wash. | Ore. | Wash. | Ore. | Wash. | Ore. | Wash. | Fish Locks 1/ |
| 1954 | 52.09 .01 1/ | 47 90 | 25.42 | 74.58 | 39.47 1.58 1/ | 58.95 | 100.0 | | 45.05 .43 1/ | 54 52 | 41.06 | 58 82 | .12 |
| 1955 | 79 00 | 21 00 | 57.00 | 43 00 | 62.83 | 37.17 | | | 67.58 .04 1/ | 32.38 | 65.90 | 34.09 | 01 |
| 1956 | 53.64 | 46 36 | 42 33 | 57 67 | 60.18 | 39.82 | | | 64.68 | 35.32 | 51.02 | 48.98 | |
| 1957 | 69.06 .12 1/ | 30.82 | 53.55 | 46.45 | 71.28 1.57 1/ | 27.15 | | | 61.43 .20 1/ | 38.37 | 64.69 | 35.19 | .12 |
| 1958 | 73 50 | 26 50 | 69.84 | 30.16 | 78 15 | 21.85 | | | 68.39 | 31 61 | 71.54 | 28.46 | |
| 1959 | 73.25 .02 1/ | 26.73 | 73 40 | 26.60 | 78.48 .61 1/ | 20.91 | | | 69.23 .08 1/ | 30.69 | 72.11 | 27.86 | .03 |
| 1960 | 76.89 | 23.11 | 68.62 | 31.38 | 81.65 | 18.35 | | | 74 33 | 25.67 | 74.78 | 25.22 | |
| 1961 | 80 92 | 19.08 | 77 74 | 22 26 | 58.34 | 41.66 | | | 62.35 | 37.65 | 73.61 | 26.39 | |
| 1962 | 76.34 | 23 66 | 60.39 | 39.61 | 75.34 | 24.66 | | | 80.65 | 19.35 | 77.01 | 22.99 | |
| 1963 | 72.25 | 27.75 | 44.33 | 55 67 | 64.66 | 35.37 | | | 74 32 | 25.68 | 67.85 | 32.15 | |
| 1964 | 74.38 | 25 62 | 42.84 | 57.16 | 70.61 | 29.39 | | | 81.87 | 18.13 | 69.03 | 30.97 | |
| 1965 | 67.61 | 32.39 | 41.75 | 58.25 | 68.37 | 31.63 | | | 83.83 | 16.17 | 70.31 | 29.69 | |
| 1966 | 62.36 | 37.64 | 77.75 | 22.35 | 64.35 | 35.65 | | | 78.26 | 21.74 | 70.66 | 29.34 | |
| 1967 | 54.33 | 45.67 | 56.88 | 43 12 | 66.36 | 33.64 | | | 73.99 | 26.01 | 62.05 | 37.95 | |
| 1968 | 63.94 | 36.06 | 67.57 | 32.43 | 71.01 | 28.99 | | | 75.24 | 24.76 | 69.44 | 30.56 | |
| 1969 | 76.50 | 23.50 | 66.50 | 33.50 | 63.20 | 36.80 | | | 80.10 | 19.90 | 74.82 | 25.18 | |
| 1970 | 69.96 1/ Pressure Fish | 30.04 Lock | 70.51 | 29.49 | 80.60 | 19.40 | | | 82.95 | 17.05 | 66.89 | 33.11 | |

TABLE 56
 YEARLY TOTALS OF SALMONIDS COUNTED OVER ICE HARBOR DAM
 1962 - 1970

| Year | Chinook | Steelhead | Sockeye | Coho | Total Salmon |
|----------------|---------|-----------|---------|--------|--------------|
| 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 |
| Total | 692,526 | 622,213 | 6,451 | 27,358 | 1,348,548 |
| 9-Year Average | 76,947 | 69,135 | 717 | 3,040 | 149,839 |

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

TABLE 56

TABLE 57
 MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER ICE HARBOR DAM
 1970

| SPECIES | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--------------|-----|-----|-----|--------|--------|--------|--------|-------|--------|--------|-------|-----|---------|
| Chinook | - | - | - | 12,167 | 33,881 | 12,338 | 8,185 | 1,747 | 7,702 | 1,456 | 219 | 3 | 77,698 |
| Snakeye | | | | | | 57 | 572 | 139 | 29 | | | | 797 |
| Coho | | | | | | | | 499 | 2,789 | 345 | 3 | | 3,636 |
| Steelhead | | | | 1,597 | 1,067 | 389 | 2,620 | 7,611 | 30,101 | 8,290 | 1,891 | 304 | 53,870 |
| TOTAL SALMON | | | | 13,764 | 34,948 | 12,784 | 11,377 | 9,996 | 40,621 | 10,091 | 2,113 | 307 | 136,001 |
| Shad | | | | | | 8 | 339 | 48 | | | | | 395 |

TABLE 58

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - APRIL 1970

ICE HARBOR DAM

TABLE 58

| DATE | WATER TEMPERATURE | RIVER | | CHINOOK | STEELHEAD | TOTAL |
|-------|-------------------|-----------|--------|---------|-----------|--------|
| | | TURBIDITY | FLOW | | | |
| 1 | 47 | 1.0 | 43,200 | 8 | 41 | 49 |
| 2 | 47 | 1.4 | 35,300 | 0 | 34 | 34 |
| 3 | 47 | 1.9 | 44,000 | 0 | 49 | 49 |
| 4 | 47 | 2.0 | 43,900 | 0 | 51 | 51 |
| 5 | 47 | 1.9 | 41,600 | 0 | 73 | 73 |
| 6 | 48 | 1.8 | 37,400 | 0 | 66 | 66 |
| 7 | 48 | 1.7 | 42,400 | 6 | 63 | 69 |
| 8 | 48 | 1.6 | 43,600 | 7 | 68 | 75 |
| 9 | 48 | 1.7 | 34,900 | 9 | 33 | 42 |
| 10 | 48 | 1.9 | 46,100 | 28 | 75 | 103 |
| 11 | 48 | 2.2 | 48,500 | 29 | 108 | 137 |
| 12 | 48 | 2.0 | 59,800 | 91 | 100 | 191 |
| 13 | 48 | 2.2 | 47,900 | 171 | 94 | 265 |
| 14 | 48 | 2.0 | 51,600 | 169 | 62 | 231 |
| 15 | 48 | 2.1 | 57,200 | 155 | 68 | 223 |
| 16 | 48 | 1.8 | 49,700 | 482 | 81 | 563 |
| 17 | 48 | 1.7 | 65,600 | 360 | 47 | 407 |
| 18 | 48 | 1.8 | 55,100 | 673 | 63 | 736 |
| 19 | 49 | 1.8 | 51,500 | 468 | 43 | 511 |
| 20 | 49 | 1.9 | 45,200 | 670 | 52 | 722 |
| 21 | 49 | 2.2 | 48,700 | 598 | 33 | 631 |
| 22 | 49 | 2.3 | 48,700 | 479 | 36 | 515 |
| 23 | 49 | 2.3 | 51,100 | 531 | 32 | 563 |
| 24 | 49 | 2.2 | 49,700 | 773 | 46 | 819 |
| 25 | 49 | 1.9 | 47,800 | 724 | 30 | 754 |
| 26 | 49 | 2.0 | 43,800 | 540 | 49 | 589 |
| 27 | 49 | 2.0 | 53,800 | 903 | 39 | 942 |
| 28 | 49 | 2.2 | 43,700 | 1234 | 6 | 1240 |
| 29 | 49 | 2.2 | 43,300 | 744 | 12 | 756 |
| 30 | 49 | 2.3 | 46,000 | 2315 | 43 | 2358 |
| TOTAL | | | | 12,167 | 1,597 | 13,764 |

TABLE 59

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - MAY 1970

ICE HARBOR DAM

| DATE | WATER TEMPERATURE | RIVER | | CHINOOK | STEELHEAD | TOTAL |
|------|-------------------|-----------|---------|---------|-----------|-------|
| | | TURBIDITY | FLOW | | | |
| 1 | 49 | 2.3 | 51,000 | 5125 | 61 | 5186 |
| 2 | 50 | 3.2 | 48,200 | 3994 | 55 | 4049 |
| 3 | 51 | 2.9 | 46,300 | 1557 | 32 | 1589 |
| 4 | 51 | 3.0 | 46,600 | 1059 | 29 | 1088 |
| 5 | 51 | 2.9 | 57,000 | 2703 | 56 | 2759 |
| 6 | 51 | 2.5 | 81,600 | 2331 | 43 | 2374 |
| 7 | 51 | 1.4 | 100,200 | 2258 | 62 | 2320 |
| 8 | 52 | 1.8 | 112,200 | 1224 | 26 | 1250 |
| 9 | 52 | 1.9 | 104,100 | 2245 | 60 | 2305 |
| 10 | 52 | 1.9 | 101,800 | 1658 | 31 | 1689 |
| 11 | 53 | 2.0 | 102,600 | 1461 | 47 | 1508 |
| 12 | 54 | 1.9 | 89,500 | 1375 | 40 | 1365 |
| 13 | 54 | 2.0 | 89,300 | 1310 | 30 | 1340 |
| 14 | 53 | 1.9 | 84,400 | 1100 | 38 | 1138 |
| 15 | 53 | 2.0 | 79,800 | 917 | 30 | 947 |
| 16 | 53 | 2.2 | 78,700 | 510 | 22 | 532 |
| 17 | 53 | 1.8 | 89,900 | 504 | 21 | 525 |
| 18 | 53 | 1.9 | 125,000 | 287 | 31 | 318 |
| 19 | 53 | 1.5 | 151,700 | 234 | 26 | 260 |
| 20 | 53 | 2.2 | 169,800 | 280 | 27 | 307 |
| 21 | 54 | 1.8 | 176,700 | 381 | 57 | 438 |
| 22 | 54 | 1.9 | 155,000 | 324 | 40 | 364 |
| 23 | 54 | 2.0 | 154,000 | 140 | 21 | 161 |
| 24 | 54 | 2.0 | 177,800 | 124 | 17 | 141 |
| 25 | 54 | 1.8 | 175,300 | 71 | 19 | 90 |
| 26 | 54 | 1.9 | 190,300 | 87 | 24 | 111 |
| 27 | 54 | 1.7 | 196,400 | 53 | 17 | 70 |
| 28 | 54 | 1.5 | 189,400 | 118 | 19 | 137 |
| 29 | 54 | 1.6 | 160,700 | 130 | 29 | 159 |
| 30 | 54 | 1.5 | 145,800 | 195 | 27 | 222 |
| 31 | 54 | 1.5 | 134,400 | 176 | 30 | 206 |

TOTAL

~~33,881~~
33,931

1,067

34,948

TABLE 59

TABLE 60

CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNT - JUNE 1970

ICE HARBOR DAM

| DATE | WATER TEMPERATURE | RIVER TURBIDITY | RIVER FLOW | CHINOOK | STEELHEAD | SOCKEYE | TOTAL | SHAD |
|-------|-------------------|-----------------|------------|---------|-----------|---------|--------|------|
| 1 | 54 | 1.5 | 123,600 | 103 | 17 | | 120 | |
| 2 | 54 | 1.5 | 121,400 | 87 | 16 | | 103 | |
| 3 | 54 | 1.5 | 141,900 | 98 | 12 | | 110 | |
| 4 | 54 | 1.6 | 169,300 | 116 | 11 | | 127 | |
| 5 | 54 | 1.1 | 207,400 | 248 | 21 | | 269 | |
| 6 | 57 | 1.3 | 207,000 | 361 | 35 | | 396 | |
| 7 | 58 | 1.3 | 216,600 | 295 | 23 | | 318 | |
| 8 | 58 | 1.2 | 211,300 | 170 | 15 | | 185 | |
| 9 | 58 | 1.1 | 188,000 | 130 | 2 | | 132 | |
| 10 | 57 | 1.0 | 188,300 | 144 | 9 | | 153 | |
| 11 | 57 | .8 | 174,500 | 131 | 6 | | 137 | |
| 12 | 56 | 1.0 | 152,000 | 162 | 8 | | 170 | |
| 13 | 56 | 1.2 | 130,500 | 230 | 14 | | 244 | |
| 14 | 55 | 1.1 | 123,900 | 313 | 7 | | 320 | |
| 15 | 55 | 1.5 | 130,600 | 533 | 10 | | 543 | |
| 16 | 55 | 1.3 | 145,600 | 577 | 18 | | 595 | |
| 17 | 55 | 1.5 | 138,400 | 683 | 7 | | 690 | |
| 18 | 55 | 1.7 | 126,800 | 684 | 11 | | 695 | |
| 19 | 56 | 1.6 | 130,300 | 760 | 14 | | 774 | |
| 20 | 56 | 1.7 | 134,300 | 580 | 14 | | 594 | |
| 21 | 56 | 1.8 | 138,600 | 668 | 8 | | 676 | |
| 22 | 57 | 1.9 | 144,200 | 578 | 9 | | 587 | |
| 23 | 60 | 1.9 | 141,900 | 550 | 11 | | 561 | |
| 24 | 61 | 2.1 | 141,200 | 294 | 6 | | 300 | |
| 25 | 63 | 2.0 | 131,100 | 765 | 10 | | 775 | |
| 26 | 63 | 2.0 | 119,900 | 694 | 9 | 15 | 718 | |
| 27 | 64 | 2.1 | 112,200 | 639 | 16 | 8 | 663 | |
| 28 | 64 | 2.0 | 116,200 | 609 | 11 | 13 | 633 | |
| 29 | 64 | 2.0 | 135,900 | 575 | 8 | 11 | 594 | 3 |
| 30 | 64 | 2.0 | 118,300 | 561 | 31 | 10 | 602 | 5 |
| TOTAL | | | | 12,338 | 389 | 57 | 12,784 | 8 |

TABLE 61
 CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNTS - JULY 1970

ICE HARBOR DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL SALMONIDS | SHAD |
|-------|----------------------|-----------|---------|-----------|---------|------|---------|--------------------|------|
| 1 | 64 | 1.8 | 113,200 | 20 | 5 | | 648 | 673 | 8 |
| 2 | 64 | 1.8 | 107,000 | 9 | 18 | | 480 | 507 | 12 |
| 3 | 64 | 1.7 | 109,200 | 13 | 13 | | 411 | 437 | 6 |
| 4 | 64 | 1.7 | 97,400 | 11 | 19 | | 512 | 542 | 12 |
| 5 | 64 | 1.9 | 86,400 | 13 | 17 | | 488 | 518 | 3 |
| 6 | 64 | 2.2 | 72,600 | 18 | 17 | | 353 | 388 | 3 |
| 7 | 64 | 2.1 | 69,600 | 20 | 16 | | 315 | 351 | 0 |
| 8 | 64 | 2.5 | 63,700 | 19 | 18 | | 401 | 438 | 2 |
| 9 | 64 | 2.5 | 67,700 | 37 | 19 | | 465 | 521 | 0 |
| 10 | 67 | 2.2 | 60,600 | 47 | 18 | | 540 | 605 | 0 |
| 11 | 67 | 2.3 | 45,200 | 24 | 13 | | 368 | 405 | 0 |
| 12 | 67 | 2.3 | 49,200 | 31 | 18 | | 195 | 244 | 0 |
| 13 | 69 | 2.5 | 48,200 | 38 | 23 | | 195 | 256 | 12 |
| 14 | 69 | 2.4 | 49,300 | 38 | 59 | | 259 | 356 | 42 |
| 15 | 70 | 2.8 | 44,000 | 49 | 80 | | 421 | 550 | 22 |
| 16 | 70 | 2.6 | 43,900 | 75 | 30 | | 333 | 438 | 56 |
| 17 | 70 | 2.6 | 43,800 | 89 | 33 | | 280 | 402 | 19 |
| 18 | 70 | 2.5 | 43,900 | 51 | 27 | | 141 | 219 | 28 |
| 19 | 70 | 3.5 | 33,700 | 89 | 21 | | 130 | 240 | 33 |
| 20 | 71 | 3.1 | 38,600 | 127 | 13 | | 113 | 253 | 30 |
| 21 | 71 | 3.8 | 32,600 | 77 | 15 | | 95 | 187 | 0 |
| 22 | 71 | 2.8 | 30,400 | 147 | 10 | | 154 | 311 | 6 |
| 23 | 71 | 3.5 | 32,200 | 146 | 31 | | 133 | 310 | 0 |
| 24 | 72 | 3.0 | 26,800 | 116 | 6 | | 83 | 205 | 6 |
| 25 | 70 | 3.0 | 23,600 | 144 | 10 | | 131 | 285 | 5 |
| 26 | 70 | 2.9 | 21,400 | 165 | 2 | | 90 | 257 | 7 |
| 27 | 70 | 3.2 | 32,500 | 170 | 4 | | 98 | 272 | 3 |
| 28 | 71 | 3.1 | 18,700 | 253 | 2 | | 106 | 361 | 7 |
| 29 | 71 | 3.0 | 30,900 | 180 | 4 | | 77 | 261 | 7 |
| 30 | 71 | 3.2 | 26,300 | 223 | 6 | | 70 | 299 | 6 |
| 31 | 71 | 3.1 | 30,400 | 181 | 5 | | 100 | 286 | 4 |
| TOTAL | | | | 2,620 | 572 | | 8,185 | 11,377 | 339 |

TABLE 61

TABLE 62

CLIMATOLOGICAL, STREAM FLOW, SALMONID AND SHAD COUNTS - AUGUST 1970

ICE HARBOR DAM

| TABLE 62 | DATE | WATER TEMPERATURE | TURBIDITY | FLOW | TOTAL SALMONIDS | | | | | SHAD |
|----------|------|-------------------|-----------|-------|-----------------|---------|-------|---------|----|------|
| | | | | | STEELHEAD | SOCKEYE | COHO | CHINOOK | | |
| 1 | 71 | 3.5 | 26,100 | 284 | 6 | | 112 | 402 | | |
| 2 | 71 | 3.3 | 26,800 | 168 | | | 96 | 264 | 3 | |
| 3 | 71 | 3.4 | 32,200 | 148 | 3 | | 62 | 213 | | |
| 4 | 72 | 3.4 | 25,800 | 213 | 8 | | 67 | 288 | 6 | |
| 5 | 71 | 3.5 | 30,400 | 264 | 3 | | 65 | 332 | 1 | |
| 6 | 71 | 3.4 | 34,500 | 192 | | | 41 | 233 | | |
| 7 | 72 | 3.8 | 20,700 | 380 | 1 | | 69 | 450 | 3 | |
| 8 | 72 | 3.3 | 20,900 | 255 | 4 | | 57 | 316 | 6 | |
| 9 | 72 | 3.0 | 22,800 | 292 | 1 | | 58 | 351 | 3 | |
| 10 | 72 | 3.1 | 24,300 | 230 | | | 45 | 275 | 2 | |
| 11 | 72 | 3.4 | 19,500 | 233 | 3 | | 70 | 306 | 7 | |
| 12 | 72 | 3.3 | 20,900 | 293 | 5 | | 59 | 357 | 1 | |
| 13 | 72 | 3.6 | 22,500 | 344 | 3 | | 60 | 407 | 3 | |
| 14 | 72 | 4.3 | 19,700 | 259 | 3 | | 60 | 322 | 2 | |
| 15 | 72 | 5.5 | 16,700 | 400 | 2 | | 49 | 451 | 1 | |
| 16 | 72 | 5.8 | 9,100 | 145 | | | 23 | 168 | 2 | |
| 17 | 72 | 6.0 | 19,100 | 113 | | | 28 | 141 | | |
| 18 | 72 | 5.9 | 23,100 | 262 | | | 32 | 294 | 1 | |
| 19 | 72 | 6.0 | 20,600 | 341 | 5 | | 66 | 412 | 1 | |
| 20 | 72 | 6.0 | 20,900 | 206 | 1 | 1 | 33 | 241 | 1 | |
| 21 | 73 | 6.0 | 18,100 | 243 | 4 | 2 | 67 | 316 | 3 | |
| 22 | 73 | 6.0 | 18,500 | 189 | 3 | | 30 | 222 | 1 | |
| 23 | 73 | 6.0 | 9,100 | 106 | 3 | 13 | 44 | 166 | | |
| 24 | 73 | 6.0 | 21,800 | 126 | 3 | 15 | 22 | 166 | | |
| 25 | 73 | 6.0 | 23,200 | 306 | 5 | 61 | 74 | 446 | | |
| 26 | 73 | 6.0 | 19,200 | 409 | 22 | 125 | 84 | 640 | | |
| 27 | 73 | 6.0 | 18,100 | 335 | 18 | 70 | 70 | 493 | | |
| 28 | 73 | 6.0 | 18,200 | 301 | 10 | 57 | 69 | 437 | 1 | |
| 29 | 73 | 6.0 | 20,300 | 215 | 7 | 27 | 48 | 297 | | |
| 30 | 73 | 5.6 | 18,200 | 206 | 8 | 76 | 59 | 349 | | |
| 31 | 72 | 5.6 | 23,000 | 153 | 8 | 52 | 28 | 241 | | |
| TOTAL | | | | 7,611 | 139 | 499 | 1,747 | 9,996 | 48 | |

TABLE 63
 CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - SEPTEMBER 1970
 ICE HARBOR DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL SALMONIDS |
|-------|-------------------|-----------|--------|-----------|---------|-------|---------|-----------------|
| 1 | 72 | 6.0 | 21,400 | 302 | 8 | 107 | 100 | 517 |
| 2 | 72 | 6.0 | 20,100 | 215 | 4 | 69 | 77 | 365 |
| 3 | 72 | 6.0 | 19,000 | 139 | 5 | 58 | 65 | 267 |
| 4 | 72 | 5.8 | 20,500 | 290 | 1 | 39 | 119 | 449 |
| 5 | 71 | 5.8 | 12,800 | 267 | 5 | 46 | 73 | 391 |
| 6 | 71 | 5.7 | 20,400 | 203 | 5 | 50 | 69 | 327 |
| 7 | 71 | 5.2 | 21,900 | 321 | | 58 | 109 | 488 |
| 8 | 70 | 5.1 | 22,700 | 638 | 1 | 80 | 176 | 895 |
| 9 | 69 | 3.5 | 33,300 | 490 | | 77 | 199 | 766 |
| 10 | 69 | 4.0 | 39,400 | 486 | | 73 | 198 | 739 |
| 11 | 69 | 4.2 | 31,700 | 737 | | 114 | 267 | 1,118 |
| 12 | 68 | 4.1 | 26,100 | 430 | | 78 | 263 | 771 |
| 13 | 68 | 3.8 | 26,600 | 1,022 | | 148 | 345 | 1,515 |
| 14 | 68 | 3.7 | 24,400 | 818 | | 118 | 381 | 1,317 |
| 15 | 68 | 3.7 | 25,100 | 1,004 | | 225 | 419 | 1,648 |
| 16 | 67 | 3.8 | 28,200 | 1,550 | | 243 | 441 | 2,234 |
| 17 | 66 | 3.5 | 28,900 | 1,813 | | 247 | 547 | 2,607 |
| 18 | 66 | 3.9 | 25,900 | 2,123 | | 163 | 441 | 2,727 |
| 19 | 66 | 3.8 | 23,000 | 3,863 | | 118 | 875 | 4,856 |
| 20 | 66 | 3.9 | 22,400 | 2,108 | | 99 | 369 | 2,576 |
| 21 | 65 | 3.7 | 21,200 | 423 | | 43 | 274 | 740 |
| 22 | 65 | 3.7 | 21,800 | 1,087 | | 45 | 206 | 1,338 |
| 23 | 64 | 3.9 | 28,300 | 1,872 | | 86 | 400 | 2,358 |
| 24 | 64 | 3.2 | 33,000 | 1,569 | | 72 | 254 | 1,895 |
| 25 | 64 | 3.7 | 40,900 | 1,069 | | 65 | 194 | 1,328 |
| 26 | 64 | 3.3 | 29,000 | 1,146 | | 52 | 209 | 1,407 |
| 27 | 63 | 4.2 | 28,700 | 1,284 | | 64 | 102 | 1,450 |
| 28 | 63 | 4.2 | 27,700 | 1,133 | | 50 | 233 | 1,416 |
| 29 | 63 | 5.4 | 27,100 | 823 | | 55 | 143 | 1,021 |
| 30 | 63 | 5.5 | 28,700 | 894 | | 47 | 154 | 1,095 |
| 31 | | | | | | | | |
| TOTAL | | | | 30,101 | 29 | 2,789 | 7,702 | 40,621 |

TABLE 63

TABLE 64

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - OCTOBER 1970

ICE HARBOR DAM

TABLE 64

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | COHO | CHINOOK | STEELHEAD | TOTAL |
|-------|-------------------|-----------|--------|------|---------|-----------|--------|
| 1 | 63 | 5.4 | 28,916 | 36 | 78 | 580 | 694 |
| 2 | 62 | 5.3 | 25,616 | 44 | 93 | 486 | 623 |
| 3 | 62 | 5.4 | 21,116 | 21 | 98 | 519 | 638 |
| 4 | 62 | 5.2 | 21,616 | 19 | 72 | 453 | 544 |
| 5 | 62 | 5.1 | 25,116 | 10 | 96 | 508 | 614 |
| 6 | 62 | 4.8 | 24,716 | 23 | 63 | 502 | 588 |
| 7 | 61 | 4.8 | 23,616 | 15 | 44 | 454 | 513 |
| 8 | 61 | 4.5 | 31,016 | 19 | 44 | 515 | 578 |
| 9 | 61 | 4.5 | 34,716 | 12 | 38 | 325 | 375 |
| 10 | 60 | 4.1 | 31,316 | 15 | 52 | 395 | 462 |
| 11 | 60 | 4.5 | 19,116 | 9 | 31 | 394 | 434 |
| 12 | 59 | 4.6 | 27,116 | 12 | 58 | 370 | 440 |
| 13 | 59 | 4.7 | 27,716 | 22 | 59 | 298 | 379 |
| 14 | 59 | 4.3 | 24,016 | 11 | 47 | 210 | 268 |
| 15 | 59 | 4.6 | 22,116 | 20 | 65 | 279 | 364 |
| 16 | 59 | 3.5 | 30,316 | 1 | 21 | 146 | 168 |
| 17 | 59 | 4.0 | 27,116 | 2 | 25 | 218 | 245 |
| 18 | 58 | 4.2 | 23,916 | 6 | 31 | 172 | 209 |
| 19 | 58 | 4.3 | 29,716 | 4 | 37 | 121 | 162 |
| 20 | 58 | 4.5 | 30,716 | 4 | 38 | 107 | 149 |
| 21 | 58 | 4.5 | 28,116 | 4 | 50 | 86 | 140 |
| 22 | 57 | 4.5 | 31,216 | 5 | 48 | 169 | 222 |
| 23 | 57 | 4.3 | 34,016 | 8 | 44 | 128 | 180 |
| 24 | 57 | 4.1 | 25,816 | 7 | 65 | 237 | 309 |
| 25 | 57 | 4.2 | 32,316 | 9 | 45 | 123 | 177 |
| 26 | 56 | 4.3 | 33,116 | 0 | 15 | 82 | 97 |
| 27 | 56 | 4.2 | 37,616 | 3 | 16 | 54 | 73 |
| 28 | 55 | 4.2 | 31,316 | 0 | 7 | 46 | 53 |
| 29 | 55 | 4.0 | 25,316 | 0 | 16 | 32 | 48 |
| 30 | 55 | 5.0 | 15,416 | 4 | 30 | 92 | 126 |
| 31 | 54 | 4.7 | 33,316 | 0 | 30 | 189 | 219 |
| TOTAL | | | | 345 | 1,456 | 8,290 | 10,091 |

TABLE 65

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - NOVEMBER 1970

ICE HARBOR DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | COHO | CHINOOK | STEELHEAD | TOTAL |
|-------|----------------------|-----------|--------|------|---------|-----------|-------|
| 1 | 54 | 4.8 | 22,100 | 3 | 11 | 69 | 83 |
| 2 | 54 | 5.0 | 28,400 | | 11 | 53 | 64 |
| 3 | 54 | 4.7 | 26,900 | | 19 | 108 | 127 |
| 4 | 53 | 4.0 | 21,700 | | 16 | 99 | 115 |
| 5 | 53 | 4.5 | 38,800 | | 7 | 75 | 82 |
| 6 | 52 | 4.4 | 25,600 | | 10 | 151 | 161 |
| 7 | 52 | 4.5 | 26,500 | | 21 | 156 | 177 |
| 8 | 52 | 4.3 | 27,500 | | 19 | 128 | 147 |
| 9 | 52 | 4.5 | 27,900 | | 23 | 91 | 114 |
| 10 | 51 | 4.6 | 25,800 | | 6 | 51 | 57 |
| 11 | 51 | 4.6 | 33,900 | | . | 9 | 9 |
| 12 | 51 | 4.6 | 34,200 | | 7 | 175 | 182 |
| 13 | 51 | 4.6 | 31,600 | | 6 | 76 | 82 |
| 14 | 51 | 5.0 | 33,300 | | 5 | 64 | 69 |
| 15 | 51 | 4.9 | 30,000 | | 4 | 75 | 79 |
| 16 | 50 | 5.0 | 30,800 | | 4 | 52 | 56 |
| 17 | 50 | 5.0 | 32,200 | | 13 | 59 | 72 |
| 18 | 50 | 5.0 | 39,600 | | 8 | 42 | 50 |
| 19 | 49 | 5.0 | 43,200 | | 6 | 67 | 73 |
| 20 | 49 | 5.0 | 43,200 | | 1 | 35 | 36 |
| 21 | 48 | 5.2 | 39,000 | | 4 | 49 | 53 |
| 22 | 47 | 5.5 | 34,200 | | 2 | 47 | 49 |
| 23 | 47 | 5.5 | 33,700 | | . | 15 | 15 |
| 24 | 46 | 5.5 | 37,300 | | 2 | 9 | 11 |
| 25 | 46 | 5.5 | 43,700 | | 5 | 22 | 27 |
| 26 | 46 | . | 43,600 | | H | H | H |
| 27 | 46 | 5.8 | 43,800 | | 6 | 33 | 39 |
| 28 | 46 | 5.6 | 43,800 | | 1 | 27 | 28 |
| 29 | 45 | 5.8 | 42,400 | | 1 | 32 | 33 |
| 30 | 45 | 5.7 | 35,000 | | 1 | 22 | 23 |
| TOTAL | | | | 3 | 219 | 1,891 | 2,113 |

TABLE 65

TABLE 66
CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - DECEMBER 1970
ICE HARBOR DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | CHINOOK | STEELHEAD | TOTAL |
|-------|-------------------|-----------|--------|---------|-----------|-------|
| 1 | 45 | 6.0 | 33,300 | 1 | 17 | 18 |
| 2 | 45 | 6.0 | 35,200 | | 19 | 19 |
| 3 | 45 | 6.0 | 36,900 | | 8 | 8 |
| 4 | 45 | 6.0 | 43,800 | 1 | 12 | 13 |
| 5 | 44 | 6.0 | 43,600 | | 14 | 14 |
| 6 | 44 | 5.7 | 42,400 | | 17 | 17 |
| 7 | 44 | 5.6 | 37,300 | 1 | 8 | 9 |
| 8 | 43 | 5.5 | 43,900 | | 2 | 2 |
| 9 | 43 | 5.6 | 43,500 | | 3 | 3 |
| 10 | 43 | 6.0 | 35,600 | | 5 | 5 |
| 11 | 43 | 5.5 | 42,200 | | 3 | 3 |
| 12 | 42 | 5.8 | 44,000 | | 17 | 17 |
| 13 | 42 | 6.0 | 43,900 | | 11 | 11 |
| 14 | 42 | 5.7 | 43,200 | | 18 | 18 |
| 15 | 41 | 6.0 | 38,000 | | 10 | 10 |
| 16 | 41 | 5.7 | 43,500 | | 14 | 14 |
| 17 | 41 | 6.0 | 40,600 | | | |
| 18 | 41 | 5.8 | 44,000 | | 7 | 7 |
| 19 | 41 | 6.0 | 38,600 | | 18 | 18 |
| 20 | 41 | 6.0 | 38,700 | | 32 | 32 |
| 21 | 41 | 6.0 | 40,800 | | 21 | 21 |
| 22 | 41 | 6.0 | 43,400 | | 5 | 5 |
| 23 | 40 | 6.0 | 35,100 | | 10 | 10 |
| 24 | 40 | 6.0 | 29,500 | | 4 | 4 |
| 25 | 40 | | 27,800 | | No Count | |
| 26 | 40 | 6.0 | 43,200 | | 7 | 7 |
| 27 | 39 | 6.0 | 37,100 | | 3 | 3 |
| 28 | 39 | 6.0 | 33,000 | | 5 | 5 |
| 29 | 39 | 6.0 | 34,700 | | 1 | 1 |
| 30 | 39 | 6.0 | 31,000 | | 5 | 5 |
| 31 | 39 | 6.0 | 34,200 | | 8 | 8 |
| TOTAL | | | | 3 | 304 | 307 |

TABLE 67
PEAK DAYS OF MIGRATION
ICE HARBOR DAM - 1962 - 1969

| Year | Spring Chinook | | Summer Chinook | | Fall Chinook | | Steelhead | | Sockeye | | Coho | |
|----------------|----------------|----------------|----------------|----------------|--------------|----------------|-----------|----------------|---------|----------------|--------|----------------|
| | 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 |
| Total | | 28,706 | | 12,473 | | 8,648 | | 26,586 | | 662 | | 2,129 |
| 9-Year Average | | 3,189 | | 1,386 | | 961 | | 2,954 | | 73 | | 236 |

TABLE 67

TABLE 68
MONTHLY COUNT OF CHINOOK SALMON
ICE HARBOR DAM - 1962 - 1969

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total for Year | 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 |
| Total | | 1 | 201 | 65,552 | 235,892 | 116,738 | 113,128 | 18,228 | 106,417 | 33,693 | 2,602 | 74 | 692,526 | 321,141 | 218,039 | 153,346 |
| 9-Year Average | | | 22 | 7,284 | 26,210 | 12,971 | 12,570 | 2,025 | 11,824 | 3,744 | 289 | 8 | 76,947 | 35,682 | 24,226 | 17,038 |

TABLE 69

MONTHLY COUNT OF STEELHEAD TROUT
ICE HARBOR DAM - 1962 - 1969

| 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 |
| Total | 268 | 287 | 2,276 | 26,525 | 11,040 | 2,841 | 19,151 | 52,826 | 341,307 | 144,955 | 18,649 | 2,088 | 622,213 |
| 9-Year Average | 30 | 32 | 253 | 2,947 | 1,227 | 316 | 2,128 | 5,870 | 37,923 | 16,106 | 2,072 | 232 | 69,135 |

TABLE 70

MONTH TOTALS OF SALMONIDS AND SHAD, AND PEAK DAYS OF MIGRATION 1969-1970
 LOWER MONUMENTAL DAM
 - 1970 -

| Species | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--------------|-----|-------|-------|--------|--------|--------|--------|-------|--------|--------|-------|-----|---------|
| Chinook | 1 | | 1 | 9,194 | 32,623 | 15,818 | 9,369 | 1,720 | 5,178 | 1,281 | 1,122 | 3 | 75,310 |
| Sockeye | | | | | | 41 | 179 | 11 | 9 | | | | 240 |
| Coho | | | | | | | | 299 | 2,385 | 281 | 7 | | 2,972 |
| Steelhead | 252 | 1,025 | 1,519 | 3,143 | 2,134 | 232 | 1,989 | 7,947 | 30,701 | 11,194 | 1,615 | 416 | 62,167 |
| Total Salmon | 253 | 1,025 | 1,520 | 12,337 | 34,757 | 16,091 | 11,537 | 9,977 | 38,273 | 12,756 | 1,744 | 419 | 140,689 |

| | | | | | | | | | | | | | |
|------|--|--|--|--|--|----|-----|----|--|--|--|--|-----|
| Shad | | | | | | 34 | 763 | 15 | | | | | 812 |
|------|--|--|--|--|--|----|-----|----|--|--|--|--|-----|

- 1969 -

| Species | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--------------|-----|-----|-------|-------|--------|--------|--------|-------|--------|--------|-------|-----|---------|
| Chinook | | | 1 | 67 | 38,702 | 25,289 | 13,832 | 1,776 | 5,069 | 1,619 | 340 | 5 | 86,700 |
| Sockeye | | | | | | 94 | 968 | 65 | | | | | 1,127 |
| Coho | | | | 2 | | | | 134 | 4,924 | 1,278 | 127 | 1 | 6,466 |
| Steelhead | | 5 | 1,525 | 9,235 | 5,475 | 248 | 2,141 | 6,410 | 26,647 | 15,195 | 4,187 | 366 | 71,434 |
| Total Salmon | | 5 | 1,526 | 9,304 | 44,177 | 25,631 | 16,941 | 8,385 | 36,640 | 18,092 | 4,654 | 372 | 165,727 |

| | | | | | | | | | | | | | |
|------|--|--|--|--|--|----|-----|----|----|--|--|--|-----|
| Shad | | | | | | 32 | 465 | 21 | 27 | | | | 545 |
|------|--|--|--|--|--|----|-----|----|----|--|--|--|-----|

PEAK DAYS OF MIGRATION 1969-1970

| Year | Spring Chinook | | Summer Chinook | | Fall Chinook | | Steelhead | | Sockeye | | Coho | |
|------|----------------|----------------|----------------|----------------|--------------|----------------|-----------|----------------|---------|----------------|--------|----------------|
| | 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 | June 26 | 1,630 | Sep 24 | 899 | Sep 24 | 2,680 | Jul 11 | 64 | Sep 17 | 572 |
| 1970 | May 3 | 4,472 | June 16 | 1,054 | Sep 20 | 512 | Sep 20 | 3,588 | Jul 15 | 23 | Sep 13 | 181 |

TABLE 71
DAILY SALMONID AND SHAD COUNT - JANUARY THRU MAY - 1970
LOWER MONUMENTAL DAM

| Date | JANUARY | | | FEB | MARCH | | | APRIL | | | MAY | | | Date |
|--------|---------|------------|-------|------------|---------|------------|-------|---------|------------|--------|---------|------------|--------|------|
| | Chinook | Steel-head | Total | Steel-head | Chinook | Steel-head | Total | Chinook | Steel-head | Total | Chinook | Steel-head | Total | |
| 1 | 0 | 0 | 0 | 27 | 0 | 2 | 2 | 0 | 214 | 214 | 1,481 | 142 | 1,623 | 1 |
| 2 | 0 | 17 | 17 | 27 | 0 | 2 | 2 | 0 | 147 | 147 | 3,010 | 166 | 3,176 | 2 |
| 3 | 0 | 3 | 3 | 35 | 0 | 6 | 6 | 0 | 94 | 94 | 4,472 | 158 | 4,630 | 3 |
| 4 | 0 | 5 | 5 | 21 | 0 | 31 | 31 | 1 | 85 | 86 | 2,981 | 121 | 3,102 | 4 |
| 5 | 0 | 5 | 5 | 7 | 0 | 43 | 43 | 1 | 145 | 146 | 1,356 | 98 | 1,454 | 5 |
| 6 | 1 | 2 | 3 | 13 | 0 | 22 | 22 | 0 | 98 | 98 | 2,155 | 63 | 2,218 | 6 |
| 7 | 0 | 3 | 3 | 7 | 0 | 21 | 21 | 3 | 146 | 149 | 1,307 | 76 | 1,383 | 7 |
| 8 | 0 | 1 | 1 | 10 | 0 | 24 | 24 | 2 | 121 | 123 | 1,098 | 100 | 1,198 | 8 |
| 9 | 0 | 2 | 2 | 6 | 0 | 19 | 19 | 1 | 109 | 110 | 1,627 | 82 | 1,709 | 9 |
| 10 | 0 | 1 | 1 | 21 | 0 | 27 | 27 | 10 | 98 | 108 | 2,054 | 71 | 2,125 | 10 |
| 11 | 0 | 0 | 0 | 27 | 0 | 63 | 63 | 4 | 73 | 77 | 1,721 | 81 | 1,802 | 11 |
| 12 | 0 | 4 | 4 | 24 | 0 | 52 | 52 | 8 | 71 | 79 | 839 | 59 | 898 | 12 |
| 13 | 0 | 1 | 1 | 17 | 0 | 23 | 23 | 25 | 54 | 79 | 451 | 61 | 512 | 13 |
| 14 | 0 | 0 | 0 | 23 | 0 | 39 | 39 | 18 | 70 | 88 | 1,521 | 61 | 1,582 | 14 |
| 15 | 0 | 5 | 5 | 59 | 0 | 44 | 44 | 65 | 138 | 203 | 1,047 | 93 | 1,140 | 15 |
| 16 | 0 | 12 | 12 | 54 | 0 | 43 | 43 | 300 | 177 | 477 | 919 | 89 | 1,008 | 16 |
| 17 | 0 | 8 | 8 | 57 | 0 | 96 | 96 | 221 | 99 | 320 | 530 | 58 | 588 | 17 |
| 18 | 0 | 8 | 8 | 76 | 0 | 68 | 68 | 286 | 75 | 361 | 591 | 42 | 633 | 18 |
| 19 | 0 | 13 | 13 | 47 | 0 | 32 | 32 | 306 | 92 | 398 | 938 | 44 | 982 | 19 |
| 20 | 0 | 24 | 24 | 64 | 0 | 46 | 46 | 226 | 59 | 285 | 934 | 61 | 995 | 20 |
| 21 | 0 | 12 | 12 | 49 | 0 | 31 | 31 | 510 | 73 | 583 | 276 | 54 | 330 | 21 |
| 22 | 0 | 5 | 5 | 58 | 1 | 37 | 38 | 526 | 72 | 598 | 95 | 56 | 151 | 22 |
| 23 | 0 | 24 | 24 | 63 | 0 | 70 | 70 | 869 | 101 | 970 | 210 | 60 | 270 | 23 |
| 24 | 0 | 15 | 15 | 48 | 0 | 103 | 103 | 355 | 145 | 500 | 76 | 32 | 108 | 24 |
| 25 | 0 | 2 | 2 | 47 | 0 | 64 | 64 | 1,335 | 112 | 1,447 | 80 | 30 | 110 | 25 |
| 26 | 0 | 6 | 6 | 39 | 0 | 92 | 92 | 933 | 94 | 1,027 | 78 | 36 | 114 | 26 |
| 27 | 0 | 1 | 1 | 34 | 0 | 56 | 56 | 247 | 78 | 325 | 63 | 27 | 90 | 27 |
| 28 | 0 | 5 | 5 | 67 | 0 | 79 | 79 | 1,170 | 110 | 1,280 | 183 | 26 | 209 | 28 |
| 29 | 0 | 28 | 28 | 0 | 0 | 39 | 39 | 576 | 89 | 615 | 161 | 29 | 190 | 29 |
| 30 | 0 | 24 | 24 | 0 | 0 | 59 | 59 | 1,246 | 104 | 1,350 | 191 | 38 | 229 | 30 |
| 31 | 0 | 16 | 16 | 0 | 0 | 186 | 186 | 0 | 0 | 0 | 178 | 20 | 198 | 31 |
| TOTALS | 1 | 252 | 253 | 1,025 | 1 | 1,519 | 1,520 | 9,194 | 3,143 | 12,337 | 32,623 | 2,134 | 34,757 | |

9244

TABLE 72

TABLE 72
DAILY SALMONID AND SHAD COUNT - JUNE & JULY - 1970
LOWER MONUMENTAL DAM

| Date | JUNE | | | | | JULY | | | | | Date |
|-------|---------|---------|------------|----------------|------|---------|---------|------------|----------------|------|------|
| | Chinook | Sockeye | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Steel-head | Total Salmonid | Shad | |
| 1 | 277 | | 31 | 308 | | 659 | 6 | 6 | 671 | 1 | 1 |
| 2 | 259 | | 19 | 278 | | 534 | 2 | 2 | 538 | 1 | 2 |
| 3 | 306 | | 30 | 336 | | 419 | 5 | 4 | 428 | 13 | 3 |
| 4 | 667 | | 36 | 703 | | 387 | 6 | 3 | 396 | 0 | 4 |
| 5 | 408 | | 17 | 425 | | 400 | 4 | 3 | 407 | 24 | 5 |
| 6 | 383 | | 9 | 392 | | 553 | 13 | 6 | 577 | 66 | 6 |
| 7 | 185 | | 8 | 193 | | 627 | 4 | 25 | 656 | 45 | 7 |
| 8 | 102 | | 8 | 110 | | 475 | 5 | 19 | 499 | 60 | 8 |
| 9 | 117 | | 6 | 123 | | 357 | 6 | 12 | 375 | 0 | 9 |
| 10 | 84 | | 2 | 86 | | 512 | 9 | 9 | 530 | 89 | 10 |
| 11 | 203 | 3 | 4 | 210 | | 409 | 17 | 16 | 442 | 112 | 11 |
| 12 | 299 | 1 | 7 | 307 | | 306 | 8 | 15 | 329 | 69 | 12 |
| 13 | 504 | | 12 | 516 | | 357 | 10 | 10 | 377 | 43 | 13 |
| 14 | 317 | | 3 | 320 | | 288 | 5 | 21 | 314 | 34 | 14 |
| 15 | 880 | | 4 | 884 | | 372 | 23 | 29 | 324 | 12 | 15 |
| 16 | 1,054 | 10 | 4 | 1,068 | | 229 | 8 | 45 | 282 | 11 | 16 |
| 17 | 593 | 2 | 3 | 598 | | 708 | 8 | 54 | 770 | 9 | 17 |
| 18 | 810 | 2 | 0 | 812 | | 193 | 9 | 66 | 268 | 5 | 18 |
| 19 | 490 | 2 | 2 | 494 | | 183 | 4 | 66 | 253 | 19 | 19 |
| 20 | 926 | 8 | 0 | 934 | | 138 | 5 | 70 | 213 | 22 | 20 |
| 21 | 951 | | 4 | 955 | | 186 | 5 | 103 | 294 | 22 | 21 |
| 22 | 1,004 | | 1 | 1,005 | | 149 | 2 | 103 | 254 | 24 | 22 |
| 23 | 665 | | 5 | 670 | | 201 | 0 | 107 | 308 | 40 | 23 |
| 24 | 590 | | 1 | 591 | | 151 | 8 | 112 | 271 | 17 | 24 |
| 25 | 424 | | 3 | 427 | | 69 | 0 | 122 | 191 | 17 | 25 |
| 26 | 546 | | 1 | 547 | | 149 | 3 | 156 | 308 | 1 | 26 |
| 27 | 723 | | 2 | 725 | | 130 | 2 | 178 | 310 | 2 | 27 |
| 28 | 865 | 9 | 5 | 879 | | 84 | 1 | 148 | 233 | 4 | 28 |
| 29 | 686 | 1 | 4 | 691 | | 104 | 0 | 183 | 287 | 1 | 29 |
| 30 | 500 | 3 | 1 | 504 | 34 | 63 | 1 | 182 | 246 | 0 | 30 |
| 31 | | | | | | 77 | 0 | 114 | 191 | 0 | 31 |
| TOTAL | 15,818 | 41 | 232 | 16,091 | 34 | 9,369 | 179 | 1,989 | 11,537 | 763 | |

1409

TABLE 73
DAILY SALMONID AND SHAD COUNT - AUGUST & SEPTEMBER - 1970
LOWER MONUMENTAL DAM

| Date | AUGUST | | | | | | SEPTEMBER | | | | | Date |
|-------|---------|---------|------|------------|----------------|------|-----------|---------|-------|------------|----------------|------|
| | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | Shad | Chinook | Sockeye | Coho | Steel-head | Total Salmonid | |
| 1 | 111 | | | 288 | 399 | | 21 | | 48 | 259 | 346 | 1 |
| 2 | 102 | | | 315 | 417 | 2 | 61 | | 87 | 291 | 439 | 2 |
| 3 | 107 | | | 262 | 369 | | 49 | | 85 | 322 | 456 | 3 |
| 4 | 111 | 1 | | 194 | 306 | | 49 | 4 | 45 | 222 | 320 | 4 |
| 5 | 97 | | | 204 | 301 | | 64 | | 49 | 251 | 362 | 5 |
| 6 | 86 | | | 258 | 344 | 2 | 79 | 5 | 45 | 413 | 542 | 6 |
| 7 | 63 | | | 328 | 391 | 2 | 69 | | 37 | 257 | 363 | 7 |
| 8 | 70 | | | 284 | 354 | | 58 | | 41 | 312 | 411 | 8 |
| 9 | 41 | | | 234 | 275 | | 68 | | 42 | 272 | 382 | 9 |
| 10 | 53 | | | 194 | 247 | 2 | 46 | | 70 | 503 | 619 | 10 |
| 11 | 39 | | | 297 | 336 | | 63 | | 115 | 453 | 631 | 11 |
| 12 | 58 | | | 212 | 270 | | 171 | | 162 | 742 | 1,075 | 12 |
| 13 | 82 | | | 314 | 396 | 1 | 158 | | 181 | 668 | 1,007 | 13 |
| 14 | 59 | 1 | | 262 | 322 | | 251 | | 164 | 931 | 1,346 | 14 |
| 15 | 56 | 1 | | 261 | 318 | | 121 | | 102 | 801 | 1,024 | 15 |
| 16 | 35 | 3 | | 272 | 310 | 2 | 354 | | 165 | 1,012 | 1,531 | 16 |
| 17 | 53 | | | 288 | 341 | 1 | 404 | | 166 | 1,208 | 1,778 | 17 |
| 18 | 60 | | | 229 | 289 | | 505 | | 145 | 2,215 | 2,865 | 18 |
| 19 | 35 | | | 123 | 158 | | 379 | | 73 | 1,941 | 2,393 | 19 |
| 20 | 55 | | | 310 | 365 | | 512 | | 86 | 3,588 | 4,186 | 20 |
| 21 | 55 | | 7 | 293 | 355 | | 236 | | 45 | 2,266 | 2,547 | 21 |
| 22 | 15 | | 9 | 272 | 296 | | 235 | | 82 | 1,318 | 1,635 | 22 |
| 23 | 11 | | 3 | 153 | 167 | | 312 | | 77 | 1,460 | 1,849 | 23 |
| 24 | 20 | | 10 | 177 | 207 | | 234 | | 75 | 1,773 | 2,082 | 24 |
| 25 | 29 | | 16 | 278 | 323 | | 132 | | 93 | 1,191 | 1,416 | 25 |
| 26 | 36 | | 75 | 251 | 362 | 2 | 111 | | 34 | 1,383 | 1,528 | 26 |
| 27 | 39 | | 48 | 267 | 354 | | 148 | | 24 | 1,111 | 1,283 | 27 |
| 28 | 42 | 1 | 30 | 356 | 429 | | 110 | | 18 | 1,414 | 1,542 | 28 |
| 29 | 32 | | 20 | 307 | 359 | | 89 | | 12 | 966 | 1,067 | 29 |
| 30 | 26 | 4 | 25 | 225 | 280 | | 89 | | 17 | 1,158 | 1,264 | 30 |
| 31 | 42 | | 56 | 239 | 337 | 1 | | | | | | 31 |
| TOTAL | 1,720 | 11 | 299 | 7,947 | 9,977 | 15 | 5,178 | 9 | 2,385 | 30,701 | 38,273 | |

TABLE 73

TABLE 74
DAILY SALMONID COUNT - OCTOBER, NOVEMBER AND DECEMBER - 1970
LOWER MONUMENTAL DAM

| Date | OCTOBER | | | | NOVEMBER | | | | DECEMBER | | | Date |
|--------|---------|------|------------|--------|----------|------|------------|-------|----------|------------|-------|------|
| | Chinook | Coho | Steel-head | Total | Chinook | Coho | Steel-head | Total | Chinook | Steel-head | Total | |
| 1 | 77 | 32 | 992 | 1,101 | 22 | 3 | 72 | 97 | 1 | 28 | 29 | 1 |
| 2 | 83 | 55 | 1,061 | 1,199 | 11 | 0 | 105 | 116 | 0 | 22 | 22 | 2 |
| 3 | 103 | 20 | 791 | 914 | 3 | 0 | 61 | 64 | 1 | 13 | 14 | 3 |
| 4 | 58 | 24 | 712 | 794 | 5 | 0 | 76 | 81 | 0 | 20 | 20 | 4 |
| 5 | 85 | 18 | 873 | 976 | 3 | 0 | 54 | 57 | 1 | 12 | 13 | 5 |
| 6 | 51 | 12 | 520 | 583 | 3 | 0 | 54 | 57 | 0 | 37 | 37 | 6 |
| 7 | 60 | 10 | 410 | 480 | 6 | 0 | 71 | 77 | 0 | 16 | 16 | 7 |
| 8 | 41 | 13 | 548 | 602 | 5 | 0 | 61 | 66 | 0 | 19 | 19 | 8 |
| 9 | 35 | 1 | 335 | 371 | 10 | 0 | 119 | 129 | 0 | 28 | 28 | 9 |
| 10 | 25 | 4 | 357 | 386 | 5 | 0 | 105 | 110 | 0 | 21 | 21 | 10 |
| 11 | 23 | 6 | 457 | 486 | 3 | 0 | 104 | 107 | 0 | 19 | 19 | 11 |
| 12 | 16 | 4 | 432 | 452 | 8 | 0 | 57 | 65 | 0 | 19 | 19 | 12 |
| 13 | 20 | 11 | 362 | 393 | 2 | 0 | 39 | 41 | 0 | 14 | 14 | 13 |
| 14 | 61 | 9 | 524 | 594 | 4 | 0 | 30 | 34 | 0 | 17 | 17 | 14 |
| 15 | 42 | 12 | 355 | 409 | 6 | 1 | 52 | 59 | 0 | 13 | 13 | 15 |
| 16 | 34 | 2 | 210 | 246 | 0 | 2 | 42 | 44 | 0 | 13 | 13 | 16 |
| 17 | 40 | 8 | 347 | 395 | 3 | 0 | 54 | 57 | 0 | 11 | 11 | 17 |
| 18 | 39 | 7 | 215 | 261 | 4 | 0 | 36 | 40 | 0 | 8 | 8 | 18 |
| 19 | 31 | 2 | 220 | 253 | 2 | 1 | 47 | 50 | 0 | 7 | 7 | 19 |
| 20 | 24 | 2 | 170 | 196 | 2 | 0 | 45 | 47 | 0 | 9 | 9 | 20 |
| 21 | 32 | 2 | 170 | 204 | 4 | 0 | 44 | 48 | 0 | 8 | 8 | 21 |
| 22 | 43 | 5 | 154 | 202 | 0 | 0 | 37 | 37 | 0 | 13 | 13 | 22 |
| 23 | 36 | 2 | 134 | 172 | 6 | 0 | 31 | 37 | 0 | 12 | 12 | 23 |
| 24 | 45 | 5 | 145 | 195 | 1 | 0 | 25 | 26 | 0 | 8 | 8 | 24 |
| 25 | 42 | 4 | 195 | 241 | 0 | 0 | 53 | 53 | 0 | | | 25 |
| 26 | 36 | 1 | 135 | 172 | H | 0 | H | H | 0 | 5 | 5 | 26 |
| 27 | 17 | 2 | 84 | 103 | 2 | 0 | 41 | 43 | 0 | 10 | 10 | 27 |
| 28 | 33 | 5 | 88 | 126 | 2 | 0 | 33 | 35 | 0 | 10 | 10 | 28 |
| 29 | 18 | 2 | 58 | 78 | 0 | 0 | 43 | 43 | 0 | 2 | 2 | 29 |
| 30 | 24 | 1 | 86 | 111 | 0 | 0 | 24 | 24 | 0 | 1 | 1 | 30 |
| 31 | 7 | 0 | 54 | 61 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 31 |
| TOTALS | 1,281 | 281 | 11,194 | 12,756 | 122 | 7 | 1,615 | 1,744 | 3 | 416 | 419 | |

TABLE 75

MONTHLY TOTALS OF SALMONIDS COUNTED OVER LITTLE GOOSE DAM

1970

| Species | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--------------|-----|-----|-------|--------|--------|--------|--------|-------|--------|--------|-------|-----|---------|
| Chinook | - | - | - | 6,765 | 32,616 | 15,204 | 11,200 | 1,529 | 4,508 | 965 | 178 | 6 | 72,971 |
| Sockeye | - | - | - | | | | 136 | 6 | 21 | | | | 163 |
| Coho | - | - | - | | | | | 138 | 2,140 | 196 | 6 | | 2,480 |
| Steelhead | - | - | 3,346 | 4,148 | 1,762 | 167 | 1,485 | 7,487 | 27,898 | 11,931 | 1,136 | 280 | 59,640 |
| TOTAL SALMON | - | - | 3,346 | 10,913 | 34,378 | 15,371 | 12,821 | 9,160 | 34,567 | 13,092 | 1,320 | 286 | 135,254 |

TABLE 76

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - MARCH AND APRIL 1970

LITTLE GOOSE DAM

TABLE 76

| DATE | MARCH * | APRIL | | | | | | DATE |
|------|-----------|-------------------|-----------|--------|---------|-----------|--------|------|
| | STEELHEAD | WATER TEMPERATURE | RIVER | | CHINOOK | STEELHEAD | TOTAL | |
| | | | TURBIDITY | FLOW | | | | |
| 1 | 15 | 47 | | 40,900 | | 132 | 132 | 1 |
| 2 | 47 | 46 | | 38,800 | | 246 | 246 | 2 |
| 3 | 6 | 46 | | 43,100 | | 164 | 164 | 3 |
| 4 | 71 | 46 | | 41,700 | | 178 | 178 | 4 |
| 5 | 49 | 46 | | 35,600 | | 271 | 271 | 5 |
| 6 | 20 | 46 | | 41,100 | | 80 | 80 | 6 |
| 7 | 60 | 47 | | 41,500 | | 76 | 76 | 7 |
| 8 | 18 | 47 | | 46,000 | 1 | 68 | 68 | 8 |
| 9 | 7 | 46 | | 43,100 | | 82 | 82 | 9 |
| 10 | 8 | 48 | 2.5 | 41,600 | 2 | 154 | 156 | 10 |
| 11 | 16 | 48 | 2.5 | 54,900 | | 134 | 134 | 11 |
| 12 | 36 | 47 | 2.5 | 53,200 | 3 | 154 | 157 | 12 |
| 13 | 103 | 47 | 2.3 | 50,000 | 3 | 250 | 253 | 13 |
| 14 | 219 | 47 | 2.8 | 59,500 | 3 | 97 | 100 | 14 |
| 15 | 118 | 47 | 2.6 | 56,000 | 4 | 86 | 90 | 15 |
| 16 | 103 | 47 | 2.6 | 53,400 | 3 | 85 | 85 | 16 |
| 17 | 213 | 51 | 2.6 | 55,600 | 10 | 60 | 70 | 17 |
| 18 | 85 | 54 | 2.6 | 48,300 | 47 | 113 | 160 | 18 |
| 19 | 191 | 56 | 2.6 | 49,300 | 119 | 91 | 210 | 19 |
| 20 | 247 | 48 | 2.6 | 51,900 | 436 | 164 | 600 | 20 |
| 21 | 182 | 48 | 2.7 | 49,500 | 278 | 151 | 429 | 21 |
| 22 | 131 | 48 | 2.7 | 50,300 | 385 | 199 | 584 | 22 |
| 23 | 65 | 48 | 2.8 | 51,200 | 518 | 166 | 684 | 23 |
| 24 | 54 | 48 | 2.6 | 49,300 | 612 | 165 | 777 | 24 |
| 25 | 65 | 46 | 2.7 | 42,800 | 593 | 112 | 705 | 25 |
| 26 | 129 | 46 | 2.8 | 47,500 | 824 | 126 | 950 | 26 |
| 27 | 233 | 48 | 2.4 | 45,800 | 895 | 135 | 1030 | 27 |
| 28 | 363 | 48 | 2.4 | 44,400 | 676 | 120 | 796 | 28 |
| 29 | 208 | 48 | 2.5 | 43,200 | 431 | 145 | 576 | 29 |
| 30 | 121 | 50 | 3.0 | 52,600 | 922 | 144 | 1066 | 30 |
| 31 | 163 | | | | | | | |
| | 3346 | | | | 6,765 | 4,148 | 10,913 | |

* Instruments for measuring water temperature and turbidity not available till April.

TABLE 77

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - MAY 1970

LITTLE GOOSE DAM

| DATE | WATER TEMPERATURE | RIVER | | CHINOOK | STEELHEAD | TOTAL |
|-------|----------------------|-----------|---------|---------|-----------|--------|
| | | TURBIDITY | FLOW | | | |
| 1 | 50 | 3.0 | 47,000 | 545 | 103 | 648 |
| 2 | 50 | 3.0 | 46,900 | 1862 | 109 | 1971 |
| 3 | 50 | 3.0 | 46,400 | 1632 | 142 | 1774 |
| 4 | 50 | 3.0 | 47,100 | 3464 | 134 | 3598 |
| 5 | 50 | 3.4 | 66,500 | 3433 | 114 | 3547 |
| 6 | 50 | 3.6 | 83,300 | 1392 | 71 | 1463 |
| 7 | 50 | 3.6 | 99,000 | 1375 | 59 | 1434 |
| 8 | 50 | 2.7 | 112,400 | 2763 | 65 | 2328 |
| 9 | 48 | 2.7 | 104,000 | 550 | 59 | 609 |
| 10 | 46 | 2.7 | 102,300 | 560 | 52 | 612 |
| 11 | 50 | 2.7 | 100,700 | 261 | 41 | 302 |
| 12 | 50 | 2.7 | 92,600 | 2726 | 59 | 2785 |
| 13 | 50 | 2.8 | 88,800 | 1859 | 96 | 1955 |
| 14 | 50 | 2.8 | 84,500 | 1076 | 56 | 1132 |
| 15 | 50 | 3.0 | 79,200 | 3207 | 62 | 3269 |
| 16 | 50 | 3.5 | 80,000 | 1682 | 67 | 1749 |
| 17 | 50 | 4.2 | 92,600 | 1286 | 45 | 1331 |
| 18 | 50 | 3.9 | 126,400 | 584 | 42 | 626 |
| 19 | 50 | 3.9 | 151,800 | 555 | 45 | 600 |
| 20 | 52 | 3.9 | 169,700 | 689 | 33 | 722 |
| 21 | 52 | 3.9 | 170,400 | 346 | 38 | 384 |
| 22 | 52 | 2.0 | 160,200 | 93 | 30 | 123 |
| 23 | 52 | 2.0 | 162,400 | 82 | 21 | 103 |
| 24 | 52 | 2.2 | 177,600 | 125 | 28 | 153 |
| 25 | 50 | 2.2 | 179,700 | 125 | 39 | 164 |
| 26 | 54 | 2.2 | 192,300 | 112 | 40 | 152 |
| 27 | 53 | 2.2 | 198,600 | 144 | 22 | 166 |
| 28 | 53 | 2.5 | 184,000 | 128 | 27 | 155 |
| 29 | 52 | 2.5 | 162,900 | 78 | 20 | 98 |
| 30 | 52 | 2.5 | 149,000 | 145 | 21 | 166 |
| 31 | 52 | 1.6 | 135,700 | 237 | 22 | 259 |
| TOTAL | | | | 32,616 | 1,762 | 34,378 |

TABLE 77

TABLE 78

CLIMATOLOGICAL, STREAM FLOW, AND SALMONID FISH COUNTS - JUNE 1970

LITTLE GOOSE DAM

TABLE 78

| DATE | WATER TEMPERATURE | RIVER | | CHINOOK | STEELHEAD | TOTAL |
|-------|----------------------|-----------|---------|---------|-----------|--------|
| | | TURBIDITY | FLOW | | | |
| 1 | 54 | 1.7 | 124,300 | 256 | 24 | 280 |
| 2 | 54 | 1.7 | 124,400 | 408 | 24 | 432 |
| 3 | 59 | 2.5 | 144,800 | 303 | 17 | 320 |
| 4 | 59 | 2.8 | 171,700 | 465 | 18 | 483 |
| 5 | 56 | 2.2 | 205,800 | 230 | 8 | 238 |
| 6 | 56 | 1.6 | 208,900 | 305 | 16 | 321 |
| 7 | 56 | 1.4 | 219,300 | 219 | 6 | 225 |
| 8 | 56 | 1.0 | 210,400 | 60 | 3 | 63 |
| 9 | 54 | 1.0 | 190,400 | 40 | 5 | 45 |
| 10 | 54 | 1.4 | 189,100 | 160 | 5 | 165 |
| 11 | 47 | 1.3 | 174,800 | 228 | 4 | 232 |
| 12 | 52 | 1.4 | 152,500 | 281 | 7 | 288 |
| 13 | 52 | 1.6 | 132,400 | 239 | 4 | 243 |
| 14 | 53 | 1.6 | 124,700 | 436 | 4 | 440 |
| 15 | 52 | 1.6 | 134,000 | 561 | 5 | 566 |
| 16 | 52 | 1.7 | 146,900 | 729 | 4 | 733 |
| 17 | 52 | 1.7 | 138,300 | 781 | 2 | 783 |
| 18 | 57 | 1.7 | 128,600 | 689 | 1 | 690 |
| 19 | 58 | 3.0 | 131,500 | 807 | 2 | 809 |
| 20 | 60 | 3.0 | 135,500 | 684 | . | 684 |
| 21 | 62 | 3.5 | 140,700 | 715 | . | 715 |
| 22 | 62 | 3.0 | 146,700 | 695 | 1 | 696 |
| 23 | 62 | 3.2 | 143,200 | 806 | . | 806 |
| 24 | 62 | 3.2 | 142,300 | 831 | 1 | 832 |
| 25 | 62 | 3.2 | 130,700 | 671 | . | 671 |
| 26 | 67 | 3.2 | 121,500 | 651 | 2 | 653 |
| 27 | 65 | 2.7 | 113,600 | 496 | . | 496 |
| 28 | 58 | 2.4 | 118,000 | 938 | 2 | 940 |
| 30 | 60 | 2.8 | 129,500 | 783 | . | 783 |
| 31 | 62 | 2.7 | 124,000 | 737 | 2 | 739 |
| TOTAL | | | | 15,204 | 167 | 15,371 |

TABLE 79

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - JULY 1970

LITTLE GOOSE DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | CHINOOK | STEELHEAD | SOCKEYE | TOTAL |
|-------|----------------------|-----------|---------|---------|-----------|---------|--------|
| 1 | 62 | 2.5 | 118,400 | 366 | 2 | 0 | 368 |
| 2 | 61 | 2.6 | 111,900 | 574 | . | 0 | 574 |
| 3 | 62 | 2.1 | 110,400 | 718 | 1 | 2 | 721 |
| 4 | 62 | 2.1 | 99,500 | 389 | . | 0 | 389 |
| 5 | 62 | 2.6 | 86,500 | 383 | . | 1 | 384 |
| 6 | 63 | 3.1 | 76,000 | 361 | . | 0 | 361 |
| 7 | 64 | 3.1 | 70,900 | 623 | 1 | 3 | 627 |
| 8 | 64 | 3.2 | 65,500 | 510 | 2 | 2 | 514 |
| 9 | 67 | 4.0 | 62,500 | 702 | . | 2 | 704 |
| 10 | 70 | 4.0 | 56,000 | 831 | 4 | 9 | 844 |
| 11 | 70 | 4.1 | 57,500 | 364 | 8 | 6 | 378 |
| 12 | 69 | 4.1 | 48,900 | 536 | 9 | 3 | 548 |
| 13 | 68 | 4.1 | 49,200 | 139 | 4 | 3 | 146 |
| 14 | 70 | 4.2 | 49,100 | 554 | 18 | 4 | 576 |
| 15 | 72 | 4.3 | 48,600 | 634 | 19 | 4 | 657 |
| 16 | 70 | 4.6 | 44,600 | 142 | 27 | 2 | 171 |
| 17 | 70 | 4.7 | 41,600 | 419 | 58 | 6 | 483 |
| 18 | 74 | 4.8 | 40,300 | 516 | 43 | 5 | 564 |
| 19 | 74 | 4.8 | 42,400 | 105 | 38 | 3 | 146 |
| 20 | 72 | 4.8 | 33,600 | 305 | 54 | 6 | 365 |
| 21 | 70 | 4.8 | 32,500 | 333 | 74 | 6 | 413 |
| 22 | 72 | 4.9 | 33,400 | 407 | 105 | 2 | 514 |
| 23 | 72 | 4.9 | 31,000 | 177 | 86 | 3 | 266 |
| 24 | 72 | 4.9 | 32,700 | 121 | 78 | 4 | 203 |
| 25 | 72 | 4.9 | 29,400 | 206 | 81 | 36 | 323 |
| 26 | 72 | 4.9 | 27,100 | 143 | 88 | 10 | 241 |
| 27 | 70 | 5.0 | 28,600 | 92 | 80 | 12 | 184 |
| 28 | 70 | 5.0 | 26,600 | 146 | 139 | 0 | 285 |
| 29 | 70 | 4.8 | 29,400 | 156 | 142 | 0 | 298 |
| 30 | 70 | 4.9 | 30,400 | 177 | 220 | 1 | 398 |
| 31 | 71 | 4.9 | 29,400 | 71 | 104 | 1 | 176 |
| TOTAL | | | | 11,200 | 1,485 | 136 | 12,821 |

TABLE 79

TABLE 80

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - AUGUST 1970

LITTLE GOOSE DAM

TABLE 80

| DATE | Water TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL |
|-------|----------------------|-----------|--------|-----------|---------|------|---------|-------|
| 1 | 70 | 5.0 | 29,300 | 194 | | | 90 | 284 |
| 2 | 70 | 5.0 | 27,100 | 189 | | | 78 | 267 |
| 3 | 70 | 5.0 | 25,800 | 202 | | | 110 | 312 |
| 4 | 72 | 5.0 | 27,700 | 226 | | | 59 | 226 |
| 5 | 70 | 5.0 | 32,600 | 154 | | | 38 | 192 |
| 6 | 70 | 5.0 | 32,700 | 255 | | | 113 | 255 |
| 7 | 62 | 5.0 | 25,300 | 264 | | | 55 | 319 |
| 8 | 65 | 5.0 | 25,100 | 298 | | | 77 | 375 |
| 9 | 70 | 5.0 | 23,100 | 191 | | | 72 | 263 |
| 10 | 70 | 5.0 | 19,300 | 199 | | | 54 | 253 |
| 11 | 74 | 5.0 | 22,300 | 226 | | | 34 | 260 |
| 12 | 72 | 5.0 | 21,000 | 173 | | | 24 | 197 |
| 13 | 73 | 5.0 | 19,200 | 210 | | | 33 | 243 |
| 14 | 72 | 5.0 | 21,000 | 258 | | | 57 | 315 |
| 15 | 72 | 5.0 | 22,300 | 191 | | | 67 | 258 |
| 16 | 72 | 5.0 | 21,400 | 228 | | | 30 | 258 |
| 17 | 72 | 4.5 | 20,600 | 340 | 2 | | 50 | 392 |
| 18 | 70 | 4.5 | 11,900 | 292 | | | 58 | 350 |
| 19 | 71 | 5.0 | 19,000 | 204 | | | 41 | 245 |
| 20 | 71 | 4.8 | 20,200 | 240 | | | 18 | 258 |
| 21 | 74 | 4.8 | 19,700 | 253 | | | 36 | 289 |
| 22 | 74 | 4.8 | 19,700 | 190 | | | 12 | 202 |
| 23 | 74 | 5.0 | 12,800 | 260 | | | 17 | 277 |
| 24 | 74 | 5.0 | 19,300 | 202 | | | 12 | 214 |
| 25 | 72 | 5.0 | 21,900 | 217 | | 2 | 30 | 249 |
| 26 | 70 | 4.9 | 22,200 | 253 | | 4 | 36 | 293 |
| 27 | 70 | 4.9 | 22,200 | 247 | 1 | 8 | 54 | 310 |
| 28 | 70 | 5.0 | 22,500 | 371 | 2 | 41 | 53 | 467 |
| 29 | 70 | 5.0 | 22,400 | 471 | | 49 | 58 | 578 |
| 30 | 70 | 5.0 | 12,300 | 280 | | 17 | 32 | 329 |
| 31 | 73 | 5.0 | 19,700 | 209 | 1 | 17 | 31 | 258 |
| TOTAL | | | | 7,487 | 6 | 138 | 1,529 | 9,160 |

TABLE 81

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - SEPTEMBER 1970

LITTLE GOOSE DAM

| DATE | Water TEMPERATURE | TURBIDITY | FLOW | STEELHEAD | SOCKEYE | COHO | CHINOOK | TOTAL |
|-------|----------------------|-----------|--------|-----------|---------|-------|---------|--------|
| 1 | 72 | 5.0 | 18,500 | 330 | 2 | 11 | 66 | 409 |
| 2 | 71 | 4.9 | 18,800 | 261 | | 43 | 49 | 353 |
| 3 | 72 | 4.9 | 19,000 | 143 | | 51 | 59 | 253 |
| 4 | 67 | 4.9 | 22,100 | 208 | | 37 | 60 | 305 |
| 5 | 66 | 4.9 | 22,600 | 242 | | 103 | 43 | 388 |
| 6 | 64 | 4.7 | 17,400 | 282 | 3 | 66 | 49 | 400 |
| 7 | 67 | 4.7 | 22,200 | 302 | 5 | 66 | 59 | 432 |
| 8 | 66 | 4.6 | 22,500 | 269 | 5 | 50 | 56 | 380 |
| 9 | 67 | 4.8 | 38,800 | 234 | 3 | 99 | 53 | 389 |
| 10 | 67 | 4.1 | 39,500 | 141 | | 30 | 12 | 183 |
| 11 | 67 | 4.1 | 33,400 | 494 | | 121 | 106 | 721 |
| 12 | 65 | 4.1 | 28,500 | 554 | | 62 | 164 | 780 |
| 13 | 65 | 4.0 | 29,400 | 552 | | 113 | 153 | 818 |
| 14 | 64 | 4.9 | 27,000 | 558 | | 95 | 162 | 815 |
| 15 | 64 | 4.0 | 26,400 | 630 | 3 | 103 | 152 | 888 |
| 16 | 64 | 4.9 | 24,900 | 715 | | 100 | 192 | 1,007 |
| 17 | 64 | 4.8 | 27,000 | 734 | | 130 | 304 | 1,168 |
| 18 | 63 | 4.7 | 25,500 | 1,155 | | 124 | 397 | 1,676 |
| 19 | 63 | 4.7 | 22,300 | 2,304 | | 146 | 622 | 3,072 |
| 20 | 63 | 4.7 | 22,700 | 1,185 | | 20 | 153 | 1,358 |
| 21 | 63 | 4.7 | 24,200 | 2,403 | | 62 | 284 | 2,749 |
| 22 | 62 | 4.7 | 30,400 | 2,424 | | 87 | 221 | 2,732 |
| 23 | 62 | 4.7 | 29,500 | 2,391 | | 96 | 346 | 2,833 |
| 24 | 61 | 4.6 | 35,200 | 1,038 | | 45 | 59 | 1,142 |
| 25 | 61 | 4.6 | 35,700 | 1,341 | | 76 | 182 | 1,599 |
| 26 | 61 | 4.6 | 29,900 | 1,707 | | 72 | 243 | 2,022 |
| 27 | 61 | 4.6 | 28,000 | 1,766 | | 41 | 49 | 1,856 |
| 28 | 59 | 4.8 | 27,100 | 917 | | 44 | 91 | 1,052 |
| 29 | 58 | 4.8 | 27,500 | 1,079 | | 28 | 81 | 1,188 |
| 30 | 59 | 4.8 | 28,000 | 1,539 | | 19 | 41 | 1,599 |
| 31 | | | | | | | | |
| TOTAL | | | | 27,898 | 21 | 2,140 | 4,508 | 34,567 |

TABLE 81

TABLE 82

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - OCTOBER 1970

LITTLE GOOSE DAM

TABLE 82

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | CHINOOK | STEELHEAD | COHO | TOTAL |
|-------|----------------------|-----------|--------|---------|-----------|------|--------|
| 1 | 60 | 5.0 | 24,900 | 39 | 946 | 13 | 998 |
| 2 | 62 | 4.1 | 25,700 | 192 | 1,188 | 37 | 1,417 |
| 3 | 61 | 4.4 | 27,700 | 93 | 987 | 22 | 1,102 |
| 4 | 60 | 4.0 | 23,200 | 38 | 967 | 23 | 1,028 |
| 5 | 60 | 4.0 | 24,500 | 13 | 669 | 16 | 698 |
| 6 | 60 | 3.7 | 27,000 | 64 | 467 | 18 | 549 |
| 7 | 59 | 4.0 | 27,900 | 25 | 399 | 16 | 440 |
| 8 | 59 | 3.9 | 24,600 | 14 | 480 | 1 | 495 |
| 9 | 60 | 3.7 | 36,400 | 36 | 346 | 3 | 385 |
| 10 | 60 | 4.0 | 31,700 | 27 | 655 | 5 | 687 |
| 11 | 60 | 4.2 | 23,500 | 32 | 644 | 4 | 680 |
| 12 | 60 | 4.3 | 22,400 | 16 | 521 | 11 | 548 |
| 13 | 59 | 4.4 | 22,200 | 37 | 368 | 0 | 405 |
| 14 | 59 | 4.2 | 26,900 | 55 | 288 | 1 | 344 |
| 15 | 58 | 4.4 | 28,400 | 17 | 319 | 1 | 337 |
| 16 | 58 | 4.7 | 29,400 | 22 | 251 | 1 | 274 |
| 17 | 57 | 4.7 | 27,500 | 17 | 233 | 1 | 251 |
| 18 | 57 | 4.9 | 25,400 | 7 | 323 | 1 | 331 |
| 19 | 57 | 4.9 | 26,400 | 3 | 84 | 2 | 89 |
| 20 | 57 | 4.9 | 29,400 | 22 | 229 | 0 | 251 |
| 21 | 57 | 5.0 | 31,700 | 18 | 310 | 1 | 329 |
| 22 | 58 | 4.7 | 34,200 | 10 | 114 | 2 | 126 |
| 23 | 56 | 4.5 | 32,400 | 11 | 99 | 4 | 114 |
| 24 | 54 | 4.0 | 32,800 | 5 | 234 | 3 | 242 |
| 25 | 53 | 4.0 | 33,900 | 20 | 244 | 3 | 267 |
| 26 | 53 | 3.8 | 35,000 | 8 | 87 | 1 | 96 |
| 27 | 53 | 4.4 | 26,000 | 24 | 133 | 2 | 159 |
| 28 | 53 | 4.9 | 31,100 | 36 | 109 | 0 | 145 |
| 29 | 52 | 4.9 | 27,000 | 43 | 138 | 1 | 182 |
| 30 | 53 | 4.9 | 26,800 | 13 | 49 | 2 | 64 |
| 31 | 53 | 4.9 | 24,700 | 8 | 50 | 1 | 59 |
| TOTAL | | | | 965 | 11,931 | 196 | 13,092 |

TABLE 83

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNTS - NOVEMBER 1970

LITTLE GOOSE DAM

| DATE | WATER TEMPERATURE | TURBIDITY | FLOW | CHINOOK | STEELHEAD | COHO | TOTAL |
|-------|----------------------|-----------|--------|---------|-----------|------|-------|
| 1 | 53 | 5.0 | 27,000 | 35 | 25 | 0 | 60 |
| 2 | 52 | 5.0 | 28,500 | 25 | 36 | 0 | 61 |
| 3 | 51 | 4.9 | 25,000 | 34 | 45 | 1 | 80 |
| 4 | 51 | 4.9 | 29,000 | 14 | 53 | 0 | 67 |
| 5 | 51 | 4.9 | 32,300 | 5 | 27 | 0 | 32 |
| 6 | 51 | 4.7 | 25,600 | 7 | 47 | 1 | 55 |
| 7 | 51 | 4.9 | 28,300 | 4 | 45 | 0 | 49 |
| 8 | 51 | 4.9 | 26,600 | 6 | 48 | 0 | 54 |
| 9 | 51 | 4.9 | 25,400 | . | 29 | 0 | 29 |
| 10 | 50 | 4.9 | 30,500 | 6 | 67 | 0 | 73 |
| 11 | 50 | 5.3 | 35,100 | 3 | 33 | 0 | 36 |
| 12 | 50 | 5.3 | 36,700 | 8 | 26 | 0 | 34 |
| 13 | 50 | 5.3 | 29,900 | . | 49 | 3 | 52 |
| 14 | 50 | 4.9 | 31,800 | 1 | 45 | 0 | 46 |
| 15 | 50 | 4.9 | 32,600 | 4 | 41 | 0 | 45 |
| 16 | 50 | 5.0 | 31,000 | 8 | 18 | 0 | 26 |
| 17 | 52 | 5.0 | 35,700 | 3 | 28 | 0 | 31 |
| 18 | 52 | 5.0 | 40,500 | 3 | 49 | 1 | 53 |
| 19 | 50 | 4.8 | 43,600 | . | 91 | 0 | 91 |
| 20 | 50 | 3.5 | 40,400 | . | 39 | 0 | 39 |
| 21 | 48 | 4.9 | 35,100 | 3 | 58 | 0 | 61 |
| 22 | 46 | 4.3 | 34,300 | 1 | 48 | 0 | 49 |
| 23 | 46 | 4.3 | 35,800 | 1 | 28 | 0 | 29 |
| 24 | 46 | 4.3 | 37,800 | 1 | 7 | 0 | 8 |
| 25 | 46 | 4.4 | 43,400 | . | 17 | 0 | 17 |
| 26 | 46 | 4.4 | 44,000 | 2 | 24 | 0 | 26 |
| 27 | 46 | 4.4 | 44,500 | 3 | 47 | 0 | 50 |
| 28 | 46 | 4.4 | 44,400 | . | 37 | 0 | 37 |
| 29 | 46 | 4.4 | 40,900 | 1 | 23 | 0 | 24 |
| 30 | 44 | 4.4 | 37,700 | . | 6 | 0 | 6 |
| TOTAL | | | | 178 | 1,136 | 6 | 1,320 |

TABLE 83

TABLE 84

CLIMATOLOGICAL, STREAM FLOW AND SALMONID FISH COUNT - DECEMBER 1970

LITTLE GOOSE DAM

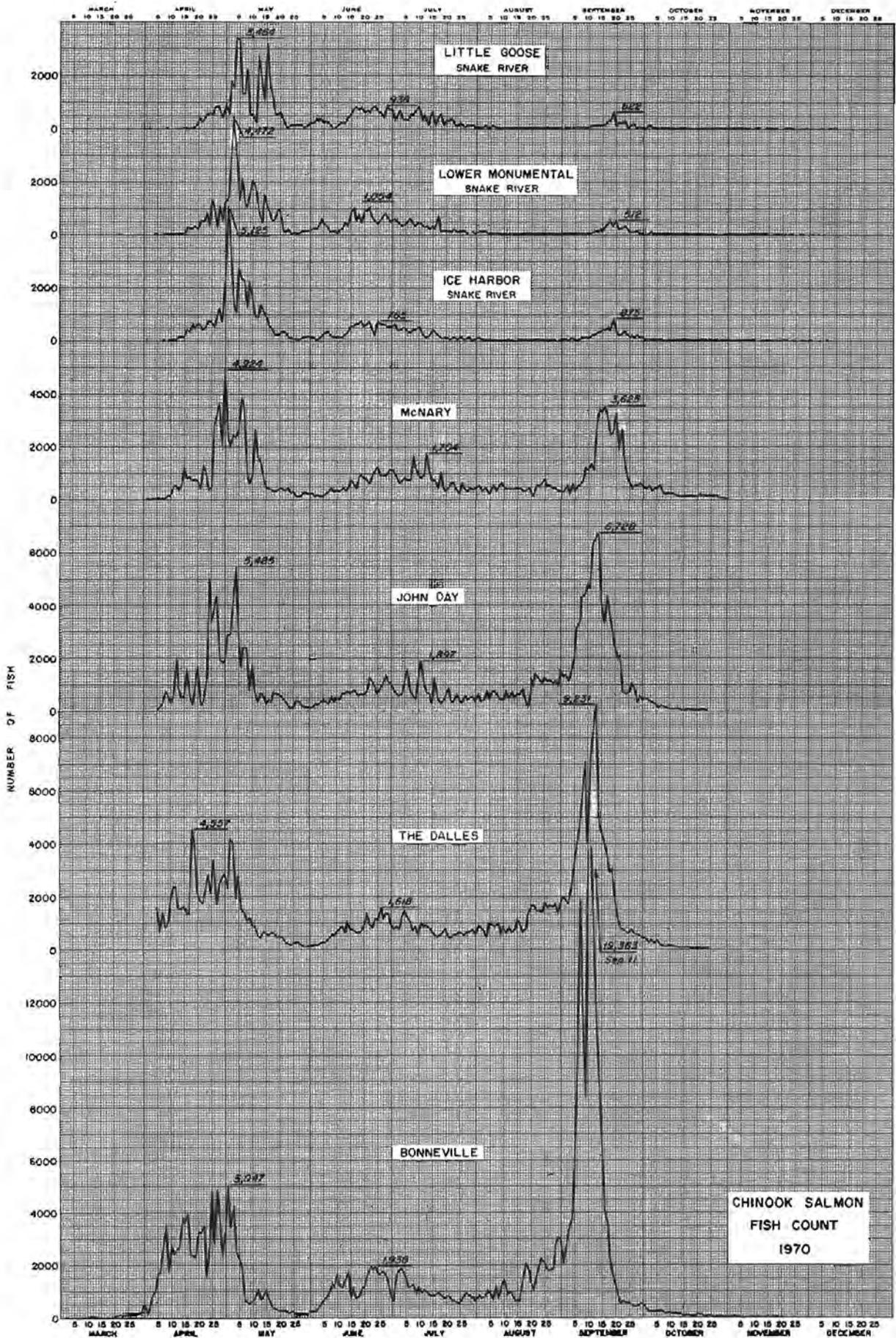
TABLE 84

| DATE | WATER TEMPERATURE | RIVER | | CHINOOK | STEELHEAD | TOTAL |
|-------|-------------------|-----------|--------|--------------------|-----------|-------|
| | | TURBIDITY | FLOW | | | |
| 1 | 44 | 4.4 | 36,900 | | 19 | 19 |
| 2 | 45 | 3.2 | 30,000 | 1 | 17 | 18 |
| 3 | 45 | 3.2 | 38,400 | | 41 | 41 |
| 4 | 44 | 3.3 | 42,100 | 1 | 26 | 27 |
| 5 | 44 | 3.2 | 44,200 | 1 | 28 | 29 |
| 6 | 44 | 3.2 | 42,100 | | 20 | 20 |
| 7 | 44 | 3.4 | 34,800 | 1 | 12 | 13 |
| 8 | 41 | 3.5 | 38,000 | | 17 | 17 |
| 9 | 41 | 3.4 | 43,600 | 2 | 9 | -9 |
| 10 | 41 | 3.4 | 35,800 | | 12 | 12 |
| 11 | 41 | 3.4 | 44,500 | | 5 | 5 |
| 12 | 41 | 3.4 | 44,200 | | | |
| 13 | 41 | 3.5 | 44,100 | | 2 | 2 |
| 14 | 40 | 4.2 | 42,500 | | 3 | 3 |
| 15 | 44 | 4.3 | 38,800 | | 3 | 3 |
| 16 | 41 | 3.9 | 39,700 | | 13 | 13 |
| 17 | 41 | 4.3 | 45,200 | | 5 | 5 |
| 18 | 40 | 4.3 | 44,100 | | 1 | 1 |
| 19 | 40 | 4.5 | 41,800 | | 12 | 12 |
| 20 | 40 | 4.4 | 38,500 | | 11 | 11 |
| 21 | 40 | 4.4 | 44,000 | | 5 | 5 |
| 22 | 39 | 4.4 | 42,600 | | 1 | 1 |
| 23 | 39 | 4.4 | 26,800 | | 1 | 1 |
| 24 | 39 | 4.4 | 32,000 | | 1 | 1 |
| 25 | 39 | 4.4 | 32,800 | Holiday - No Count | | |
| 26 | 39 | 4.4 | 36,400 | | 2 | 2 |
| 27 | 39 | 4.4 | 37,500 | | 9 | 9 |
| 28 | 39 | 4.4 | 34,300 | | 1 | 1 |
| 29 | 39 | 4.9 | 30,000 | | 3 | 3 |
| 30 | 39 | 4.7 | 36,300 | | 3 | 3 |
| 31 | 39 | 4.8 | 38,000 | | 1 | 1 |
| TOTAL | | | | 6 | 280 | 286 |

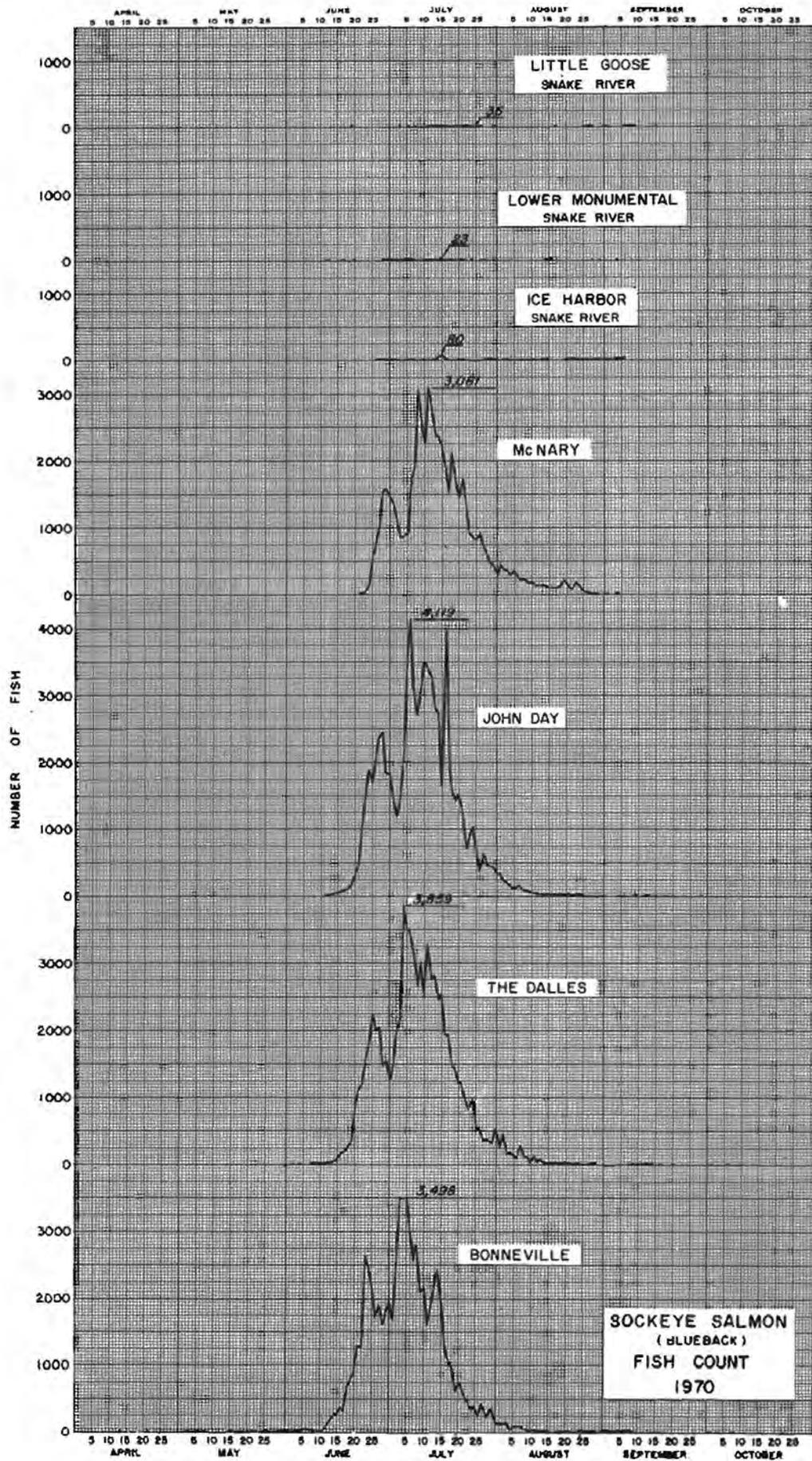
TABLE 85

Fish Facility Operation & Maintenance Costs - 1970

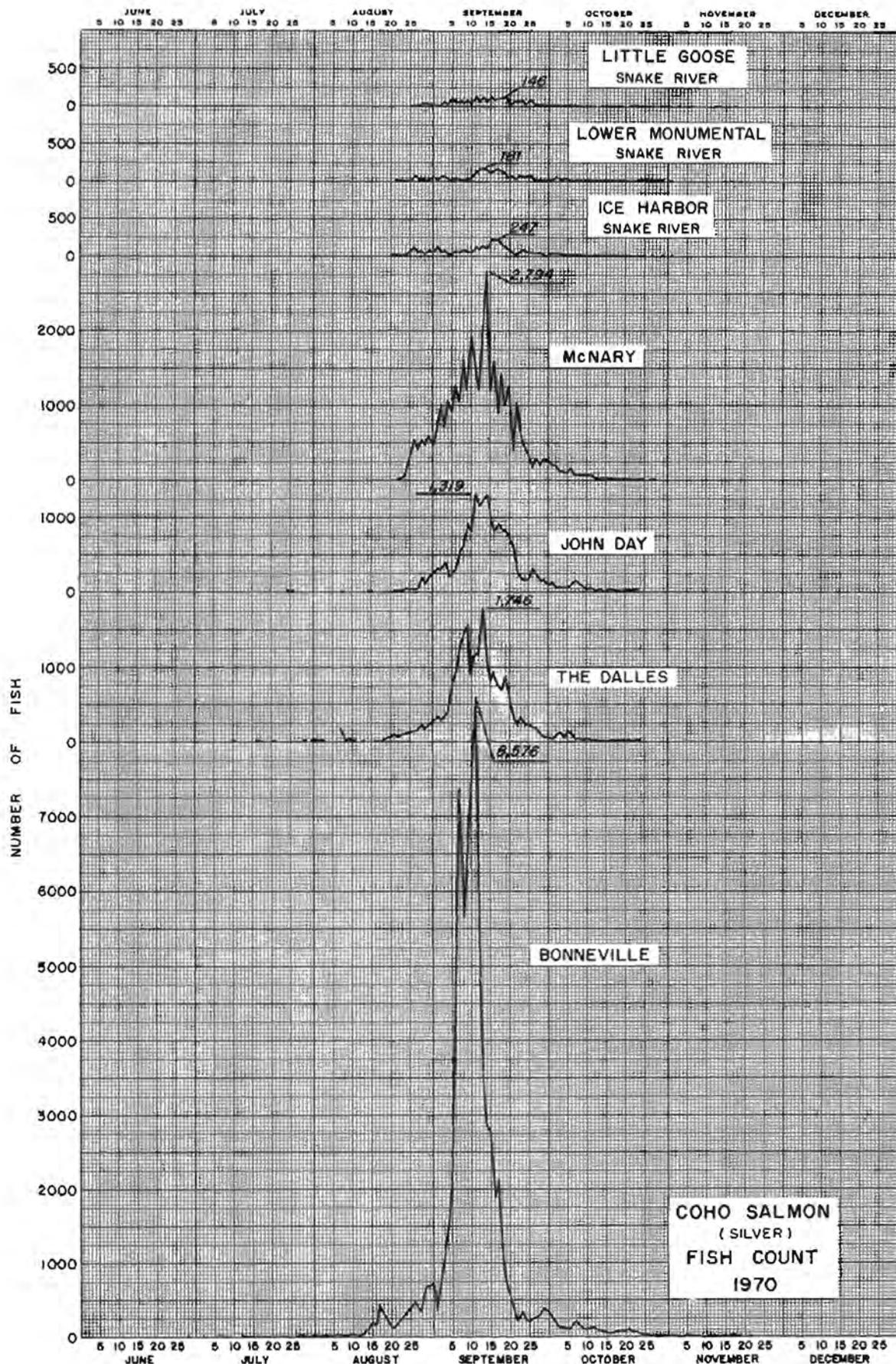
| Project | Routine Operations | Fish Counting | Maintenance | Total Operation and Maintenance |
|------------------|--------------------|---------------|---------------|---------------------------------|
| Bonneville | \$ 60,863 | \$ 24,514 | \$ 47,399 | \$132,776 |
| The Dalles | 28,982 | 21,498 | 33,855 | 84,335 |
| John Day | 62,125 | 19,084 | 45,058 | 126,267 |
| McNary | 97,012 | 17,988 | 40,712 | 155,712 |
| Ice Harbor | 52,942 | 20,058 | 25,661 | 98,661 |
| Lower Monumental | 30,226 | 20,774 | 12,518 | 63,518 |
| Little Goose | <u>27,235</u> | <u>11,496</u> | <u>10,197</u> | <u>48,928</u> |
| Total | \$359,385 | \$135,412 | \$215,400 | \$710,197 |



COLUMBIA AND SNAKE RIVER PROJECTS
 U.S. ARMY ENGINEER DISTRICTS
 PORTLAND AND WALLA WALLA



SOCKEYE SALMON
(BLUEBACK)
FISH COUNT
1970



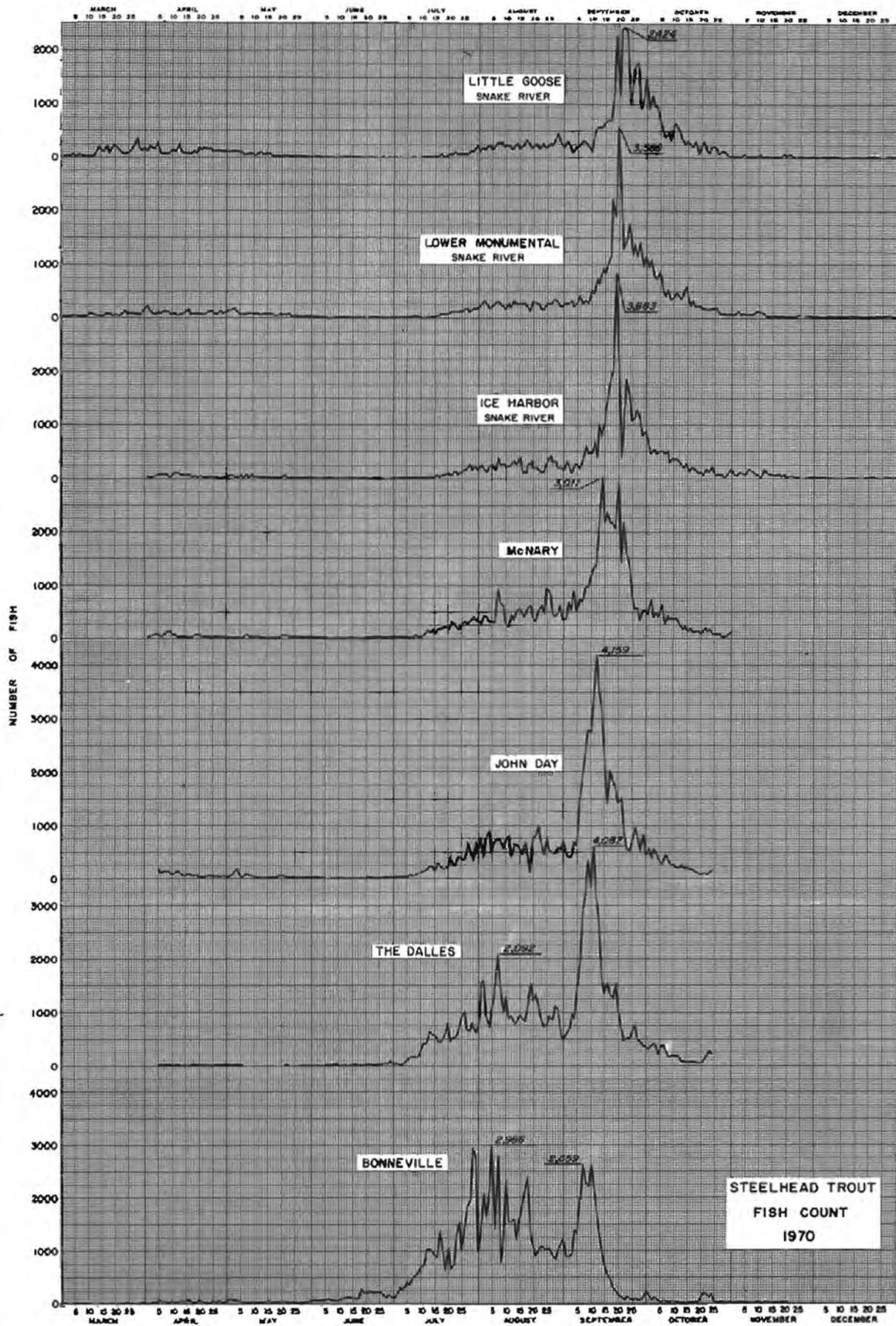
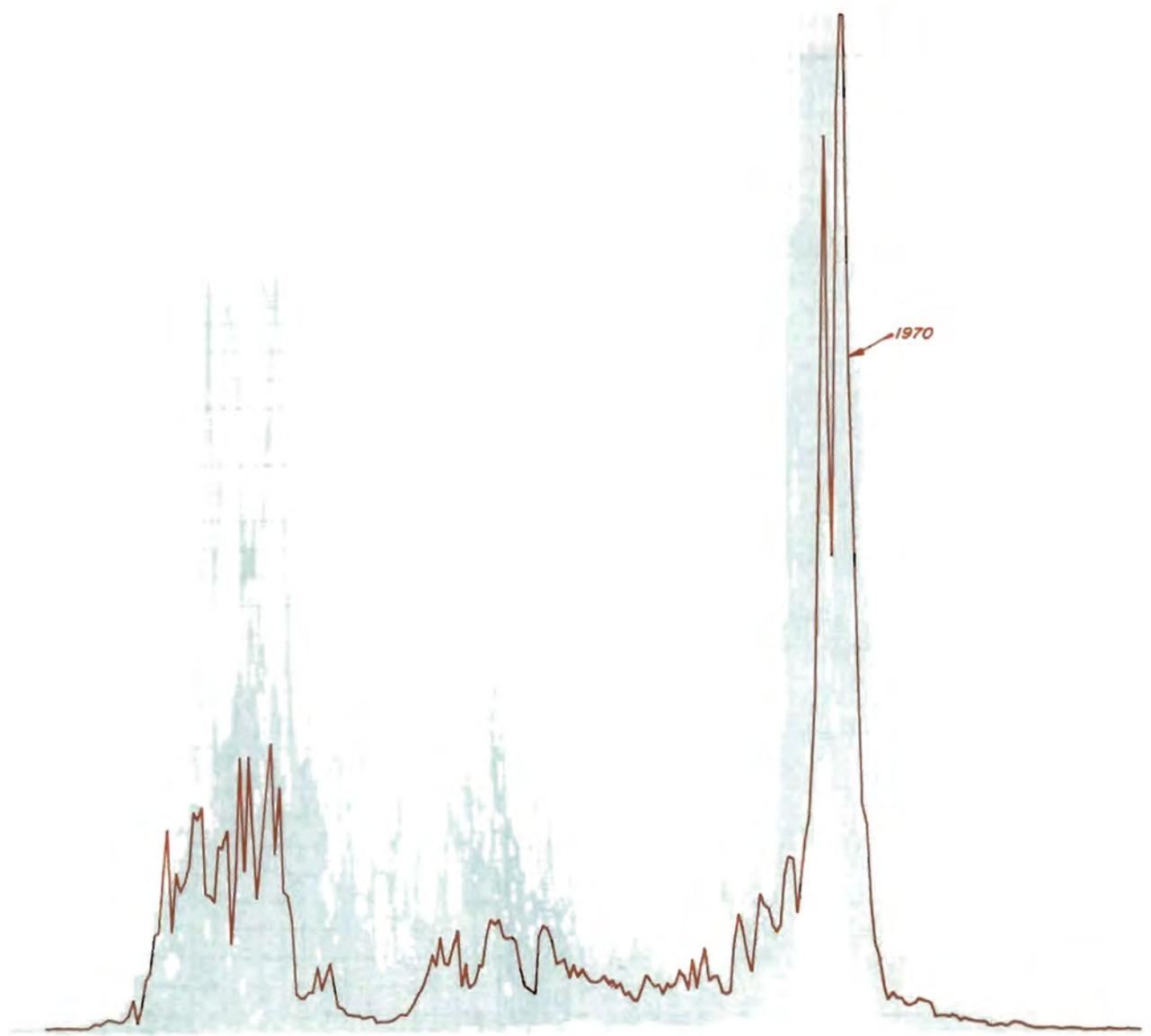
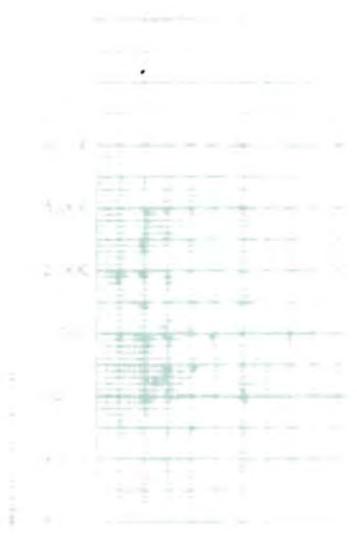
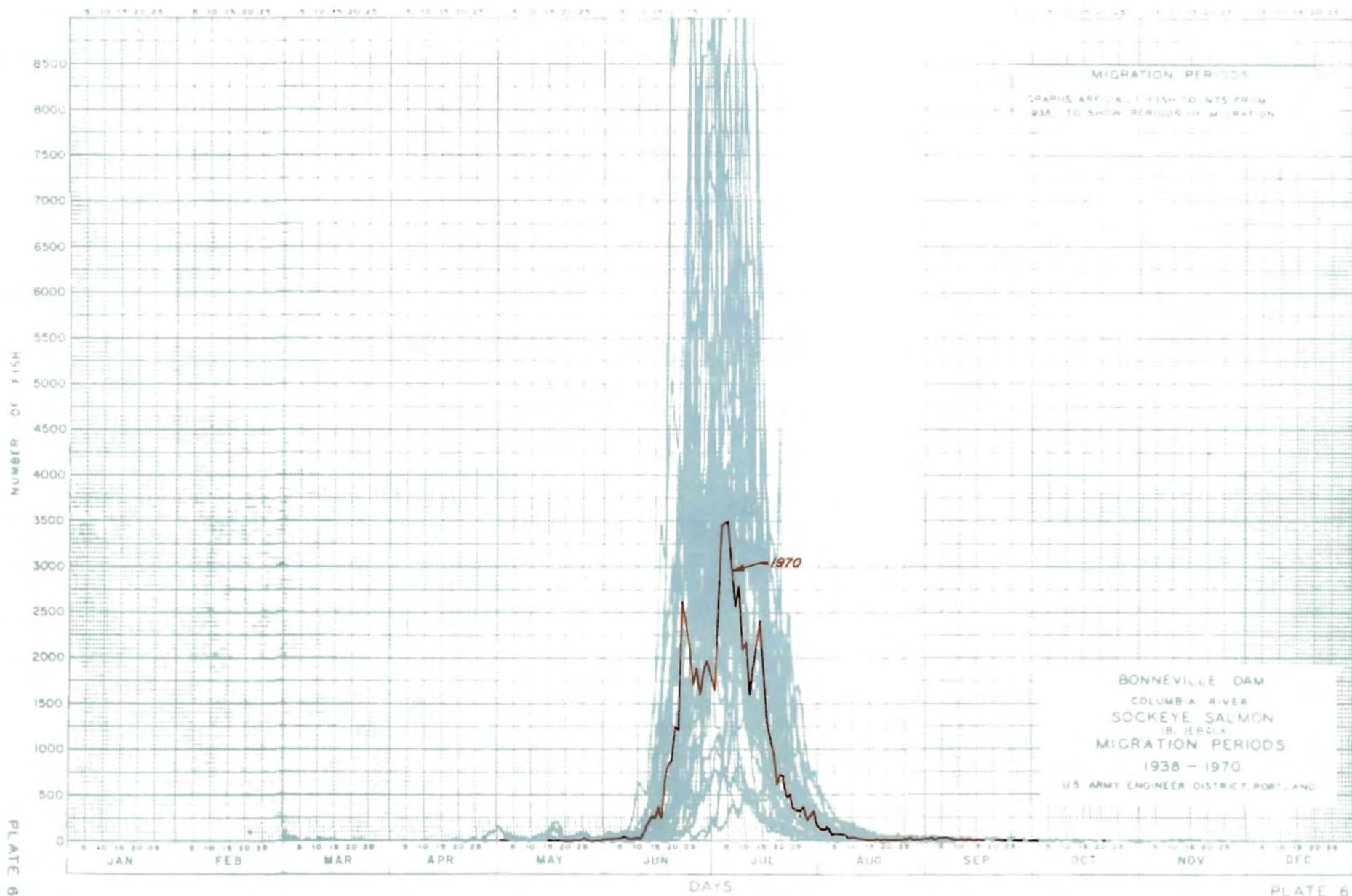


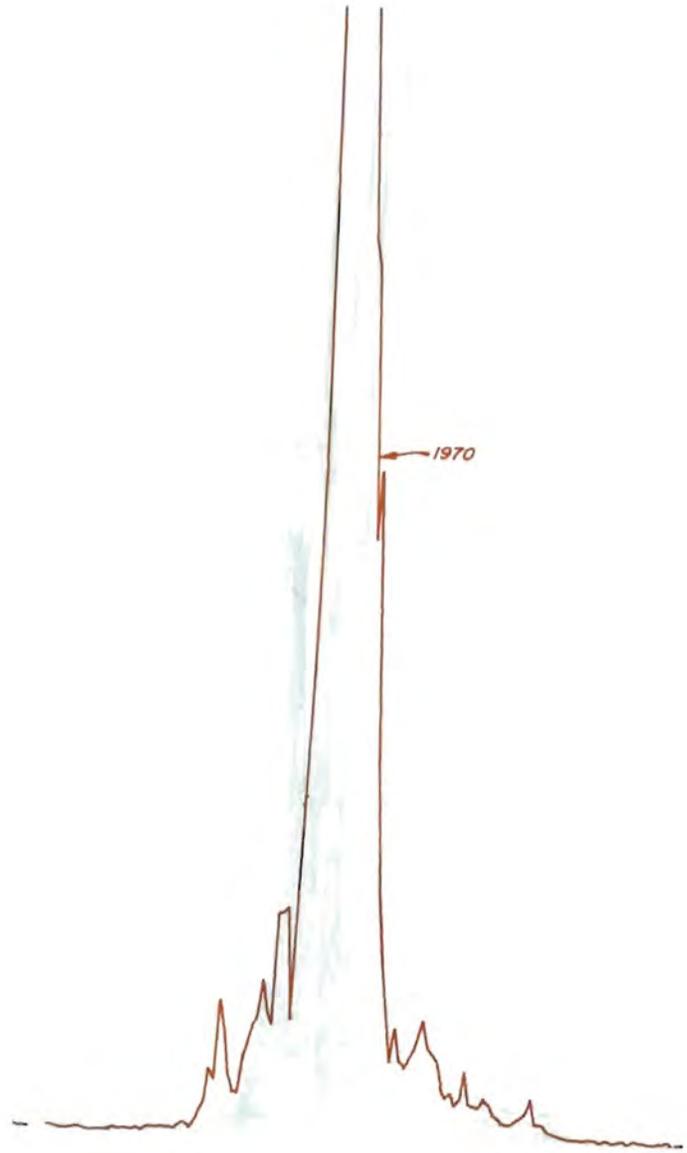
PLATE 4

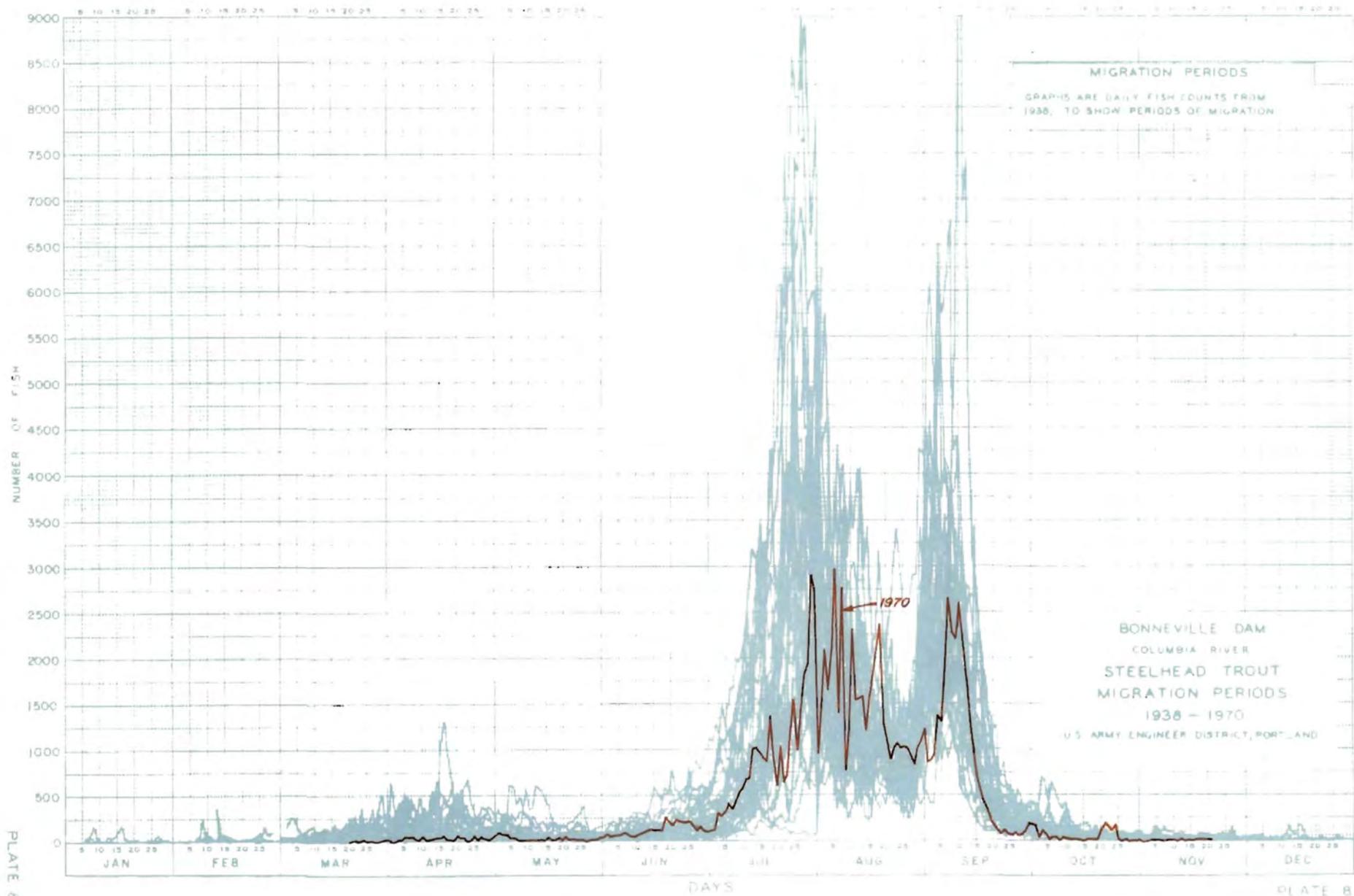
COLUMBIA AND SNAKE RIVER PROJECTS
 U.S. ARMY ENGINEER DISTRICTS
 PORTLAND AND WALLA WALLA



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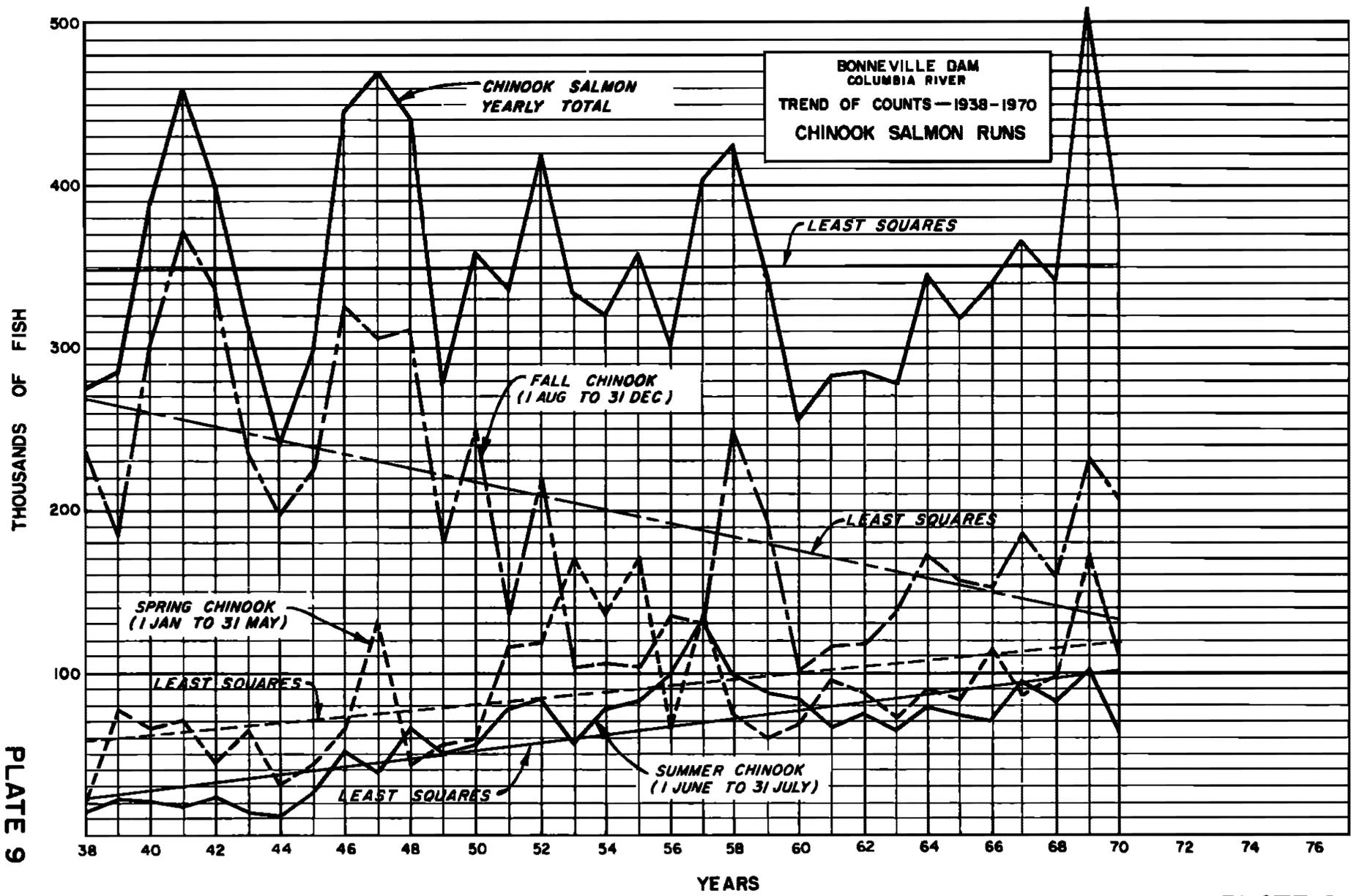
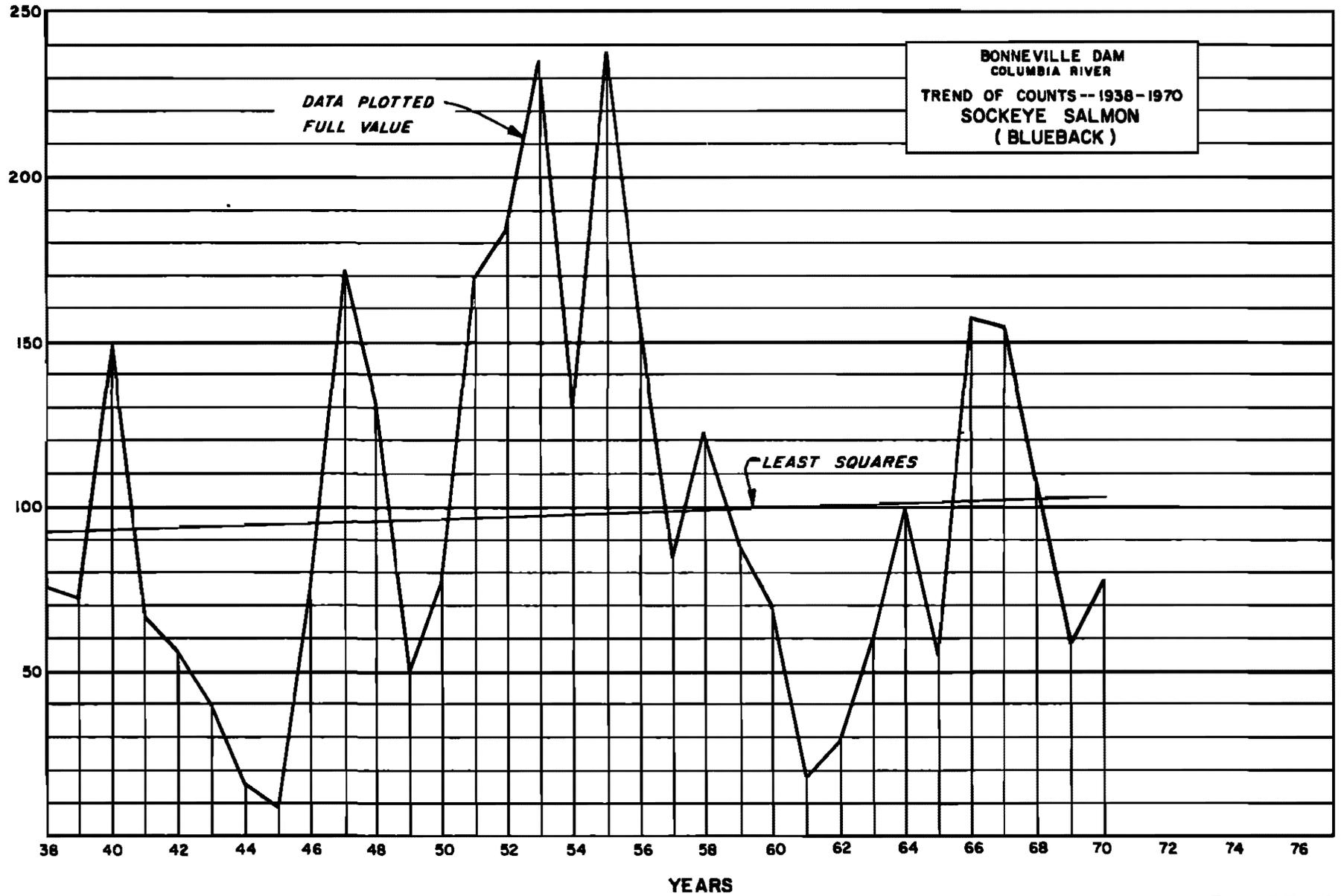


PLATE 9

PLATE 9



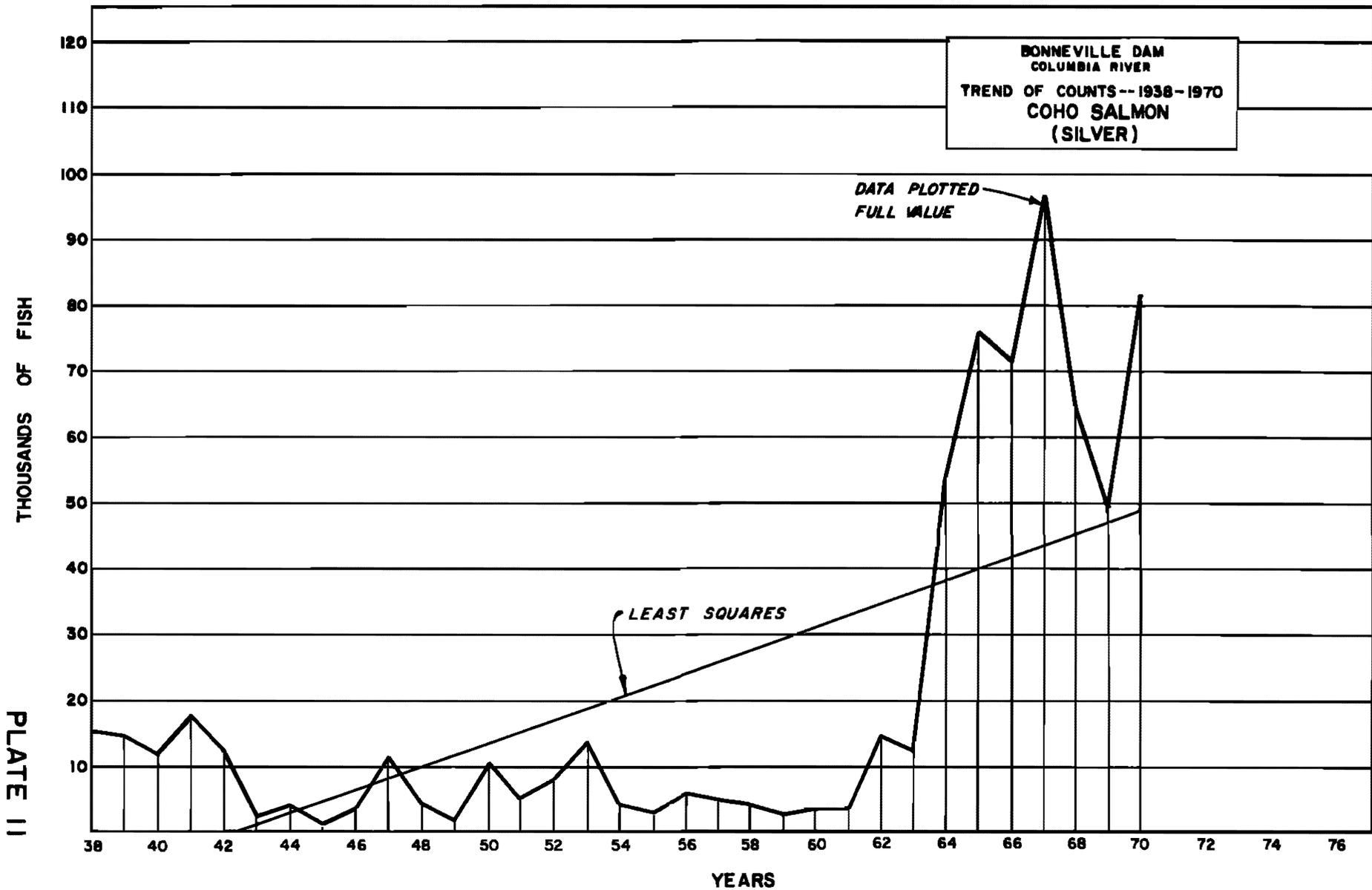
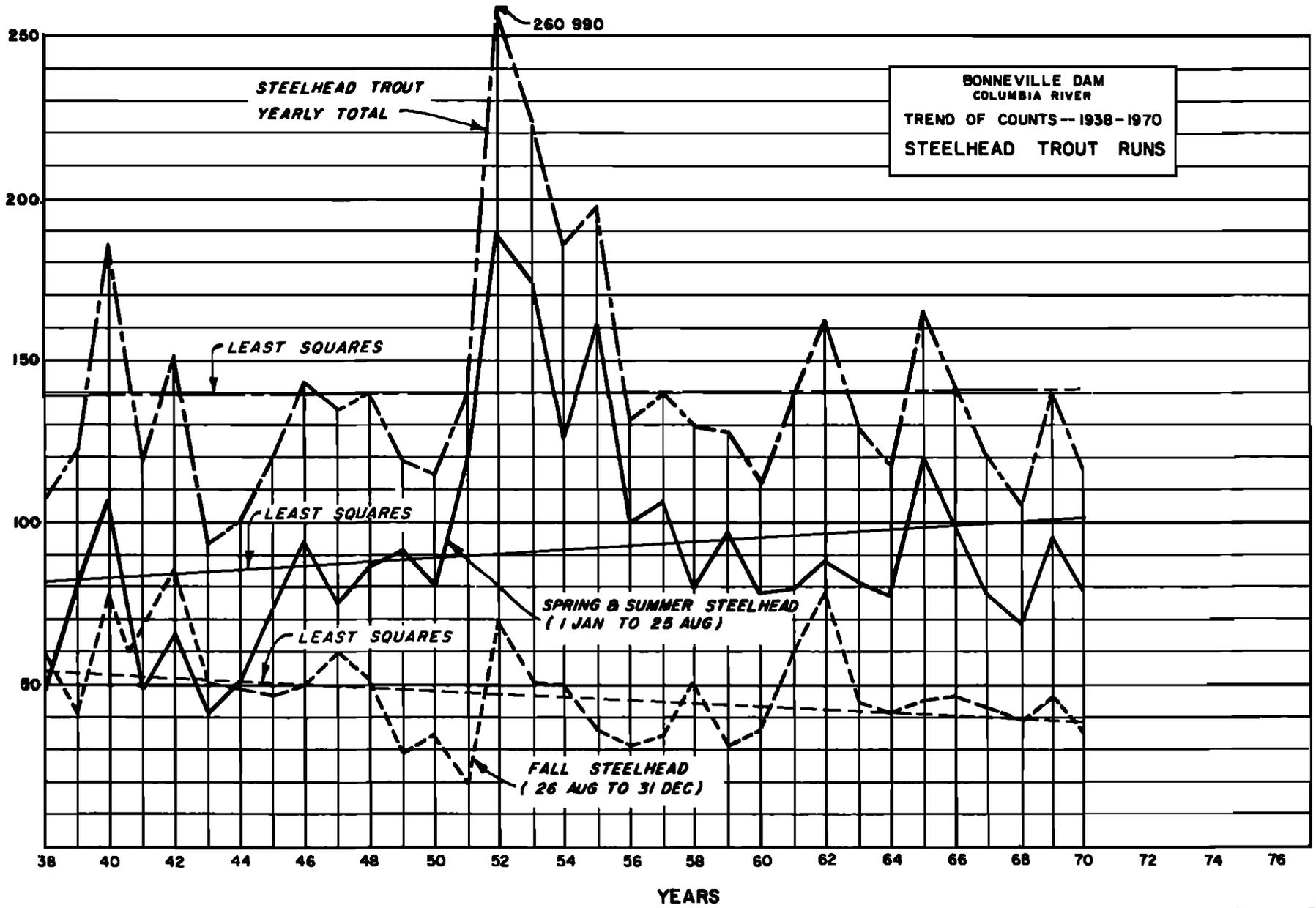


PLATE II

PLATE II



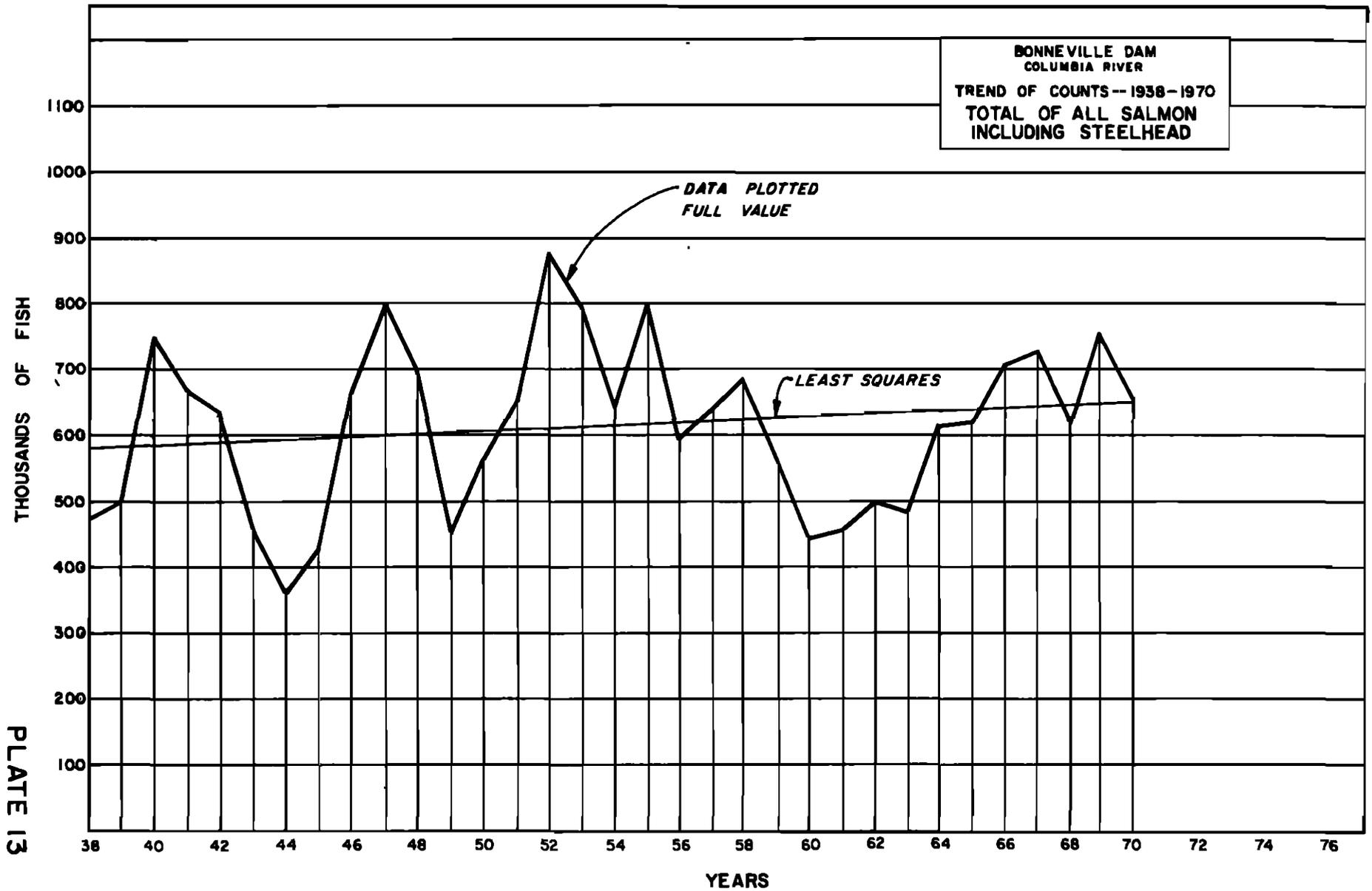
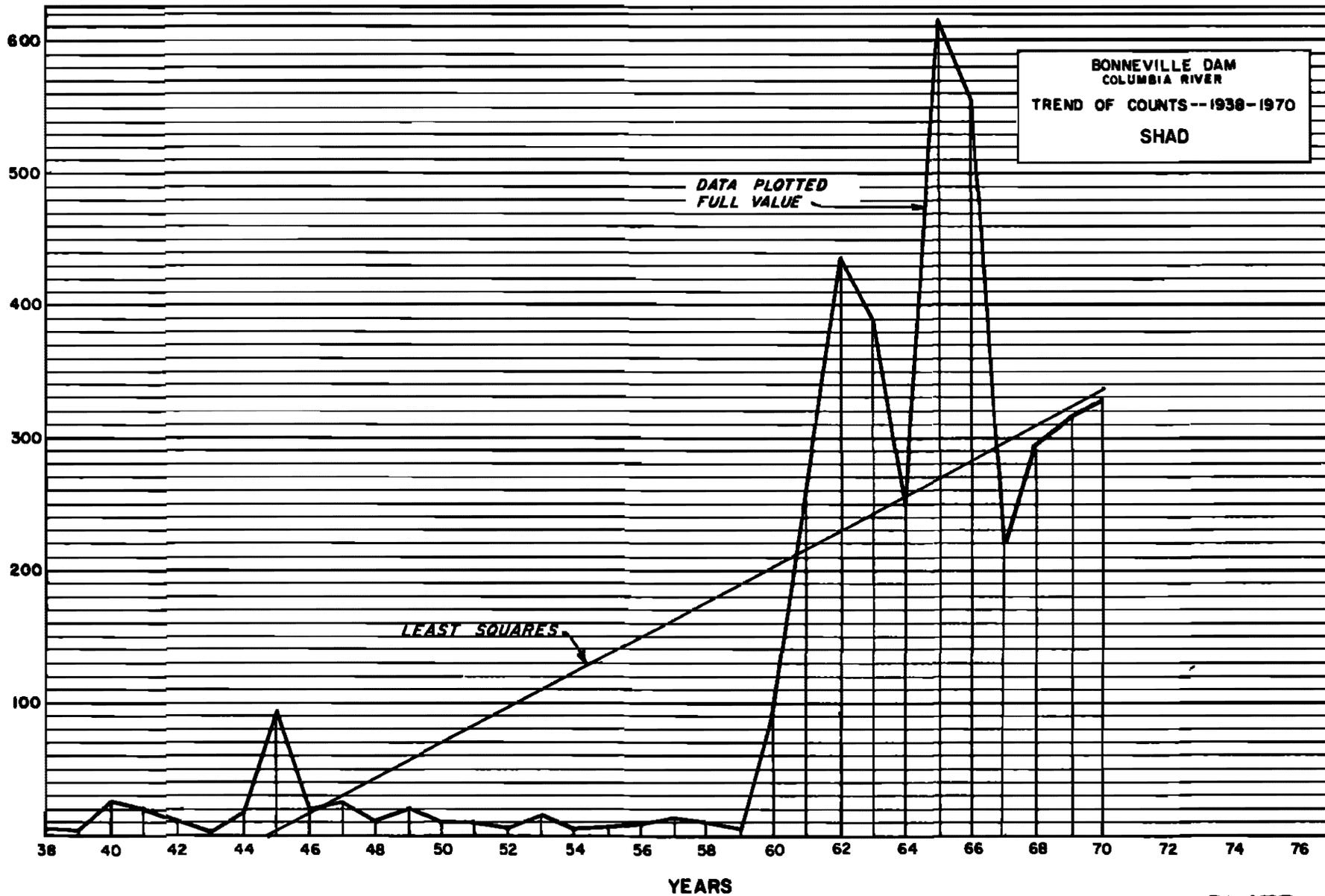
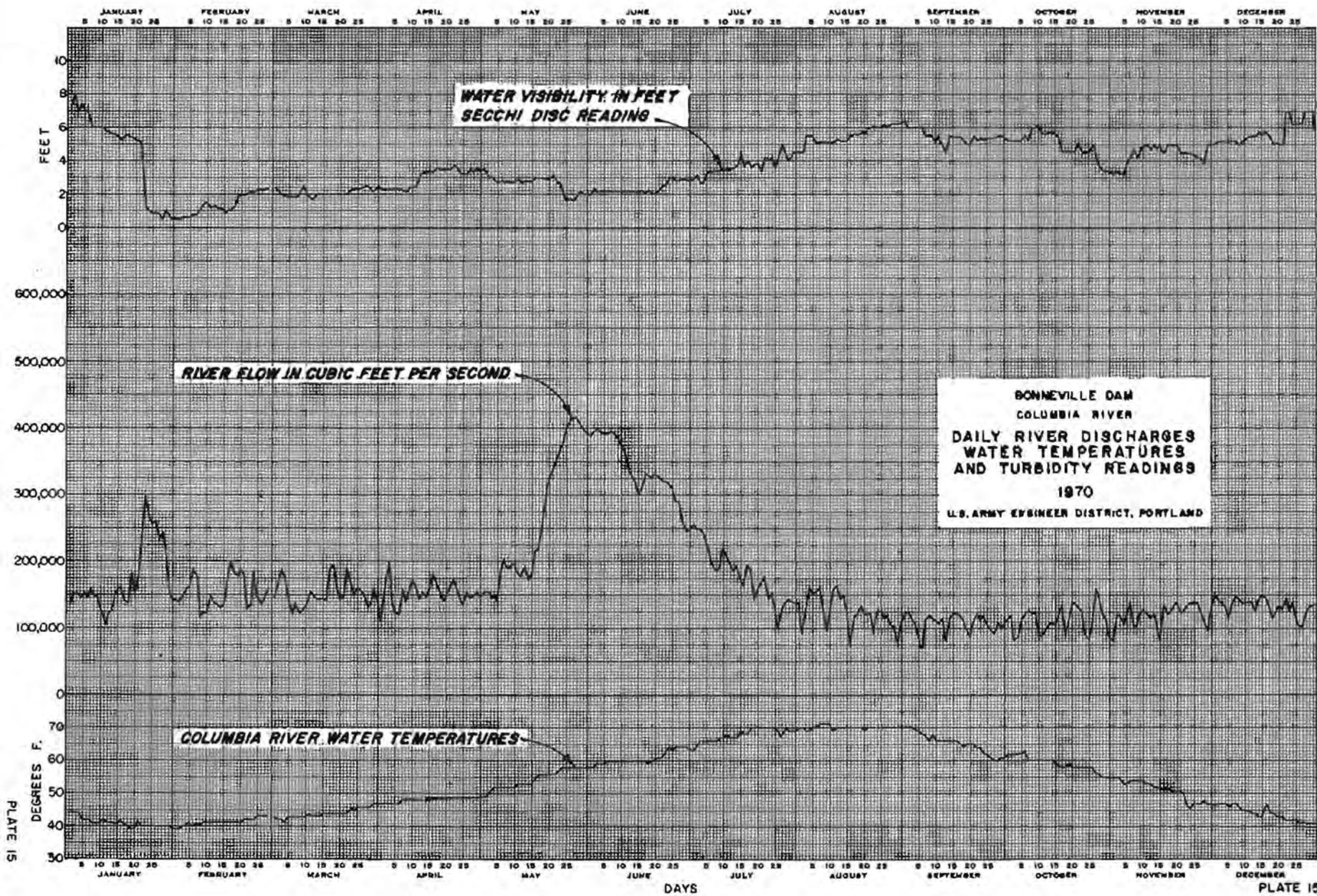
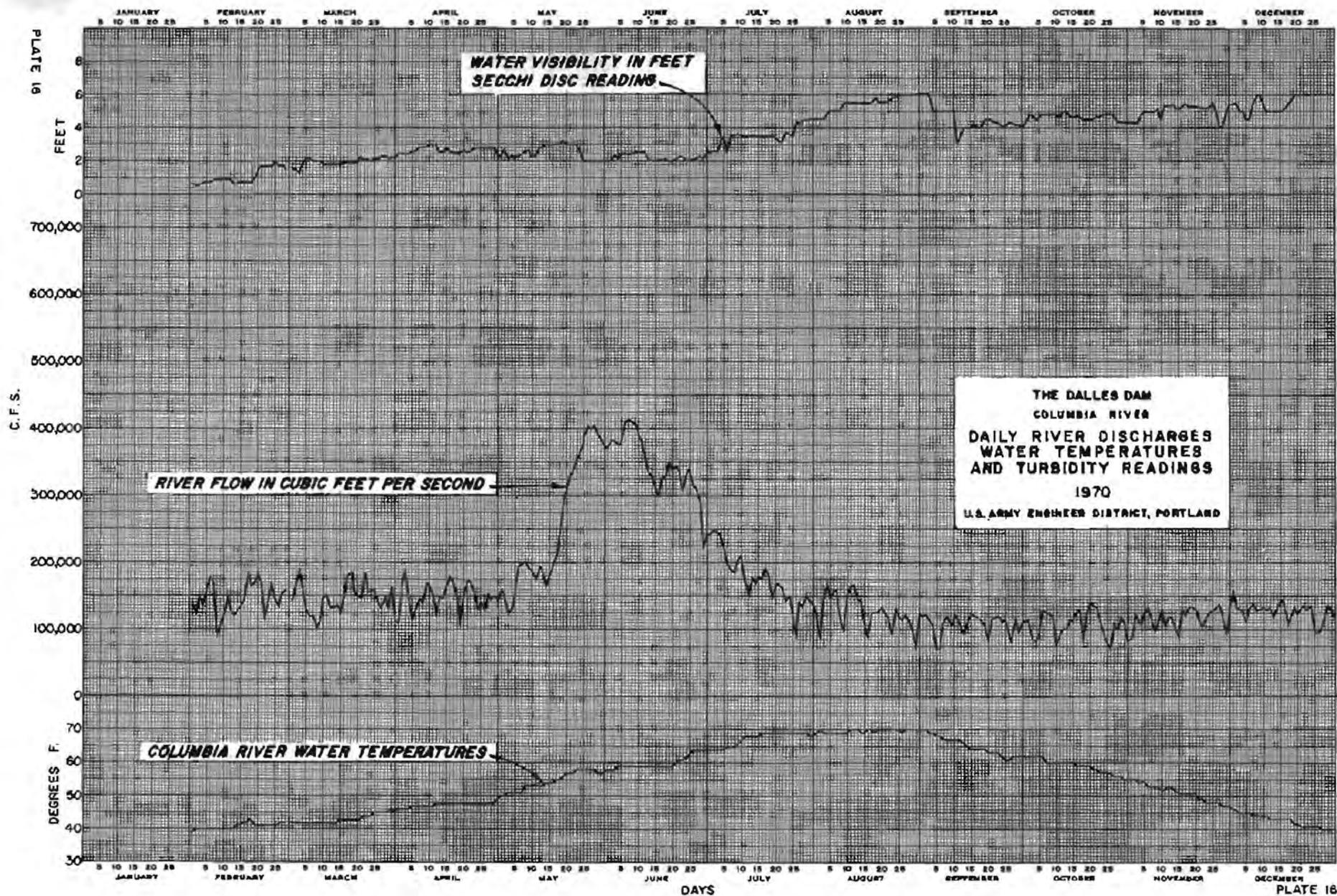


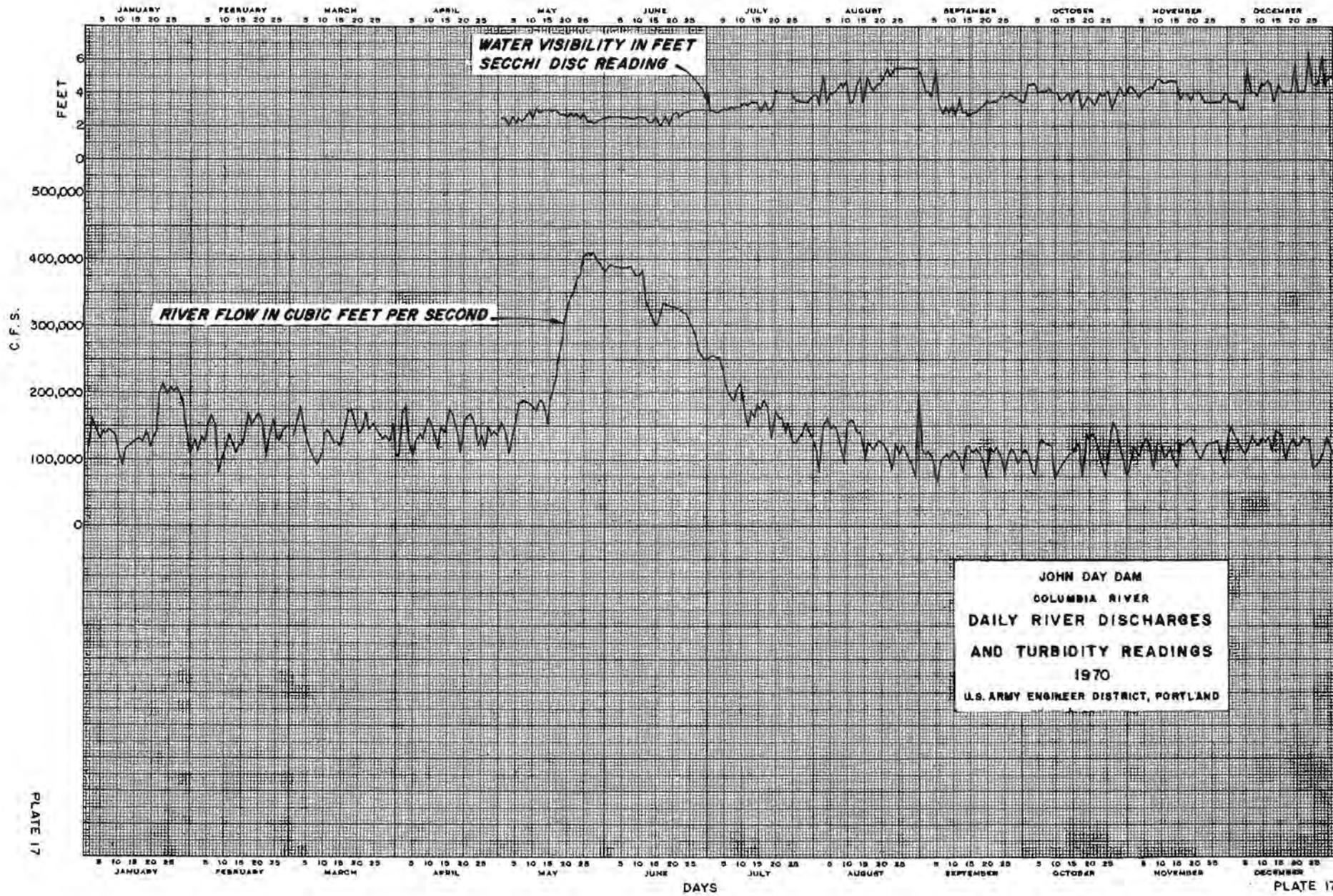
PLATE 13

PLATE 13



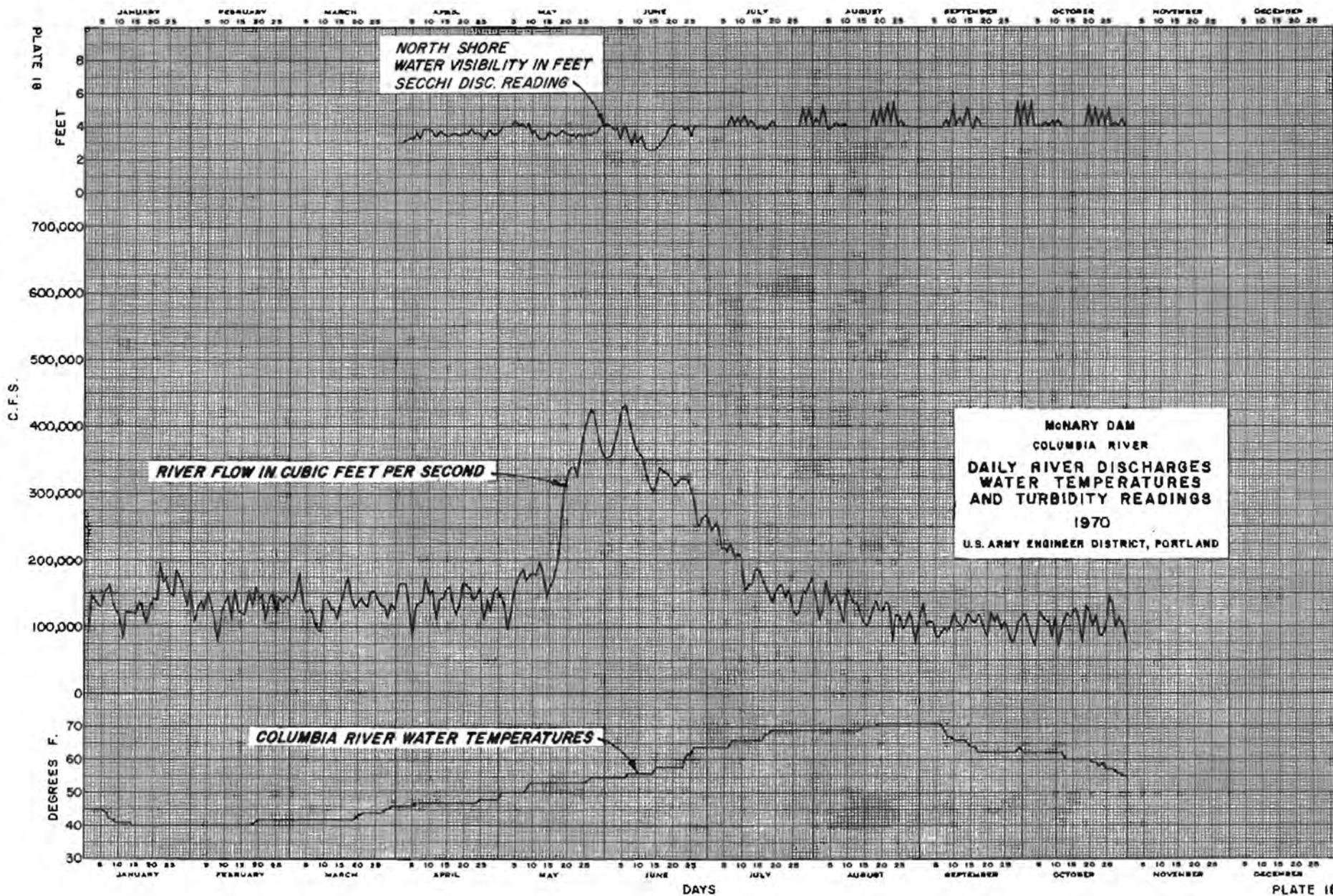






DAYS

PLATE 17



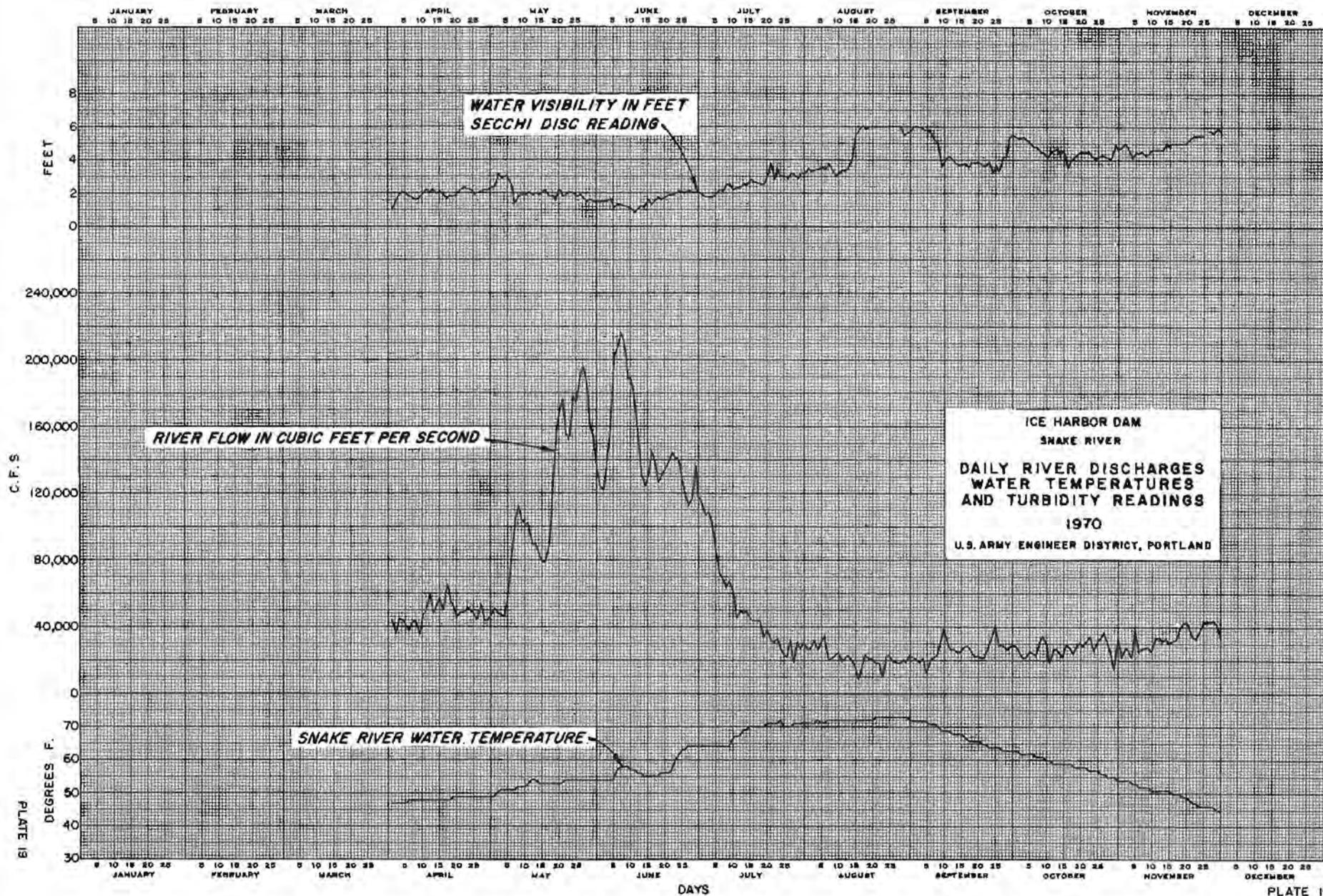
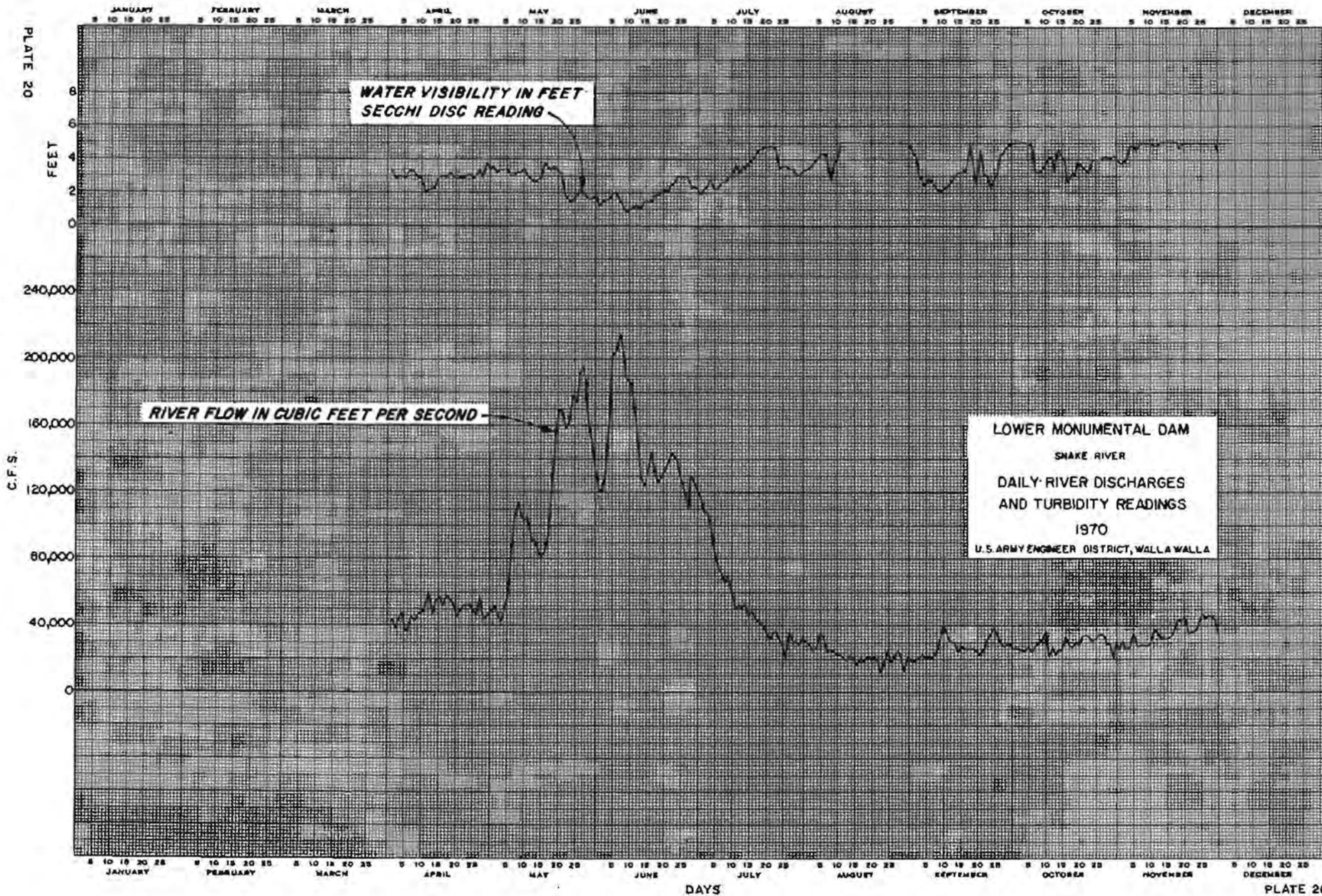


PLATE 19

PLATE 19

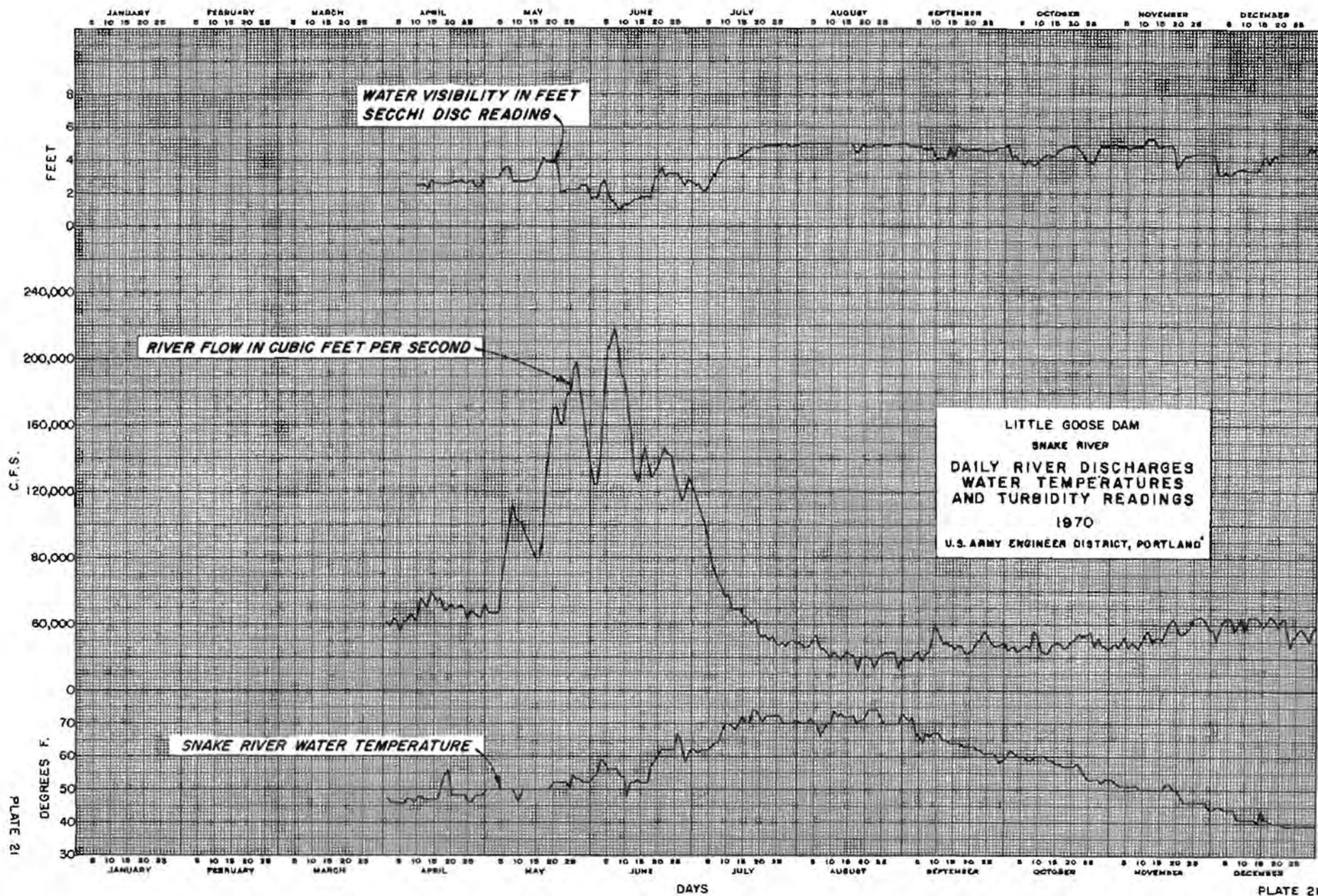
PLATE 20

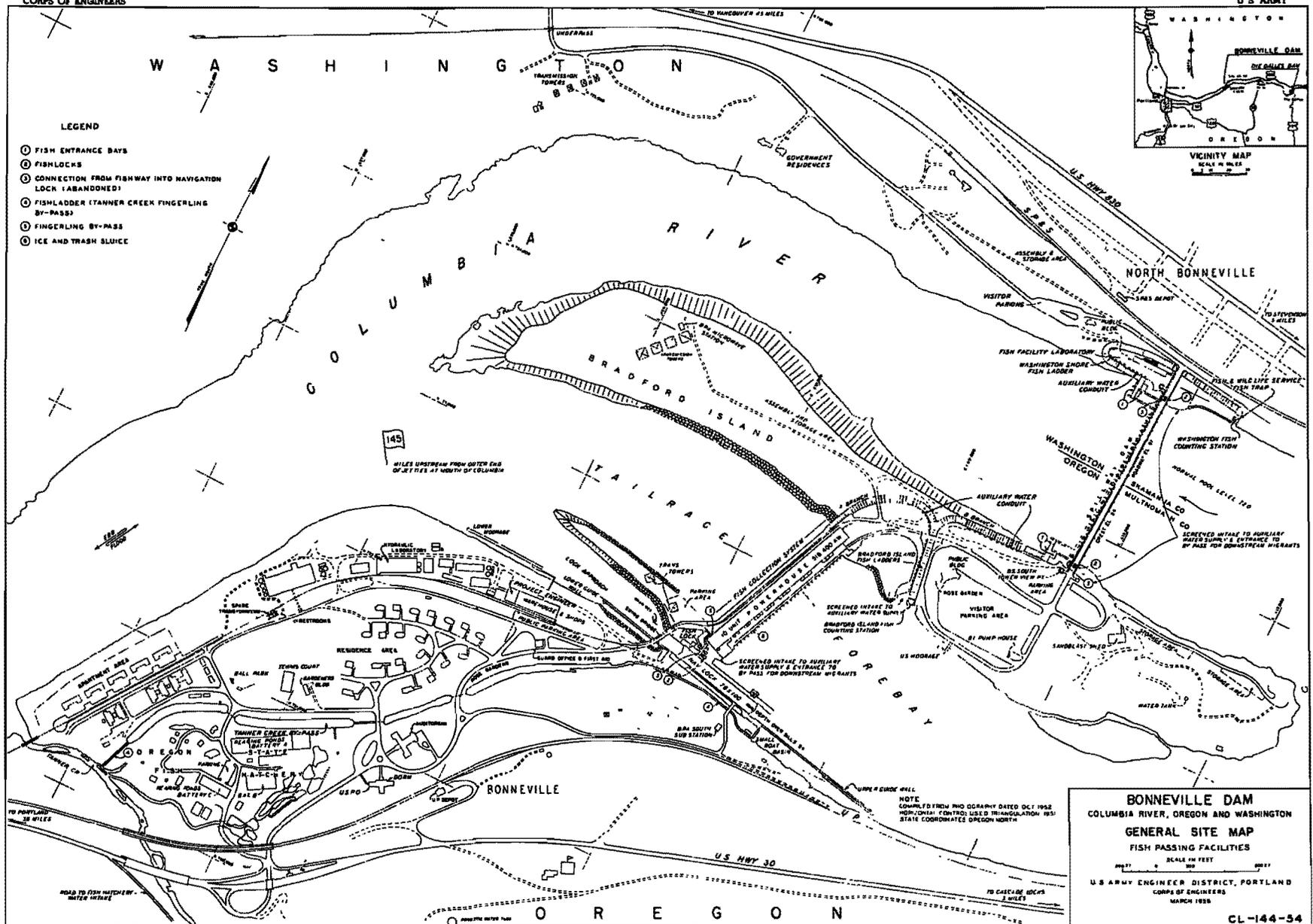


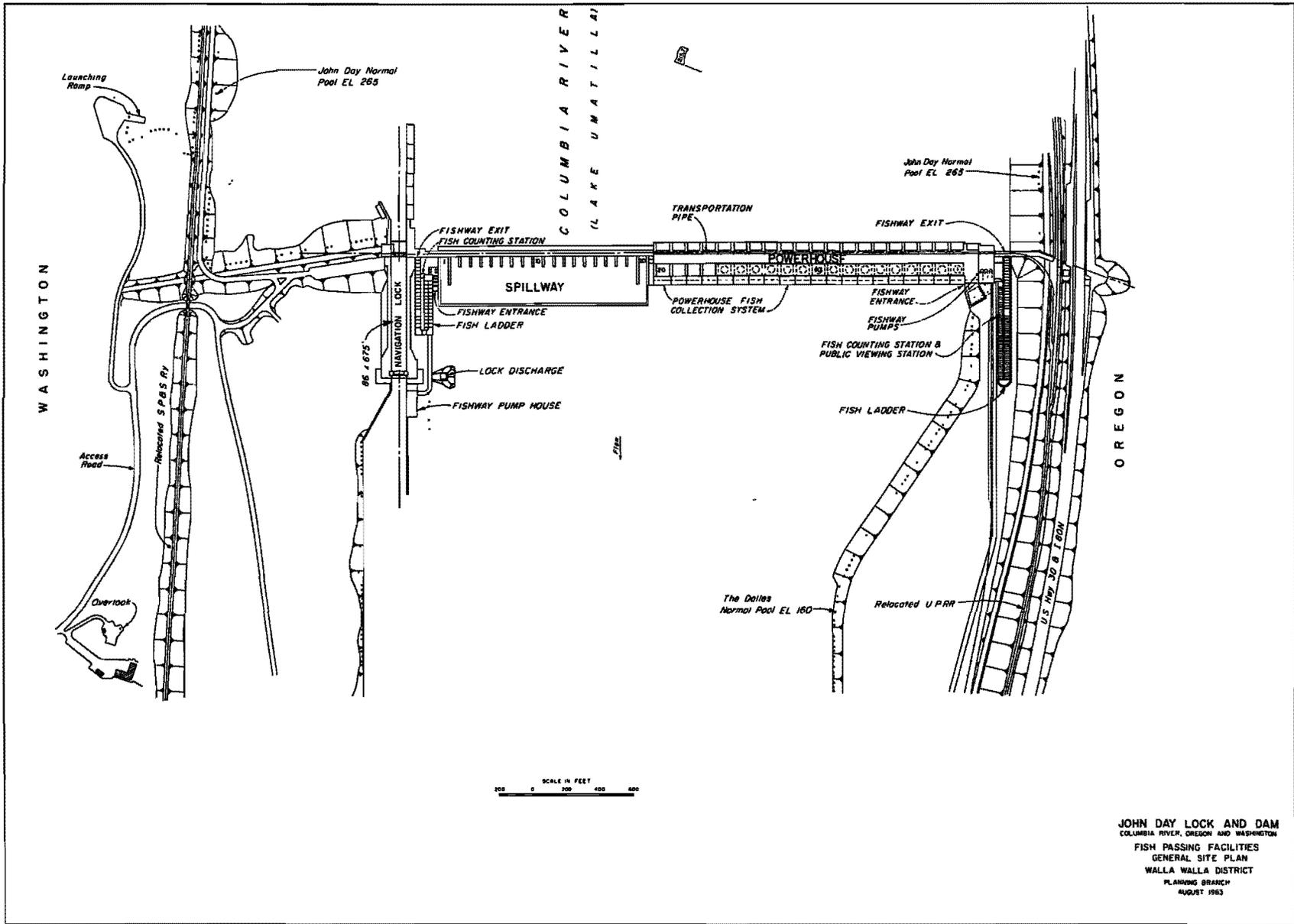
LOWER MONUMENTAL DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
AND TURBIDITY READINGS
1970
U.S. ARMY ENGINEER DISTRICT, WALLA WALLA

DAYS

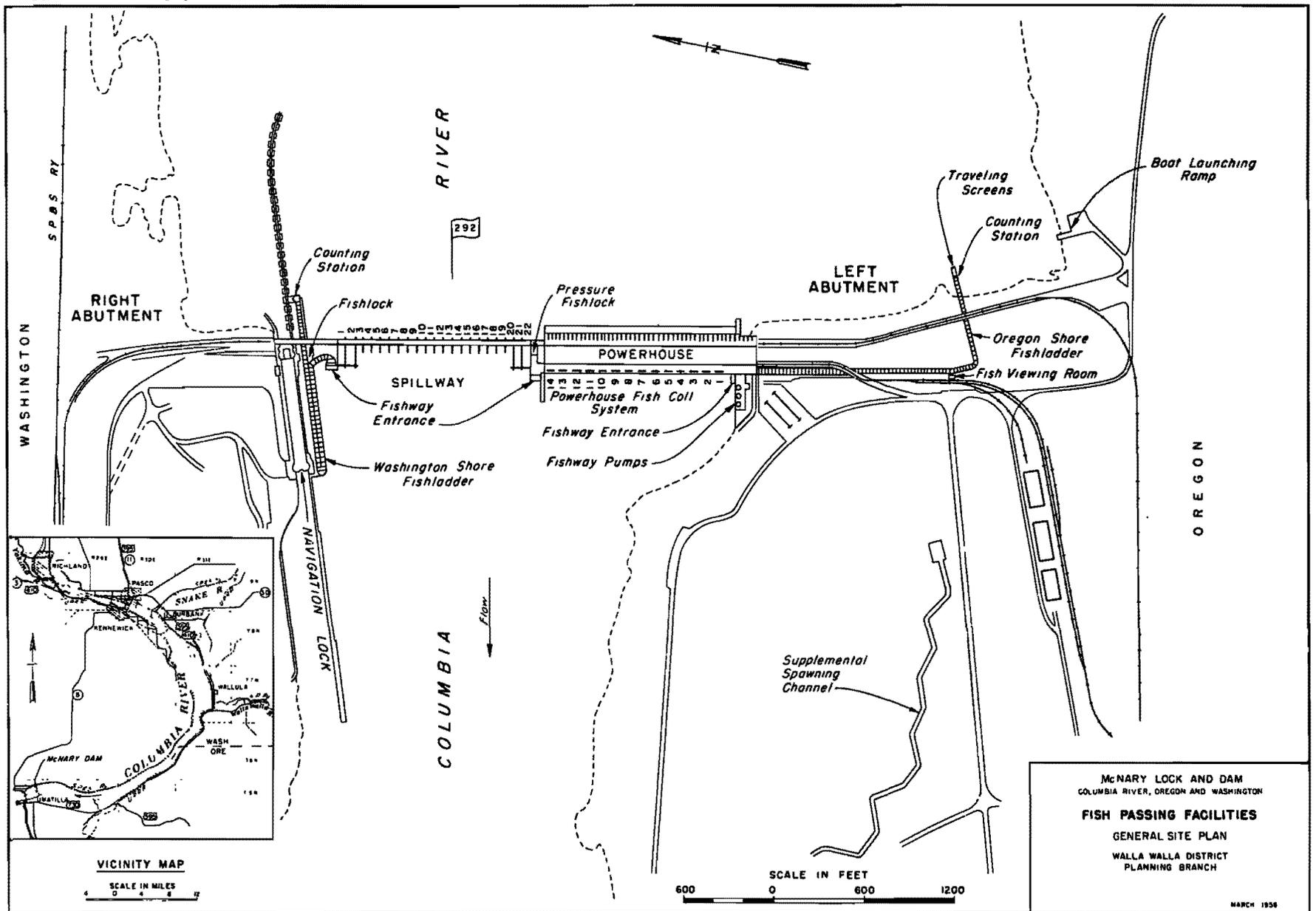
PLATE 20

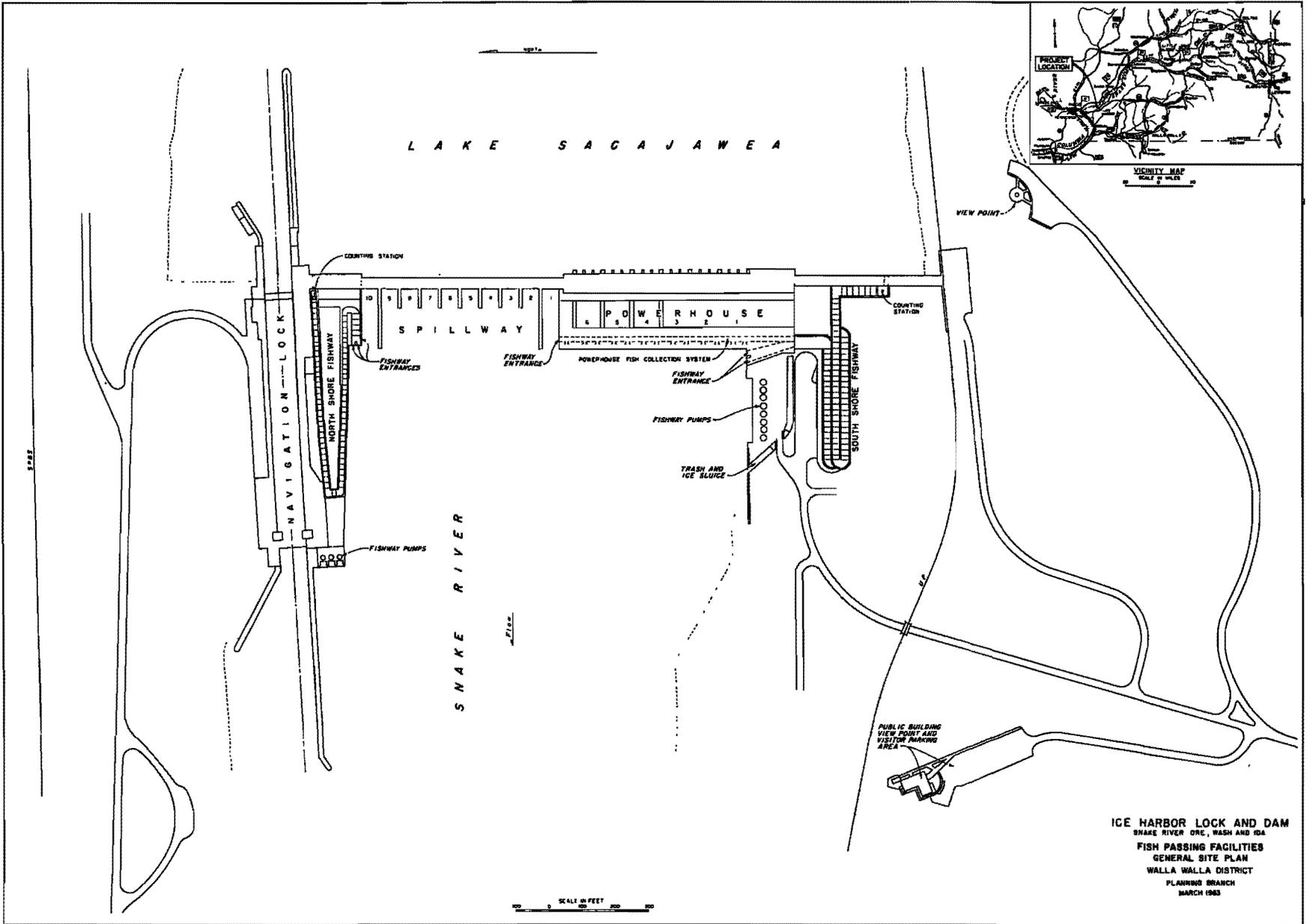


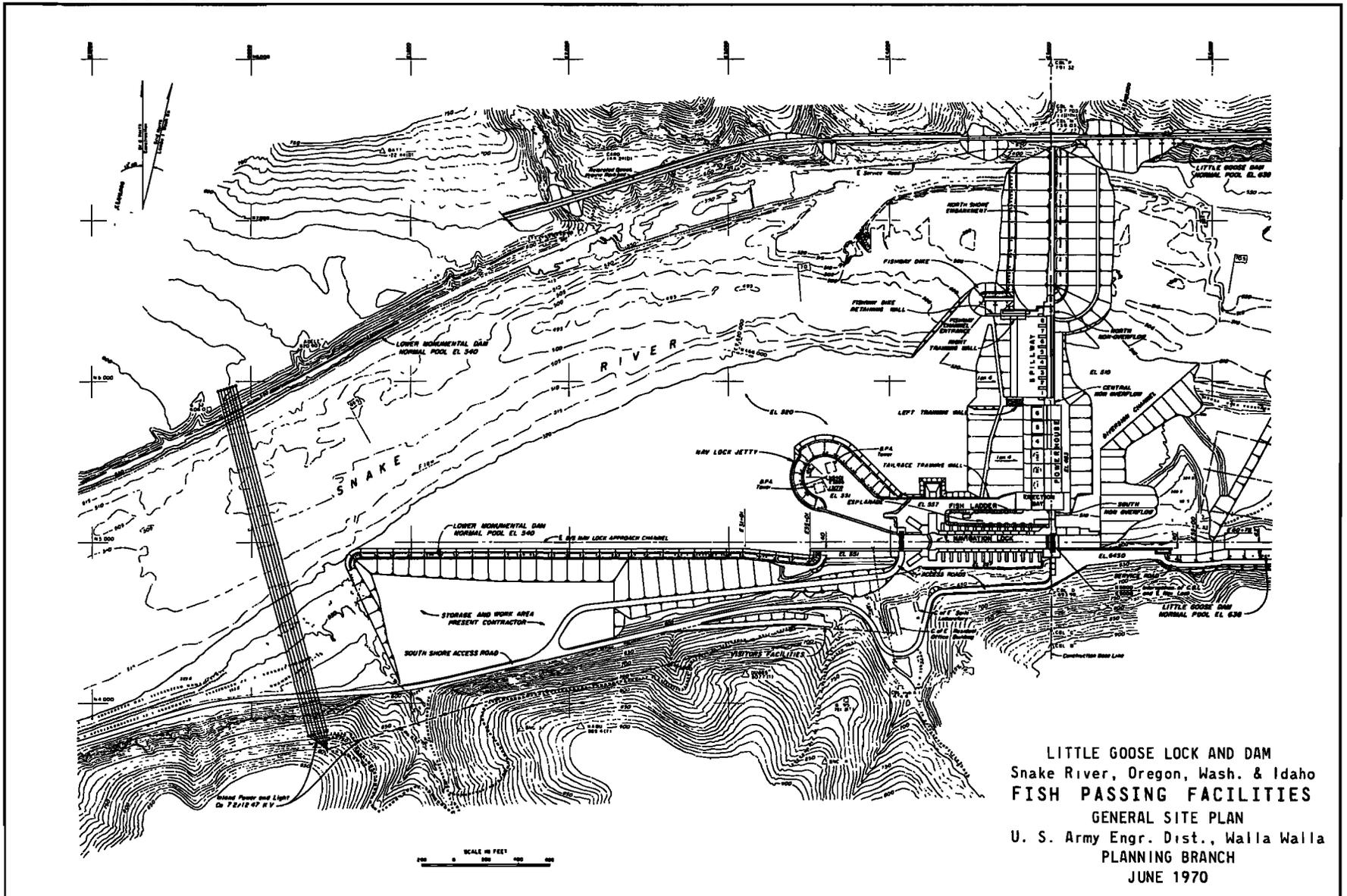




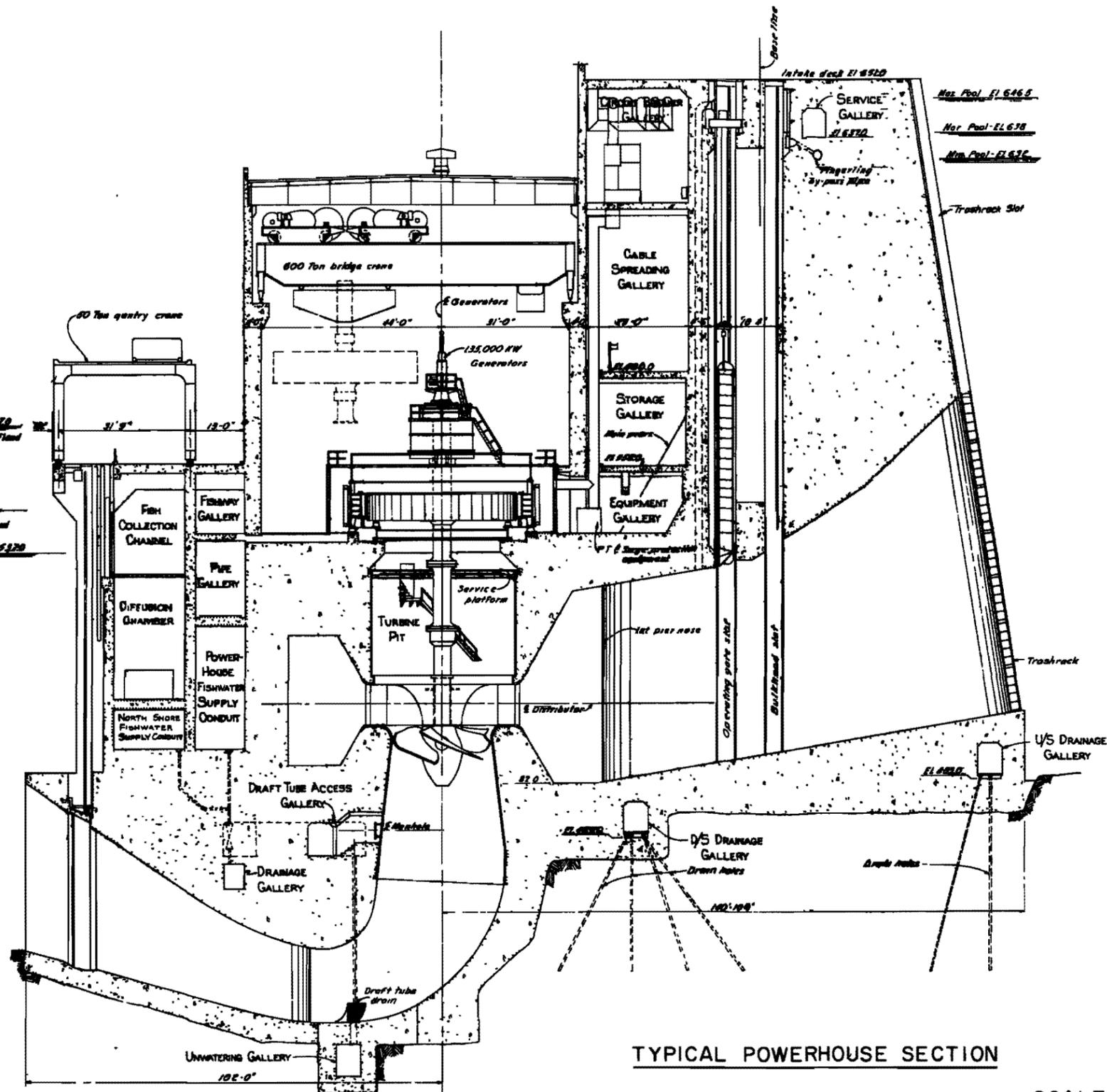
JOHN DAY LOCK AND DAM
 COLUMBIA RIVER, OREGON AND WASHINGTON
 FISH PASSING FACILITIES
 GENERAL SITE PLAN
 WALLA WALLA DISTRICT
 PLANNING BRANCH
 AUGUST 1963



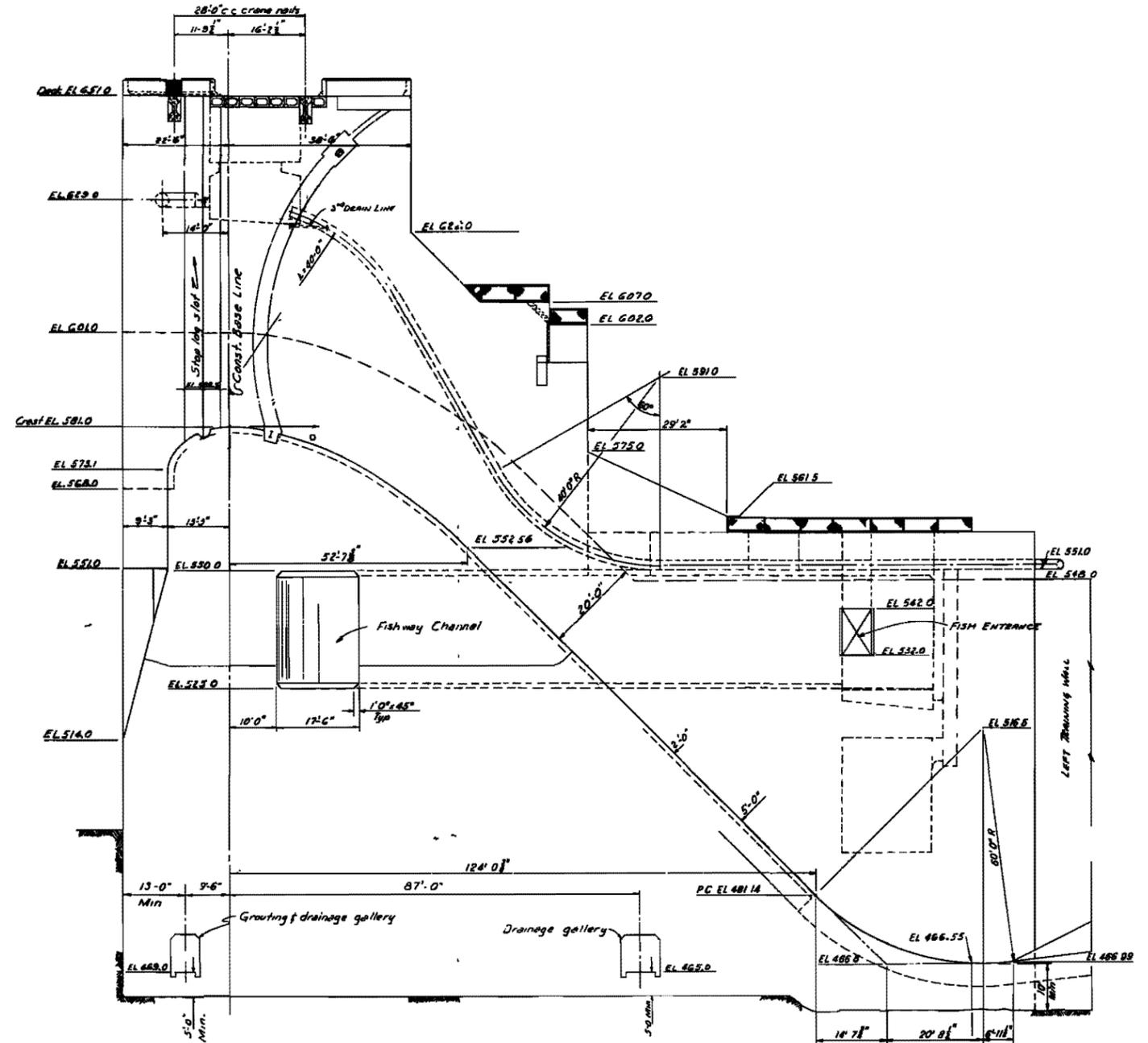




LITTLE GOOSE LOCK AND DAM
 Snake River, Oregon, Wash. & Idaho
FISH PASSING FACILITIES
 GENERAL SITE PLAN
 U. S. Army Engr. Dist., Walla Walla
 PLANNING BRANCH
 JUNE 1970



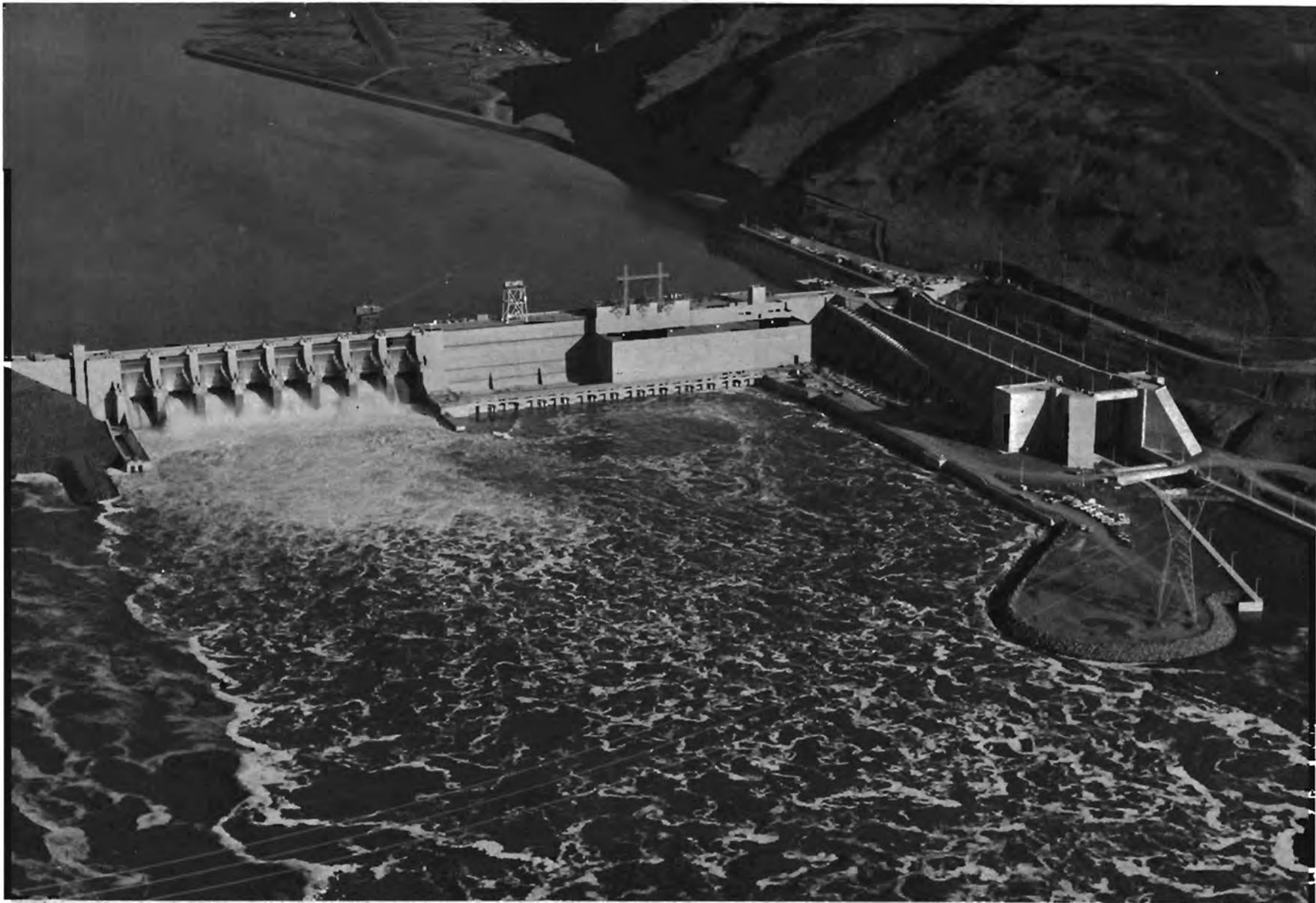
TYPICAL POWERHOUSE SECTION



TYPICAL SPILLWAY SECTION

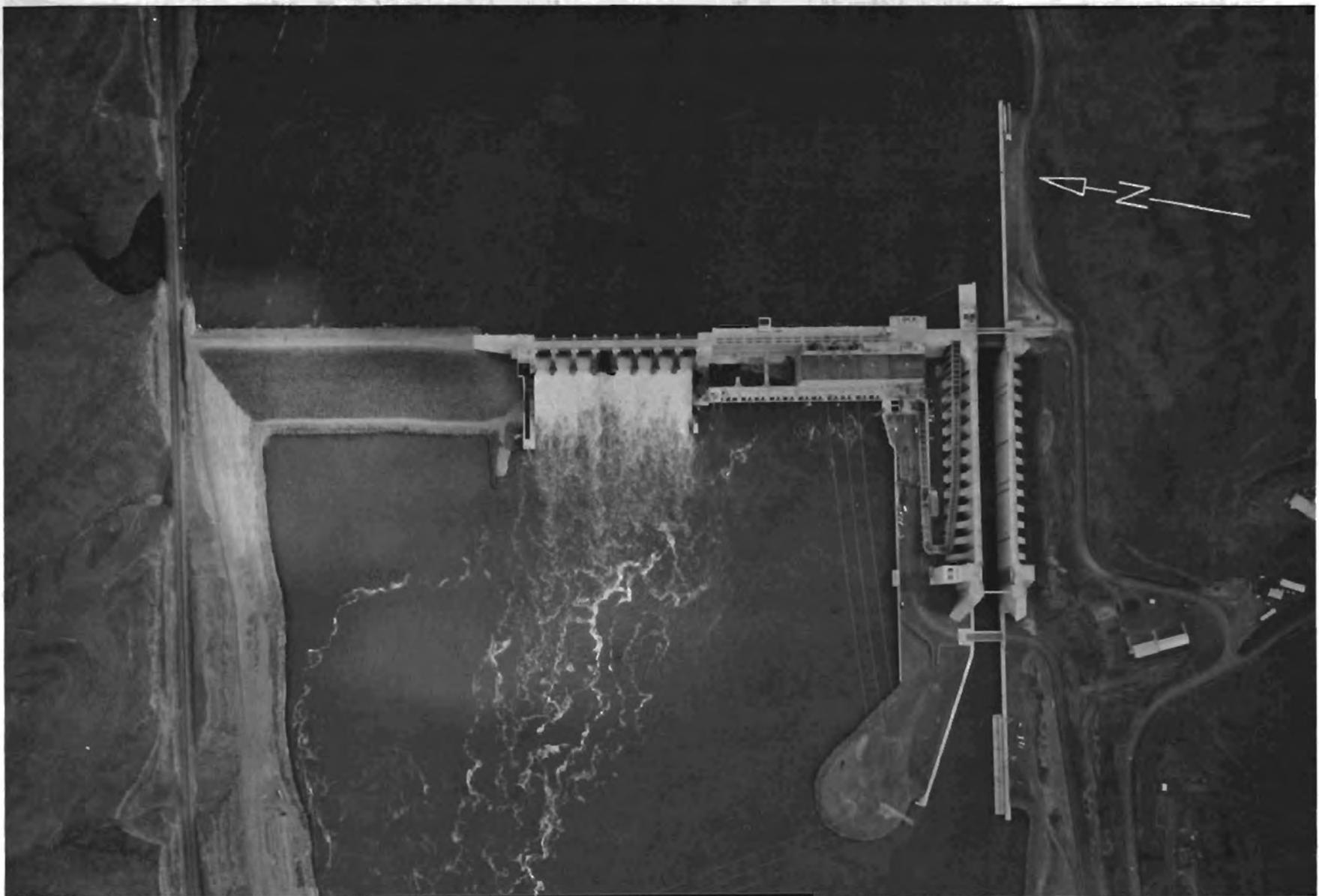


LITTLE GOOSE LOCK AND DAM
 Snake River, Oregon, Washington and Idaho
 FISH PASSING FACILITIES
 TYPICAL SECTIONS - SPILLWAY & POWERHOUSE
 U. S. Army Engineer District, Walla Walla
 PLANNING BRANCH
 JUNE 1970



LITTLE GOOSE DAM

Photo 1-LG Aerial View of Little Goose Dam. March 1970



LITTLE GOOSE DAM

Photo 2-LG Aerial View of Little Goose Dam. March 4, 1971