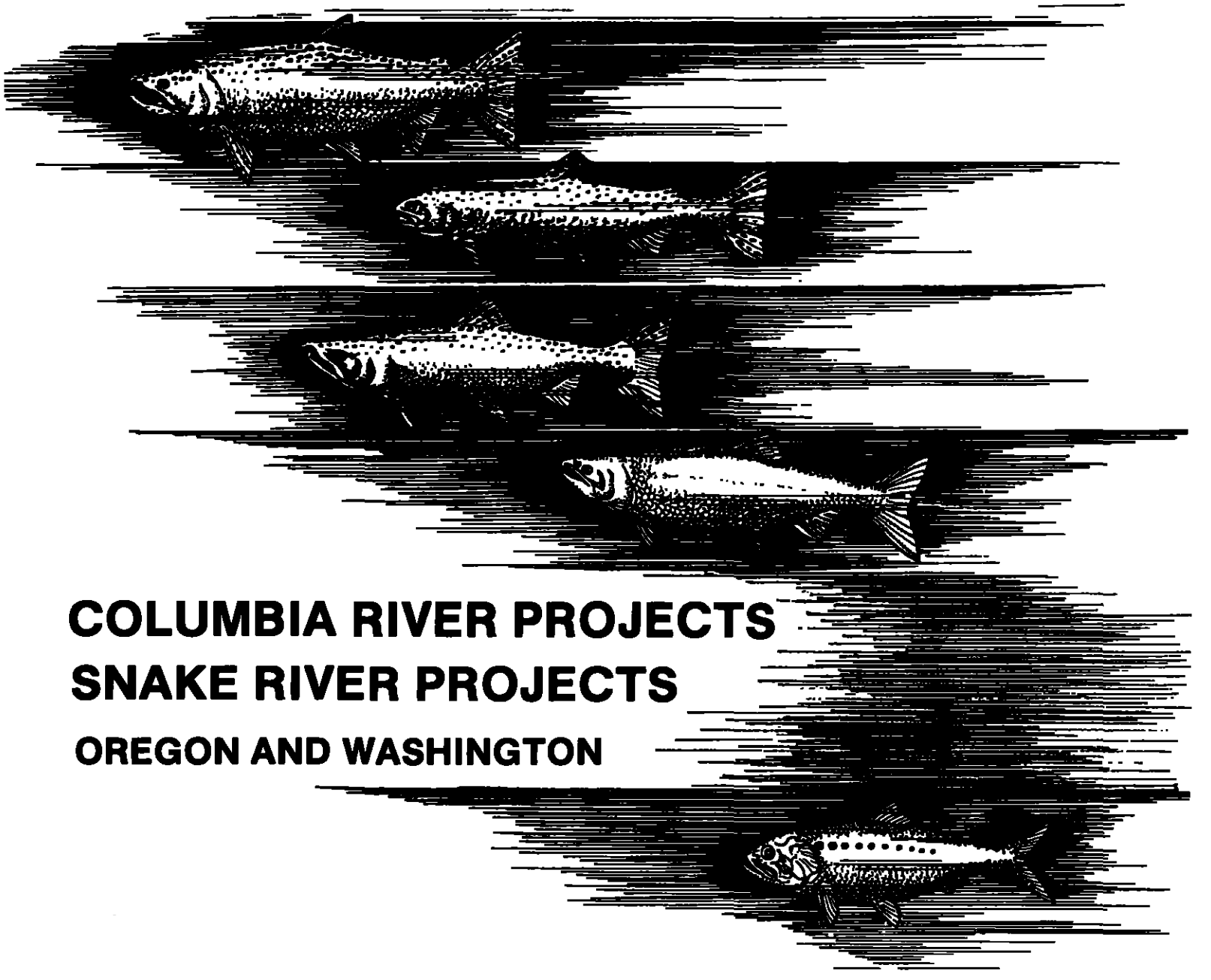
US Army Corps
of Engineers

Portland & Walla Walla Districts

ANNUAL FISH PASSAGE REPORT- 1984



COLUMBIA RIVER PROJECTS
SNAKE RIVER PROJECTS
OREGON AND WASHINGTON

1984

ANNUAL FISH PASSAGE REPORT

COLUMBIA AND SNAKE RIVERS

FOR

SALMON, STEELHEAD AND SHAD

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

NORTH PACIFIC DIVISION
Corps of Engineers
Prepared By:

U.S. Army Engineer District
Portland and Walla Walla

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ANNUAL FISH PASSSAGE REPORT
COLUMBIA AND SNAKE RIVER PROJECTS
CALENDAR YEAR 1984

BONNEVILLE DAM - 1984

1984 Fish Counting Schedule

1 Jan - 14 Mar	No Counting.
15 Mar - 31 Mar	Both laders counted for one 8-hour shift each day, 0800-1600 hours Pacific Standard Time.
1 Apr - 31 Oct	Both ladders counted for two 8-hour shifts each day, 0400-2000 hours Pacific Standard Time.
1 Nov - 15 Nov	Both ladders counted for one 8-hour shift each day, 0800-1600 hours Pacific Standard Time.
16 Nov - 31 Dec	No counting.

1984 Adult Fish Facilities Operating Schedule

Bradford Island Fish Ladder

1 Jan - 17 Jan	B-branch in service.
1 Jan - 7 Feb	A-branch and powerhouse collection channel in service.
17 Jan - 7 Feb	B-branch out of service for annual maintenance.
7 Feb - 13 Nov	B-branch in service.
7 Feb - 28 Feb	A-branch and powerhouse collection channel out of service for annual maintenance.
1 Mar - 6 Dec	A-branch and powerhouse collection channel in service.
13 Nov - 6 Dec	B-branch out of service for annual maintenance.
6 Dec - 31 Dec	B-branch in service. A-branch and powerhouse colleciton channel out of service for annual maintenance.

Second Powerhouse Fish Ladder

1 Jan - 17 Jan	Washington shore and Cascades Island ladders out of service for annual maintenance.
17 Jan - 13 Dec	Washington shore and Cascades Island ladders in service.
13 Dec - 31 Dec	Cascades Island ladder out of service for annual maintenance and contractor work.

* 26 Nov: Cascades Island lader out of service for 1.5 hours.

1984 Downstream Migrant Facilities Operating Schedule

First Powerhouse *

Additional information may be forthcoming.

10 Dec - 31 Dec	Out of service for annual maintenance.

Second Powerhouse

1 Jan - 23 Feb	Out of service for annual maintenance.
23 Feb - 31 Dec **	In service.

* The first powerhouse juvenile bypass alternated frequently between two modes of operation. It operated so that flow passed either toward the south end of the dam or the north. This was its' first year of operation and required considerable time to put into continuous operation.

** 4 Oct - 31 Dec: The second powerhouse juvenile bypass operated through the emergency relief conduit as a result of failure of the inclined screen.

Fishway Activities

The Corps Portland District Fisheries Field Unit continued studies to evaluate adult fish passage using electronic fish detectors and radio telemetry.

The National Marine Fisheries Service used the interim trapping facility located on the second powerhouse fish ladder to capture marked fish as part of an evaluation of the juvenile salmonid transportation program. All fish were returned to the fish ladder after examination and were counted at the counting station as normal.

The Oregon Department of Fish and Wildlife used the interim trap to collect late spawning "bright" fall chinook as part of a continuing program to establish a "bright" fall chinook egg bank. They trapped 3,653 chinook between 1 Sep and 16 Oct. These fish were transported to the Bonneville fish hatchery and were not counted at the counting station.

The effectiveness of the second powerhouse juvenile bypass facilities continued to be poor. The National Marine Fisheries Service continued research in an effort to determine problem areas and potential remedies. The Corps Portland District Fisheries Field Unit assisted in this effort by using hydroacoustic equipment to determine distribution of fish as they approached the powerhouse.

THE DALLES DAM - 1984

1984 Fish Counting Schedule

1 Jan - 31 Mar	No counting.
1 Apr - 31 Oct	Both ladders counted for two 8-hour shifts each day, 0400-2000 hours Pacific Standard Time.
1 Nov - 31 Dec	No counting.

1984 Adult Fish Facilities Operating Schedule

East Fish Ladder

1 Jan - 1 Feb	Out of service for annual maintenance.
1 Feb - 15 Nov	In service.
15 Nov - 31 Dec	Out of service for fishway modifications.*

Fish Turbine 1:

1 Jan - 2 Feb	Out of service for annual maintenance.
13 Jun	Out of service (1.0 hrs) for brush inspection.
19 Jul	Out of service (0.2 hrs) to adjust governor pressure.
20 Aug	Out of service (9.1 hrs) for breaker maintenance.
7 Sep	Out of service (4.0 hrs) for repair of the cooling water discharge valve.
15 Nov - 31 Dec	Out of service for fishway modifications. *

Fish Turbine 2:

1 Jan - 31 Jan	Out of service for annual maintenance.
13 Jun	Out of service (0.5 hrs) for brush inspection.
21 Aug	Out of service (8.5 hrs) for breaker maintenance.
15 Nov - 31 Dec	Out of service for fishway modifications. *

* The east fish ladder was modified to incorporate a submerged fish counting station and water conservation type weirs.

North Fish Ladder

1 Jan - 31 Dec	In service

1984 Ice and Trash Sluiceway Operating Schedule

1 Jan - 15 Apr	Operated with gatewell orifice flow.
15 Apr - 31 Aug	Operated with gatewell orifice flow. Chain gates 1-1, 1-2, and 1-3 open daily, sunrise to sunset.
1 Sep - 31 Oct	Operated with gatewell orifice flow. Chain gates 1-1, 1-2, and 1-3 open two hours after sunrise and two hours before sunset.
1 Nov - 31 Dec	Operated with gatewell orifice flow.

Fishway Activities

No research activities were conducted at The Dalles Dam during 1984.

JOHN DAY DAM - 1984

1984 Fish Counting Schedule

1 Jan - 31 Mar	No counting.
1 Apr - 31 Oct	Both ladders counted for two 8-hour shifts each day 0400-2000 hours Pacific Standard Time.
1 Nov - 10 Nov	Both ladders counted for one 8-hour shift each day, 0800-1600 Pacific Standard Time.
11 Nov - 31 Dec	No counting.

1984 Adult Fish Facilities Operating Schedule

South Fish Ladder

1 Jan - 9 Jan	In service.
9 Jan - 27 Jan	Out of service for annual maintenance.
27 Jan - 31 Dec	In service.

South Fish Turbine #1:

1 Jan - 21 Feb	Out of service for maintenance.
30 Apr - 14 May	Out of service for maintenance.
6 Jul	Out of service for maintenance.
10 Oct	Out of service for maintenance.
6 Nov - 5 Dec	Out of service for maintenance.

South Fish Turbine #2 and #3:

1 Jan - 21 Feb	Out of service for maintenance.

North Fish Ladder

1 Jan - 27 Nov	In service.
27 Nov - 7 Dec	Out of Service for annual maintenance.
7 Dec - 31 Dec	In service.

1984 Juvenile Salvage System Operating Schedule

1 Jan - 27 Apr	Operated gatewell orifices at units 1 through 16, on a rotational basis.
27 Apr - 23 Aug	Operated gatewell orifices at units 10 through 16, on a rotational basis.
27 Apr - 26 Sep	Dipped gatewells at units 1 through 10 during construction of the new juvenile bypass.
23 Aug - 29 Aug	Salvage system out of service for contractor modifications.*
29 Aug - 31 Dec	Operated gatewell orifices at units 11 through 16, on a rotational basis.

* A new juvenile bypass facility was being installed.

Fishway Activities

The Corps Portland District Fisheries Field Unit hydroacoustic monitoring program continued to regulate spill at John Day for juvenile salmonid passage. This operation is necessary until an efficient bypass is installed.

The National Marine Fisheries Service continued to operate the airlift sampling device at turbine 3 for juvenile indexing and to radio track juvenile salmonids in the forebay region to learn more of their behavior as they approach and pass John Day project.

MCNARY DAM - 1984

1984 Fish Counting Schedule

1 Jan - 31 Mar	No counting.
1 Apr - 31 Oct	Counting daily 0400-2000 hours Pacific Standard Time.
1 Nov - 31 Dec	No counting.

1984 Fish Ladder Operating Schedule

North Ladder:

1 Jan - 12 Feb	In service.
13 Feb - 16 Feb	Out of service for annual inspecion and maintenance.
17 Feb - 31 Dec	In service.

South Ladder:

1 Jan - 6 Feb	Out of service for diffuser repair and annual maintenance.
7 Feb - 31 Dec	In service.

1984 Fish Activities

Two 8-hour counting shifts were conducted from 0400-2000 hours Pacific Standard Time from 1 April through 31 October. One counter counted the south ladder by direct observation and the north ladder by closed circuit television. In 1984 fish counting was contracted to Washington Department of Game who took over the counting operation from 1 June to 31 October.

Spillbay 22 was not used during the spill season due to the fish barge loading below it and because of the spillbay's proximity to the fingerling facilities.

The south ladder was out of service from 19 December 1983 to 6 February 1984 fro the replacement of wood diffuser gratings with metal gratings.

National Marine Fisheries Service operated the trap in the north ladder as part of their transportation program evaluation.

The juvenile collection system was in operation from 13 April to 28 September.

ICE HARBOR DAM - 1984

1984 Fish Counting Schedule

1 Jan - 31 Mar	No counting.
1 Apr - 31 Oct	Counting daily 0400-2000 hours Pacific Standard Time.
1 Nov - 31 Dec	No counting.

1984 Fish Ladder Operating Schedule

North Ladder:

1 Jan - 29 Jan	In service.
30 Jan - 15 Feb	Out of service for annual inspection and maintenance.
16 Feb - 31 Dec	In service.

South Ladder:

1 Jan - 15 Feb	In service.
16 Feb - 1 Mar	Out of service for annual inspection and maintenance.
2 Mar - 31 Dec	In service

1984 Fishway Activities

Two 8-hour counting shifts were conducted from 0400 to 2000 hours Pacific Standard Time from 1 April through 31 October. One counter counted the south ladder by direct observation and the north ladder by closed circuit television. In 1984, fish counting was contracted to Washington Department of Game who took over the counting operation from 1 June to 31 October.

The ice and trash sluiceway was operated as a juvenile bypass from 29 March to 25 August.

The University of Idaho trapped and collected adult fall chinook in the south ladder during September as part of the Snake River fall chinook egg bank program.

LOWER MONUMENTAL DAM - 1984

1984 Fish Counting Schedule

1 Jan - 31 Mar	No counting.
1 Apr - 31 Oct	Counting daily 0400-2000 hours Pacific Standard Time.
1 Nov - 31 Dec	No counting.

1984 Fish Ladder Operating Schedule

North Ladder:

1 Jan - 13 Feb	In service.
14 Feb - 23 Feb	Out of service for annual inspection and maintenance.
24 Feb - 31 Dec	In service.

South Ladder:

1 Jan - 17 Jan	In service.
18 Jan - 13 Feb	Out of service for annual inspection and maintenance.
14 Feb - 31 Dec	In service

1984 Fishway Activities

Two 8-hour counting shifts were conducted from 0400 to 2000 hours Pacific Standard Time from 1 April through 31 October. One counter counted the north ladder by direct observation and the south ladder by closed circuit television. In 1984, fish counting was contracted to Washington Department of Game who took over the counting operation from 1 June to 31 October.

The juvenile bypass system operated from 9 March to 27 August.

LITTLE GOOSE DAM - 1984

1984 Fish Counting Schedule

1 Jan - 31 Mar	No counting.
1 Apr - 31 Oct	Counting daily 0400-2000 hours Pacific Standard Time with video motion detector system to monitor total project passage.
1 Nov - 31 Dec	No counting.

1984 Fish Ladder Operating Schedule

Project Ladder:

1 Jan - 15 Jan	In service.
16 Jan - 3 Feb	Out of service for annual inspection and maintenance.
4 Feb - 31 Dec	In service.

1984 Fishway Activities

Formal fish counting was suspended at the end of the 1981 fish counting season after the powerhouse collection system evaluation conducted in 1981 indicated that fish passed Little Goose without any apparent problems. A video motion detection system was used in 1984 to count fish as they moved past the fish counting window to give an estimate of total project passage.

The juvenile collecton system was in operation from 2 April to 28 July.

LOWER GRANITE DAM - 1984

1 Jan - 29 Feb	No counting.
1 Mar - 31 Mar	Counting daily 0800-1600 hours Pacific Standard Time.
1 Apr - 31 Oct	Counting daily 0400-2000 hours Pacific Standard Time.
1 Nov - 15 Dec	Counting daily 0800-1600 hours Pacific Standard Time.
16 Dec - 31 Dec	No counting.

1984 Fish Ladder Operating Schedule

Project Ladder:

1 Jan - 5 Jan	In service.
6 Jan - 14 Jan	Out of service for annual inspection and maintenance.
15 Feb - 31 Dec	In service.

1984 Fishway Activities

One 8-hour counting shift per day from 0800 to 1600 Pacific Standard Time was conducted from 1 March through 31 March and 1 November through 15 December. Two 8-hour shifts from 0400 to 2000 hours Pacific Standard Time were conducted from 1 April through 31 October. in 1984, fish counting was contracted to Washington Department of Game who took over the counting operation from 1 June to 31 October 85.

National Marine Fisheries Service operated the adult trap as part of their transportation program evaluation and conducted guiding efficiency tests on the traveling screens.

The juvenile collecton system was in operation from 30 March to 26 July.

TABLE 1
FISH ESCAPEMENT AT MAIN STEM DAMS
COLUMBIA AND SNAKE RIVERS 1979 to 1984

SPECIES	BONNEVILLE	THE DALLES	JOHN DAY	McNARY	ICE HARBOR	LOWER MONUMENTAL	LITTLE GOOSE	LOWER GRANITE	PRIEST RAPIDS	ROCKY REACH
1980										
CHINOOK*	245,518	113,951	100,664	80,773	14,717	10,885	10,605	10,986	38,286	10,163
Spring*	60,987	28,237	27,202	23,001	9,668	7,259	6,850	6,758	11,136	2,033
Summer*	31,065	21,133	19,664	18,862	3,305	2,712	3,057	3,447	18,708	6,068
Fall*	153,466	64,581	53,798	38,910	1,744	914	698	781	8,442	2,062
Jacks	37,748	20,016	25,877	17,564	2,934	2,214	1,772	2,385	7,727	2,139
STEELHEAD	129,254	93,963	78,199	66,524	50,221	34,322	38,627	40,454	8,506	4,345
SOCKEYE	58,882	72,088	50,675	44,301	36	48	88	96	52,055	29,906
COHO*	22,052	6,326	1,924	571	58	73	124	43	316	713
Adults	12,974	3,356	1,016	307	50	61	89	30	148	
Jacks	9,078	2,970	908	264	8	12	35	13	168	
SHAD	939,390	1,160,752	638,037	275,223	2,857	4,854	614	308	23,701	0
1981										
CHINOOK*	285,650	135,176	114,359	80,619	22,092	19,991	19,086	19,198	32,605	10,259
Spring*	65,009	41,160	37,677	32,330	16,167	14,275	13,868	13,642	14,787	3,593
Summer*	26,929	19,676	15,813	15,141	3,814	4,092	4,033	3,805	12,380	4,726
Fall*	193,712	74,340	60,869	33,148	2,111	1,624	1,385	1,751	5,438	1,940
Jacks	53,351	33,919	34,547	17,192	2,411	2,207	1,945	2,420	2,671	1,449
STEELHEAD	159,270	113,268	95,172	61,985	41,290	35,923	38,680	40,234	9,004	5,523
SOCKEYE	56,037	35,447	46,146	26,644	142	136	200	218	51,460	30,649
COHO*	30,310	6,941	2,562	3,736	82	63	120	17	433	522
Adults	21,935	2,536	943	1,725	25	19	6	1	132	
Jacks	8,575	4,405	1,619	2,011	57	44	112	16	301	
SHAD	881,179	1,088,958	527,678	193,373	5,048	1,274	84	72	20,857	0
1982										
CHINOOK*	322,809	172,682	114,082	102,225	22,646	21,965	**	19,476	32,062	9 223
Spring*	76,044	44,750	36,530	28,352	14,600	15,303		12,746	9,088	2,827
Summer*	26,614	19,342	16,360	16,574	4,527	4,284		4,528	9,883	3,511
Fall*	220,151	108,590	91,192	57,299	3,519	2,378		2,202	13,091	2,885
Jacks	74,898	60,165	56,966	32,979	2,513	1,943		2,175	5,888	2,881
STEELHEAD	157,640	117,434	108,603	75,099	73,405	62,772		72,840	11,051	6,293
SOCKEYE	50,219	33,331	37,970	15,077	174	154		211	40,461	17,379
COHO*	73,832	7,383	4,063	3,119	348	89		59	1,808	881
Adults	55,816	4,336	2,525	1,356	158	52		31	1,267	
Jacks	18,016	3,047	1,538	1,763	190	37		28	547	
SHAD	780,212	1,002,820	514,861	117,862	19,337	5,043		30	17,971	0
1983										
CHINOOK*	243,834	157,210	183,022	121,636	20,259	19,082	**	19,198	32,605	10,259
Spring*	54,898	35,151	75,463	29,874	12,189	12,731		13,642	14,787	3,593
Summer*	18,046	13,796	11,982	13,290	4,321	3,917		4,528	9,883	3,511
Fall*	112,721	65,861	52,261	48,570	1,771	802		535	7,875	1,386
Jacks	58,169	42,402	43,316	29,902	1,978	1,632		2,253	3,596	1,624
STEELHEAD	213,779	170,673	154,697	125,254	88,485	80,562		84,234	31,114	19,179
SOCKEYE	100,527	84,202	89,810	40,903	216	118		124	89,808	26,006
COHO*	15,176	3,457	1,640	2,470	465	110		51	452	219
Adults	4,919	1,203	933	819	221	66		25	298	219
Jacks	10,257	2,254	707	1,651	244	44		26	154	
SHAD	1,419,833	1,932,000	1,172,587	417,131	13,942	12,584		552	95,820	0
1984										
CHINOOK*	323,299	203,837	188,779	159,076	17,968	18,035	**	16,533	42,568	14,632
Spring*	51,139	30,658	28,781	23,716	8,137	8,482		6,511	12,107	3,834
Summer*	28,407	18,870	18,277	17,924	5,487	5,911		5,429	16,125	5,463
Fall*	145,029	83,462	71,571	61,041	1,650	615		637	7,906	2,144
Jacks	104,837	70,847	70,141	56,393	2,694	3,027		3,956	6,430	3,191
STEELHEAD	315,587	218,552	199,833	135,533	93,891	89,086		98,952	26,017	17,177
SOCKEYE	152,545	101,379	109,815	56,894	105	334		47	114,756	73,289
COHO*	29,422	3,172	2,065	2,817	22	26		-	127	852
Adults	16,694	1,861	1,286	897	17	23		-	77	852
Jacks	12,728	1,311	779	1,920	5	3		-	50	-
SHAD	1,274,737	1,190,002	586,015	269,793	8,504	10,491		329	25,182	-
ASSUMED DATES FOR CHINOOK RUNS (MAY VARY FOR PREVIOUS YEARS)										
SPRING	15 Mar - 31 May	1 Apr - 3 Jun	1 Apr - 5 Jun	1 Mar - 6 Jun	1 Mar - 11 Jun	1 Apr - 13 Jun		1 Mar - 17 Jun	1 Apr - 13 Jun	17 Apr - 19 Jun
SUMMER	1 Jun - 31 Jul	4 Jun - 3 Aug	6 Jun - 5 Aug	9 Jun - 8 Aug	12 Jun - 11 Aug	14 Jun - 13 Aug		18 Jun - 17 Aug	14 Jun - 13 Aug	20 Jun - 19 Aug
FALL	1 Aug - 15 Nov	4 Aug - 31 Oct	6 Aug - 31 Oct	9 Aug - 31 Oct	12 Aug - 31 Oct	14 Aug - 31 Oct		18 Aug - 15 Dec	14 Aug - 31 Dec	20 Aug - 15 Nov

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

** 1981 concludes visual fish counting at Little Goose Dam. Counting is now done on an automatic system

TABLE 2
YEARLY TOTALS OF SALMONID FISH COUNTED OVER BONNEVILLE DAM
1938-1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	CHUM	PINK	TOTAL SALMONID
1938	271,799	107,003	75,040	15,185	2,177		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	36,237	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	649,527
1971	405,702	193,966	87,447	75,989	29	176	763,309
1972	394,456	185,886	56,323	65,932	1	51	702,649
1973	398,635	157,823	58,979	54,609	43	12	670,101
1974	366,759	137,054	43,837	60,955	23	2	608,630
1975	425,566	85,540	58,212	58,307	11	309	627,945
1976	507,773	124,177	43,611	53,150	11	2	728,724
1977	366,657	193,437	99,829	19,408	17		679,348
1978	394,600	104,431	18,436	52,590	28		570,085
1979	276,306	113,979	52,628	45,328	1	23	~~48,265~~ 488,265
1980	245,518	129,254	58,882	22,052	44		455,750
1981	285,650	159,270	56,037	30,510	4	20	531,491
1982	322,809	157,640	50,219	73,832	12		604,512
1983	241,785	197,909	100,522	15,159	48	29	555,452
1984	323,299	315,587	152,545	29,422	34	1	819,788
TOTAL	16,549,959	6,907,758	4,192,009	1,343,019	38,278	1,293	29,031,216
47-YEAR AVERAGE	352,127	146,974	89,192	28,575	814	28	617,685

TABLE 3

MONTHLY TOTALS OF SALMONID AND SHAD COUNTED OVER BONNEVILLE DAM
1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	348	27,185	23,606	13,060	15,347	41,859	179,881	21,573	440	-	323,299
STEELHEAD	-	-	582	2,106	4,256	14,454	92,501	93,866	102,887	4,467	468	-	315,587
SOCKEYE	-	-	-	-	6	106,892	45,141	500	5	1	-	-	152,545
COHO	-	-	-	-	-	-	41	1,394	20,174	6,158	555	-	28,322
CHUM	-	-	-	-	-	-	-	-	-	5	29	-	34
PINK	-	-	-	-	-	-	-	-	1	-	-	-	1
TOTAL SALMONID	-	-	930	29,291	27,868	134,406	153,030	137,619	302,948	32,204	1,492	-	819,788
SHAD	-	-	-	-	553	950,405	319,478	4,097	149	55	-	-	1,274,737

TABLE 4

DISCHARGE AND WATER QUALITY DATA
BONNEVILLE DAM - 1984

DATE	JANUARY			FEBRUARY		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	135.6	5.8	37.0	229.0	2.5	39.0
2	147.7	5.5	37.0	248.1	2.5	39.0
3	149.3	5.5	36.0	219.0	2.5	39.0
4	186.4	5.5	37.0	186.4	1.2	39.0
5	220.4	5.5	37.0	179.2	1.2	39.0
6	219.4	5.5	37.0	230.9	1.2	39.0
7	220.1	1.0	37.0	226.0	1.2	39.0
8	220.6	1.0	37.0	231.0	1.2	39.0
9	234.9	1.0	38.0	235.0	1.2	39.0
10	220.0	1.0	37.0	230.7	1.0	40.0
11	224.3	.8	38.0	237.1	.5	40.0
12	195.8	1.2	38.0	200.2	1.0	40.0
13	205.8	1.2	39.0	224.9	1.0	41.0
14	214.0	1.4	38.0	244.3	1.0	41.0
15	220.3	1.2	38.0	258.8	1.0	40.0
16	233.7	1.8	38.0	218.7	1.0	40.0
17	240.2	2.0	38.0	216.0	1.5	40.0
18	236.5	2.0	38.0	225.1	1.0	40.0
19	229.1	1.8	38.0	229.2	1.5	40.0
20	245.6	1.8	37.0	214.7	1.0	39.0
21	188.0	1.4	37.0	209.4	1.8	39.0
22	180.7	1.2	37.0	240.1	1.8	40.0
23	206.5	1.2	37.0	243.9	1.8	40.0
24	218.2	1.2	38.0	248.8	1.8	41.0
25	216.2	1.2	39.0	218.3	1.8	40.0
26	241.9	1.2	39.0	190.5	1.8	40.0
27	236.0	1.2	39.0	198.6	2.0	41.0
28	212.0	2.5	39.0	220.2	2.0	40.0
29	198.6	2.5	39.0	225.5	2.5	40.0
30	207.1	2.5	39.0			
31	211.6	2.5	39.0			
TOTALS	220.2			234.4		
AVERAGES						

TABLE 5

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MARCH 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1										196.6	.0	3.2	41.0
2										205.4	.0	2.0	41.0
3										225.5	.0	2.0	41.0
4										239.3	.0	2.2	41.0
5										213.1	.0	2.0	41.0
6										208.2	.0	2.0	42.0
7										208.8	.0	2.0	42.0
8										220.7	.0	2.0	42.0
9										209.7	.0	2.0	42.0
10										190.0	.0	2.5	42.0
11										214.0	.0	2.5	42.0
12										234.7	.0	2.8	42.0
13										247.0	.0	2.7	42.0
14										230.6	.0	2.6	42.0
15	7			2				48		254.7	.0	2.6	43.0
16	7							62		261.7	.0	2.6	43.0
17	4							22		262.7	.0	2.2	43.0
18	15			1				42		254.6	.0	2.2	43.0
19	24							51		237.3	.0	2.0	44.0
20	24							42		225.8	.0	2.0	44.0
21	13							29		217.8	.0	2.0	45.0
22	12							16		259.5	.0	2.0	46.0
23	39							30		274.1	.0	2.0	45.0
24	24							43		276.4	.0	1.8	46.0
25	16							29		264.3	.0	1.6	46.0
26	24							32		236.5	.0	1.8	46.0
27	16			1				33		257.8	.0	1.8	46.0
28	28							35		266.8	.0	1.5	47.0
29	27							25		254.3	.8	1.4	47.0
30	29							13		253.5	1.1	1.0	47.0
31	35			1				30		272.4	.0	1.0	47.0
TOTALS	344			4				582					
AVERAGES	20			1				34		350.1			

TABLE 6

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	59			2				44		244.3	.0	1.0	47.0
2	157			1				52		224.4	.0	1.0	48.0
3	226							56		253.5	1.8	1.0	48.0
4	408							122		244.4	.0	1.0	48.0
5	353							53		223.9	6.2	1.0	48.0
6	621			2				86		253.4	62.4	1.0	48.0
7	577			1				92		275.0	84.6	1.0	48.0
8	778			4				74		247.2	71.1	1.0	48.0
9	683			2				55		249.7	64.3	2.0	48.0
10	805			3				65		275.9	84.1	1.4	49.0
11	783			8				51		289.9	86.6	2.0	48.0
12	770			2				78		264.2	64.9	1.8	49.0
13	782			7				76		294.8	101.2	1.5	49.0
14	744			24				61		262.5	114.6	1.5	49.0
15	1078			16				91		251.3	89.4	1.2	50.0
16	1449			22				81		295.0	119.6	1.5	50.0
17	1249			23				79		293.4	114.0	1.8	50.0
18	1186			25				74		317.7	137.0	1.8	50.0
19	1232			19				46		335.0	151.0	1.8	50.0
20	1255			12				86		317.3	137.9	1.8	50.0
21	846			20				52		357.0	179.6	1.8	50.0
22	802			16				48		344.1	163.4	1.3	51.0
23	1117			42				57		339.4	162.5	1.3	51.0
24	802			25				54		339.1	163.9	1.3	51.0
25	760			53				55		338.5	165.9	1.3	50.0
26	1095			59				78		339.2	153.8	2.3	50.0
27	1245			83				78		341.6	138.8	1.6	50.0
28	1413			90				82		291.8	107.2	1.6	50.0
29	1652			82				96		279.7	94.1	1.6	51.0
30	1522			736				84		293.7	95.4	2.0	51.0
TOTAL	26,449			736				2,106					
AVERAGES	882			27				70		289.2	97.2		

TABLE 7

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	1,312			98				79	1	316.2	118.9	2.0	51.0
2	1,667			118				154		288.9	89.3	2.0	52.0
3	1,101			123				99		315.8	114.1	2.0	51.0
4	1,068			144				119		289.2	76.3	2.0	52.0
5	1,599			162				124		255.4	57.3	2.0	52.0
6	1,515			195				125		264.5	67.2	2.0	52.0
7	1,068			163				117		281.2	83.5	2.2	52.0
8	921			123				76		284.3	92.1	2.2	53.0
9	1081			180				101		272.3	71.0	2.2	53.0
10	868			134				77		332.1	128.4	2.2	53.0
11	554			97				112		329.6	122.3	2.2	53.0
12	628			155				137		307.7	108.4	2.2	53.0
13	511			137				130		287.8	98.8	2.2	53.0
14	653			145				108	0	312.2	97.3	2.2	54.0
15	418			84				115		366.4	143.0	2.2	53.0
16	376			122				78	0	375.6	157.6	2.2	53.0
17	441			153				143		365.5	150.3	2.2	54.0
18	373			153				137		352.9	142.6	1.8	54.0
19	364			126				122		350.5	157.1	1.8	55.0
20	321			109				119		325.5	134.5	1.6	55.0
21	255			123				119	-	335.6	137.3	1.8	55.0
22	367			85				131	3	356.8	155.8	1.8	55.0
23	351			97				160		368.1	162.0	1.8	55.0
24	382			74				236	7	372.4	160.7	1.8	56.0
25	253			62				184	20	372.2	159.2	1.8	56.0
26	222			65				168	18	350.5	143.0	1.7	55.0
27	220			67				196	7	299.7	93.8	1.7	56.6
28	315			77			1	166	40	316.7	110.3	1.8	56.0
29	304			54				209	93	340.0	124.5	1.8	56.0
30	288			45			2	198	175	356.4	139.7	1.8	57.0
31	277			63			3	217	189	376.5	160.1	2.0	57.0
TOTAL	20,073			3,533			6	4,256	553				
AVERAGES	648			114			2	137	46	326.4	121.2		

TABLE 8

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		249		50			13	276	819	374.9	163.3	2.0	57.0
2		318		54			19	246	2663	374.8	167.1	2.0	58.0
3		231		48			35	256	2204	359.2	151.6	1.8	58.0
4		224		46			32	236	1578	358.5	150.9	2.0	58.0
5		188		51			43	259	776	360.2	152.4	2.0	58.0
6		272		56			121	284	3505	337.3	136.2	2.0	58.0
7		269		55			125	255	1998	336.9	136.0	2.0	57.0
8		292		49			255	290	2571	338.6	128.9	2.0	57.0
9		261		58			397	301	4893	313.8	96.3	1.8	58 0
10		253		20			574	282	6301	317.0	110.4	2.0	58.0
11		227		52			644	285	9008	312.8	93.8	2.0	57.0
12		265		50			851	381	15,201	324.0	103.5	2.5	58.0
13		180		40			897	377	14,020	329.9	110.4	1.8	58.0
14		215		58			1228	403	23,811	352.8	140.3	1.6	58.0
15		234		47			1851	409	37,628	330.4	118.0	1.6	59.0
16		300		57			2735	523	46,714	363.1	157.1	2.8	59.0
17		237		62			3454	512	21,281	373.3	168.4	2.6	60.0
18		388		97			5797	590	39,992	375.6	175.9	2.8	60.0
19		360		95			5090	554	63,263	375.3	183.6	2.8	61.0
20		295		72			4749	498	59,907	375.6	171.0	2.8	60.0
21		477		115			7158	661	78,326	376.3	157.1	2.8	60.0
22		527		98			8109	662	50,283	370.6	169.3	2.8	61.0
23		574		126			9756	768	75,994	358.5	150.6	2.8	62.0
24		774		139			12,858	949	68,740	349.8	143.3	2.8	62.0
25		748		130			11,646	926	66,523	352.2	159.8	3.1	62.0
26		668		74			9950	825	86,423	363.7	169.5	3.1	62.0
27		584		93			6537	717	49,397	375.4	174.0	3.1	63.0
28		430		90			4447	606	51,428	374.8	163.7	3.1	63.0
29		433		82			3965	580	41,709	365.3	160.9	3.1	63.0
30		436		87			3578	543	23,419	354.4	147.2	2.2	63.0
TOTALS		10,909		2,151			106,892	14,454	950,405				
AVERAGES		364		72			3563	482	31,680	354.2	147.0		

TABLE 9

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		450		131			3489	693	23,381	360.0	152.4	3.1	63.0
2		340		109			2431	743	24,551	328.9	136.0	2.2	63.0
3		575		95			4251	1076	26,249	277.2	96.2	2.5	64.0
4		485		104			3826	1293	24,889	261.1	75.6	2.5	64.0
5		398		170		2	4023	1338	22,416	291.8	112.3	2.5	64.0
6		718		111			4076	2017	22,918	280.3	76.7	2.8	65.0
7		683		173			3888	2026	26,600	265.1	67.4	2.8	65.0
8		664		141			3628	1663	25,754	278.8	72.2	2.8	65.0
9		515		104			2340	2178	20,436	234.4	33.7	2.8	66.0
10		513		143			1719	3478	13,805	207.4	18.3	3.4	66.0
11		501		155			1822	3221	15,180	196.6	1.1	3.8	67.0
12		333		110			1304	2817	7,870	197.7	.0	3.8	66.0
13		396		125			1144	2926	8,715	193.6	.0	3.8	66.0
14		358		118			968	3005	8,952	193.7	.0	4.0	66.0
15		301		96			965	3179	9,271	194.2	.0	4.0	67.0
16		278		95			685	3301	5,575	200.1	.0	4 0	67.0
17		276		124			671	3941	5,147	204.2	.0	4.0	67.0
18		310		110			566	3613	4,120	201.3	.0	4.0	68.0
19		228		146			518	3235	2,484	200.4	.0	4.1	68.0
20		331		157			459	3772	2,871	160.9	.0	4.1	68.0
21		234		116			349	3359	2,194	177.7	.0	4.0	68.0
22		273		104			407	3662	2,196	160.7	.0	4.0	68.0
23		206		103			255	3198	2,646	142.8	.0	4.0	68.0
24		235		141	1		312	3951	1,723	144.3	.0	4.0	69.0
25		261		128	1		240	4477	1,920	145.5	.0	4.0	69.0
26		333		159	3		186	4900	1,281	150.8	.0	4.0	69.0
27		255		143	3	1	134	3776	1,274	175.4	.0	4.0	69.0
28		248		126	5	3	125	4625	1,621	190.7	.0	4.0	69.0
29		311		133	4	3	148	3520	1,459	150.3	.0	4.0	69.0
30		203		147	4	3	129	2948	978	147.5	.0	4.0	69.0
31		200		118	6	2	83	4570	1,002	165.0	.0	4.5	70.0
TOTALS		11,412		3,935	27	14	45,141	92,501	319,478				
AVERAGES		368		127	3	2	1,456	2,984	10,306	209.0	27.2		

TABLE 10

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - **AUGUST 1984**

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			409	124	3		70	5,091	734	149.6	.0	4.0	70.0
2			248	147	8	3	65	4,667	508	150.3	.0	4.0	70.0
3			344	113	3	2	48	6,278	431	151.1	.0	4.0	70.0
4			248	120	2		48	3,125	269	124.7	.0	4.8	70.0
5			371	93	2	2	25	4,358	281	105.3	.0	4.8	70.0
6			453	114	2	2	9	2,550	107	118.3	.0	5.4	70.0
7			508	134	1		38	3,432	284	160.3	.0	5.4	70.0
8			502	130		1	28	3,111	123	193.3	.0	5.4	70.0
9			482	153	2	1	22	3,279	213	166.5	.0	5.4	70.0
10			504	167		2	9	3,346	203	130.6	.0	5.0	70.0
11			600	160	3	6	19	3,517	164	141.8	.0	5.0	71.0
12			559	131	2	1	14	3,593	178	136.2	.0	5.0	71.0
13			338	156	2	1	15	2,277	64	139.9	.0	5.0	71.0
14			426	175		1	3	2,225	61	152.6	.0	5.0	71.0
15			572	140			7	2,124	39	146.3	.0	5.0	71.0
16			664	164	2	2	11	2,224	75	150.2	.0	5.0	71.0
17			855	319	21	8	5	2,706	49	159.9	.0	5.3	71.0
18			992	291	6	19	20	3,313	33	124.4	.0	5.3	71.0
19			1103	385	5	9	6	3,429	43	148.4	.0	5.3	71.0
20			700	280	10	6	1	2,022	50	135.0	.0	5.3	71.0
21			880	290	15	22	1	2,393	34	127.2	.0	5.3	71.0
22			721	325	17	10	2	1,987	9	149.7	.0	5.4	71.0
23			935	269	13	13	5	1,893	13	154.4	.0	5.4	71.0
24			685	285	14	16	2	1,155	32	153.5	.0	5.4	70.0
25			1081	275	10	10	10	1,369	26	156.7	.0	5.8	71.0
26			1266	306	17	14	4	811	14	130.1	.0	5.3	71.0
27			2587	523	27	24	3	1,165	4	140.0	.0	5.8	70.0
28			3156	1032	82	59	3	2,439	5	130.7	.0	5.3	70.0
29			3079	1334	188	115		3,326	23	145.3	.0	5.8	70.0
30			2892	1480	227	86	7	5,090	6	157.7	.0	5.3	70.0
31			2724	1360	156	119		5,571	22	121.6	.0	5.2	70.0
TOTALS			30,884	10,975	840	554	500	93,866	4,097				
AVERAGES			996	354	31	21	17	3028	132	143.6	.0		

TABLE 11

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			3,885	1408	244	119		5,553	9	123.4	.0	5.0	70.0
2			5,003	1744	345	123		5,456	10	128.3	.0	5.0	70.0
3			8,047	1179	660	203		6,422	14	110.0	.0	5.0	70.0
4			8,715	2281	745	199	1	7,606	4	110.0	.0	5.0	70.0
5			8,303	2016	738	252		7,888	8	110.3	.0	5.0	70.0
6			7,381	2057	566	266		6,209	11	122.6	.0	6.0	69.0
7			5,192	2025	353	228		3,709	12	130.2	.0	6.0	68.0
8			3,315	1526	260	171		2,430	6	130.3	.0	4.8	68.0
9			4,844	1334	322	152		2,331	8	113.3	.0	5.5	68.0
10			9,596	1935	627	222	1	5,193		110.8	.0	6.0	68.0
11			6,851	2738	715	267	1	6,247	9	132.1	.0	6.0	67.0
12			5,412	3488	866	356		8,331	8	154.4	.0	5.5	67.0
13			5,255	3981	1066	362		6,841	3	137.5	.0	5.5	67.0
14			3,045	2892	767	450		4,061	7	106.1	.0	5.0	67.0
15			1,473	2850	445	372		2,408	8	125.0	.0	5.2	66.0
16			1,649	2826	450	398		2,191	3	130.1	.0	5.7	68.0
17			1,897	2706	414	340	1	2,797	3	130.4	.0	5.5	68.0
18			2,693	3025	452	477		3,190	1	134.3	.0	5.5	68.0
19			3,411	3295	404	349		3,161	1	130.3	.0	5.5	67.0
20			2,621	3021	345	380		1,888	3	130.8	.0	5.0	67.0
21			2,305	3052	276	253		1,985	4	130.3	.0	5.5	67.0
22			1,414	2521	159	188		1,104	2	115.2	.0	5.5	66.0
23			905	2208	96	195		745	2	102.0	.0	5.5	65.0
24			653	2238	57	180		587		117.8	.0	6.0	65.0
25			1,019	2718	172	265	1	997	2	123.7	.0	6.2	64.0
26			1,169	2207	157	285		955	4	130.7	.0	6.0	64.0
27			848	1770	134	272		677		127.3	.0	6.0	64.0
28			1,056	1917	131	220		788	5	119.7	.0	6.0	64.0
29			935	1525	114	214		627	2	120.3	.0	6.0	64.0
30			804	1702	111	225		510		107.5	.0	6.0	64.0
TOTALS			109,696	70,185	12,191	7,983	5	102,887	149				
AVERAGES			3,657	2,339	406	266	1	3,430	6	123.2	.0		

TABLE 12

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			779	1810	73	166		517	5	97.9	.0	6.0	64.0
2			397	1424	73	171		395	2	157.2	.0	6.0	64.0
3			803	1188	126	238		473	2	149.8	.0	5.0	64.0
4			339	936	57	146		263		165.3	.0	5.0	63.0
5			548	1004	92	174		308	3	141.9	.0	4.1	63.0
6			450	942	68	134		266	9	102.4	.0	4.1	63.0
7			307	1023	43	142		251	3	100.3	.0	4.2	63.0
8			313	676	39	131		184	2	107.5	.0	4.2	63.0
9			317	643	43	122		173	2	116.7	.0	5.9	63.0
10			258	547	51	146		156	5	122.2	.0	5.8	63.0
11			200	469	74	147		110	2	133.1	.0	5.0	62.0
12			106	273	38	25		63		142.4	.0	5.0	62.0
13			83	285	80	144		70		116.2	.0	5.5	61.0
14			101	425	84	208		102	1	129.9	.0	5.5	61.0
15			77	377	59	248		132	1	140.2	.0	5.5	60.0
16			68	240	53	137		78	3	139.7	.0	5.5	59.0
17			151	345	54	126		129	2	115.2	.0	5.5	59.0
18			83	184	61	51		74		115.5	.0	5.5	59.0
19			142	338	58	73		78	2	157.8	.0	5.5	58.0
20			123	336	86	114		82	4	120.5	.0	4.5	58.0
21			140	329	75	149	1	66	1	122.4	.0	5.0	58.0
22			66	276	41	95		32	2	154.9	.0	4.8	57.0
23			101	238	62	82		56		145.3	.0	4.8	56.0
24			82	177	60	72		61	1	138.6	.0	4.8	56.0
25			110	130	96	96		46	1	114.3	.0	4.8	56.0
26			79	115	103	71		56	1	168.0	.0	4.8	56.0
27			99	94	155	105		72		156.9	.0	4.5	56.0
28			69	89	156	134		58		123.2	.0	5.0	56.0
29			37	57	89	60		50	1	121.5	.0	4.5	55.0
30			30	61	84	59		30		126.4	.0	4.4	55.0
31			27	57	107	52		36		148.0	.0	4.6	55.0
TOTALS			6,485	15,088	2,340	3,818	1	4,467	55				
AVERAGES			209	487	75	123	1	144	2	132.0	.0		

TABLE 13

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - NOVEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			22	23	41	21		31		139.9	.0	4.6	54.0
2			39	37	79	33		34		156.1	.0	4.6	52.0
3			14	40	172	46		31		142.9	.0	4.5	51.0
4			9	22	150	40		35		120.6	.0	4.5	51.0
5			32	24	120	48		51		125.5	.0	4.5	52.0
6			7	19	18	31		27		130.2	.0	4.0	51.0
7			11	7	94	36		66		137.3	.0	4.0	51.0
8			8	2	63	15		28		130.6	.0	4.0	51.0
9			9	15	90	12		39		153.1	.0	4.0	51.0
10			13	11	109	12		25		160.7	.0	3.0	51.0
11			15	8	52	7		24		140.3	.0	4.0	51.0
12			9	9	88	25		23		134.2	.0	4.0	50.0
13			11	9	41	9		18		140.0	.0	4.0	50.0
14			11	2	72	12		21		140.3	.0	2.6	50.0
15			3	2	107	12		15		170.5	.0	2.6	50.0
16										190.8	.0	2.6	50.0
17										167.5	.0	4.0	50.0
18										152.0	.0	4.0	50.0
19										151.2	.0	4.0	49.0
20										147.6	.0	3.5	49.0
21										168.6	.0	4.0	49.0
22										128.7	.0	4.0	48.0
23										139.1	.0	4.0	48.0
24										142.8	.0	5.0	48.0
25										152.9	.0	5.0	48.0
26										151.0	.0	5.0	48.0
27										142.8	.0	5.0	47.0
28										156.5	.0	5.0	47.0
29										144.4	.0	4.6	47.0
30										190.3	.0	4.6	47.0
TOTALS			213	230	1,296	1 359		468					
AVERAGES			14	15	86	24		31		148.2	.0		

TABLE 14

WATER TEMPERATURE AND STREAM FLOW DATA
BONNEVILLE - 1984

DECEMBER			
DATE	WATER TEMP.	DISCHARGE	TURBIDITY
1	47.0	186.6	3.8
2	47.0	183.8	3.8
3	46.0	190.4	3.8
4	46.0	184.3	3.8
5	46.0	155.3	3.8
6	46.0	177.6	3.8
7	44.0	173.8	2.2
8	44.0	154.8	2.2
9	45.0	161.3	3.8
10	45.0	176.2	5.4
11	44.0	175.1	4.5
12	44.0	170.1	4.0
13	44.0	170.2	4.0
14	44.0	171.0	2.0
15	44.0	156.4	1.8
16	43.0	161.1	2.0
17	43.0	190.1	3.5
18	43.0	183.0	2.0
19	41.0	171.5	2.0
20	41.0	188.0	2.0
21	41.0	182.1	2.0
22	40.0	170.6	2.5
23	40.0	146.8	2.5
24	40.0	133.9	2.5
25	40.0	113.2	2.8
26	40.0	143.8	2.7
27	40.0	149.5	2.5
28	40.0	158.5	4.0
29		165.5	
30	39.0	170.3	3.0
31	39.0	143.4	5.0
TOTALS		166.4	
AVERAGES			

TABLE 15

PEAK DAYS OF FISH MIGRATION
BONNEVILLE DAM - 1938-1984

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

* Fish counting initiated on 7 May 1938.

TABLE 15 (Continued)

PEAK DAYS OF FISH MIGRATION
BONNEVILLE DAM - 1938-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO		CHUM		SHAD	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1966	Apr 16	6,077	Jun 21	2,882	Sep 17	8,121	Jul 16	3,523	Jul 1	3,768	Sep 20	8,121	Nov 15	57	Jul 10	27,744
1967	Apr 21	5,325	Jul 2	4,188	Sep 15	13,838	Sep 8	2,807	Jul 5	10,235	Sep 15	5,988	Nov 12	33	Jul 6	14,760
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	19363	Aug 5	2,986	Jul 5	3,498	Sep 11	8,576	Oct 23	11	Jun 26	25,537
1971	Apr 27	7,155	Jul 1	2,247	Sep 9	14,097	Jul 27	5,438	Jul 7	5,926	Sep 6	6,798	Sep 6	6	Jul 16	11,977
1972	Apr 26	19,241	Jun 23	3,743	Sep 9	10,752	Sep 11	5,359	Jul 6	4,000	Sep 13	3,774	Oct 1	1	Jul 5	19,490
1973	Apr 23	8,735	Jun 12	1,203	Sep 8	15,858	Sep 4	3,469	Jun 30	4,186	Sep 7	2,723	Sep 2	31	Jun 12	46,892
1974	May 6	7,318	Jun 30	2,061	Sep 15	12,216	Aug 2	2,951	Jul 3	3,721	Sep 16	2,480	Nov 15	5	Jul 8	9,737
1975	May 8	4,604	Jul 10	1,329	Sep 7	23,326	Jul 27	1,804	Jul 2	4,353	Sep 9	3,516	None		Jul 9	22,974
1976	Apr 29	6,556	Jun 25	2,064	Sep 6	26,509	Jul 23	2,358	Jun 30	2,778	Sep 13	3,779	None		Jul 3	24,692
1977	Apr 18	6,370	Jun 21	1,010	Sep 9	13,050	Sep 3	5,517	Jun 25	6,306	Sep 9	812	None		Jun 10	51,801
1978	Apr 22	8,284	Jun 18	1,243	Sep 11	17,087	Sep 10	2,146	Jun 24	1,119	Sep 12	3,738	Nov 8	6	Jun 12	62,509
1979	Apr 23	1,949	Jul 28	836	Sep 9	13,944	Aug 2	2,144	Jun 26	2,909	Sep 7	3,821	Oct 31	1	Jun 10	126,646
1980	Apr 28	2,665	Jun 26	1,062	Sep 7	9,989	Aug 9	2,627	Jul 4	3,311	Sep 7	702	Nov 11	10	Jun 21	63,964
1981	Apr 17	2,483	Jun 30	906	Sep 5	12,754	Aug 1	3,058	Jun 26	4,419	Sep 5	1,769	*		Jun 20	54,693
1982	Apr 28	4,067	Jun 13	697	Sep 4	14,697	Jul 31	2,699	Jul 1	2,581	Sep 10	4,058	**		Jun 18	66,820
1983	Apr 22	2,163	Jun 25	484	Sep 17	5,308	Jul 24	5,304	Jul 1	5,712	Sep 14	541	Nov 5	6	Jun 22	128,914
1984	May 2	1,667	Jun 24	774	Sep 4	8,715	Sep 12	8,331	Jun 24	12,858	Sep 13	1,066	Nov 14	10	Jun 26	86,463

* One Chum was counted on each of the following days: 31 Oct, 4 Nov, 5 Nov, and 9 Nov.

** One Chum was counted on each of the following days: 16 Jul, 5 Aug, 21 Aug, 22 Aug, 29 Sep, 30 Sep, 3 Oct, 18 Oct, 25 Oct, 26 Oct, 6 Nov, 15 Nov.

TABLE 16

MONTHLY COUNT OF CHINOOK SALMON
BONNEVILLE DAM - 1938-1984

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

TABLE 16 (Continued)

MONTHLY COUNT OF CHINOOK SALMON
BONNEVILLE DAM - 1938-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING *JAN 1- MAY 31	SUMMER JUN 1- JUL 31	FALL AUG 1- DEC 31*
1968			1,342	69,420	28,425	46,793	36,126	27,779	126,994	4,010	265		341,154	99,187	82,919	159,048
1969			1,910	65,371	106,281	59,177	42,976	38,456	187,502	5,511	359		507,543	173,562	102,153	231,828
1970			2,020	78,605	30,351	35,091	29,811	44,559	159,710	4,364	269		384,780	110,976	64,902	208,902
1971			683	60,849	63,985	37,757	40,154	26,749	166,346	8,820	359		405,702	125,517	77,911	202,274
1972			426	154,443	31,271	36,758	34,072	23,577	109,820	3,939	150		394,456	186,140	70,830	137,486
1973			1,585	128,495	12,068	24,164	21,196	31,513	170,895	8,457	262		398,635	142,148	45,360	211,127
1974			434	57,516	76,585	13,424	32,472	15,554	156,543	13,923	308		366,759	134,535	45,896	186,328
1975			162	48,295	55,647	16,989	27,362	37,907	234,145	4,847	212		425,566	104,104	44,351	277,111
1976			587	58,978	53,883	39,130	29,883	48,776	262,615	13,395	526		407,773	113,448	69,013	325,312
1977			3,569	98,710	17,229	21,790	19,233	21,992	171,303	11,805	1,026		366,657	119,508	41,023	206,126
1978			4,291	100,712	44,860	27,125	17,198	23,513	165,411	11,104	386		394,600	149,863	44,323	200,414
1979			790	29,751	20,921	15,924	18,293	41,273	142,241	6,865	248		275,968	51,124	34,217	190,627
1980			535	30,732	29,720	15,384	15,681	26,106	118,669	8,404	287		245,518	60,987	31,065	153,466
1981			1,853	41,917	21,239	13,262	13,667	32,519	154,696	6,288	209		285,650	65,009	26,929	193,712
1982			312	30,282	45,450	15,439	11,175	34,058	174,348	11,487	258		322,809	76,044	26,614	220,151
1983			144	25,540	31,154	12,793	10,665	25,524	116,879	20,458	677		243,834	56,838	23,458	163,198
1984			348	27,185	23,606	13,060	15,347	41,859	81,154	21,573	443		224,575	51,139	28,407	145,029
TOTAL	40	45	40,554	2,395,954	1,904,302	1,517,151	1,178,917	1,563,423	7,566,249	269,011	15,044		16,450,897	4,339,825	2,696,800	9,413,932
47-YEAR AVERAGE			863	50,978	40,517	32,280	25,083	33,264	160,984	5,724	320		350,019	92,337	57,379	200,296

TABLE 17

MONTHLY COUNT OF SOCKEYE SALMON
BONNEVILLE DAM - 1938-1984

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

TABLE 17 (Continued)

MONTHLY COUNT OF SOCKEYE SALMON
BONNEVILLE DAM - 1938 - 1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1968				54	372	74,226	33,245	199	101	9	1		108,207
1969				5	165	24,238	34,970	120	124	13	1		59,636
1970				5	269	22,977	46,062	1,147	290	12			70,762
1971					70	14,789	72,203	313	69	2	1		87,447
1972					614	16,505	37,939	1,254	9	2			56,323
1973					17	29,314	29,308	337	3				58,979
1974					14	8,073	35,407	340	3				43,837
1975					2	17,961	40,050	192	7				58,212
1976					94	22,532	20,661	297	26	1			43,611
1977				1	38	74,551	25,178	61					99,829
1978				1	2	12,442	5,884	101	6				18,436
1979					1	25,474	26,297	826	30				52,628
1980						22,949	35,764	164	4	1			58,882
1981					1	36,931	19,001	100	4				56,037
1982					12	20,731	29,207	264	4	1			50,219
1983					1	52,134	48,004	381	5	2			100,527
1984					6	106,982	45,141	500	5	1			152,635
TOTAL			76	538	7,866	1,510,619	2,630,373	39,939	2,537	132	32	1	4,192,100
47-Year Average					167	32,141	55,965	850	54	3			89,194

TABLE 18

MONTHLY COUNT OF COHO SALMON
BONNEVILLE DAM - 1938-1984

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

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

TABLE 18 (Continued)

MONTHLY COUNT OF COHO SALMON
BONNEVILLE DAM - 1938-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL (INCL. JACKS)	JACKS
1968						48	124	10,450	50,900	1,868	98		63,488	20,435
1969						38	443	4,671	41,176	2,998	52		49,378	25,216
1970						2	128	6,604	70,631	2,631	120		80,116	25,248
1971							57	7,292	58,235	9,753	652		75,989	22,172
1972							66	9,481	52,456	3,792	137		65,932	31,716
1973							636	12,656	33,736	6,715	866		54,609	28,760
1974							539	8,805	40,761	8,631	2,219		60,955	29,350
1975							56	5,373	39,167	11,892	1,819		58,307	25,535
1976							143	5,970	40,505	5,417	1,115		53,150	16,484
1977							55	1,134	15,163	2,582	474		19,408	10,083
1978				1			2	2,643	38,308	10,531	1,105		52,590	22,312
1979							68	7,324	28,732	7,583	1,621		45,328	15,716
1980							10	781	13,601	3,327	4,333		22,052	9,078
1981							4	3,162	23,962	3,108	274		30,510	8,575
1982							79	3,687	55,743	13,182	1,141		73,832	18,016
1983							51	313	7,237	5,020	2,553		15,174	10,256
1984							41	1,394	20,174	6,158	1,655		29,422	12,728
TOTAL	21	12	5	1		169	4,210	140,670	1,041,653	134,525	21,865	66	1,343,017	414,492
47-YEAR AVERAGE							90	2,993	22,163	2,862	461		28,575	8,819

** 17-YEAR AVERAGE

TABLE 19

MONTHLY COUNT OF STEELHEAD TROUT
BONNEVILLE DAM - 1938-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING JAN 1- MAY 31	SUMMER JUN 1- AUG 25	FALL AUG 26- DEC 31
1938					6,622	2,382	19,455	29,231	46,618	2,264	339	92	107,003	6,622	42,684	57,697
1939	23	19	570	8,110	1,587	1,490	36,681	38,062	33,891	1,264	216	119	122,032	10,309	69,787	41,936
1940	5	96	1,688	4,125	998	4,489	61,188	46,071	64,377	1,786	292	59	185,174	6,912	99,812	78,450
1941	37	76	1,641	6,392	1,518	996	21,940	29,600	50,542	3,980	1,063	304	118,089	9,664	48,445	59,980
1942	4	37	256	3,642	4,159	1,588	19,905	41,973	77,076	2,412	566	182	151,800	8,098	57,121	86,581
1943	14	18	654	3,374	4,698	1,564	7,755	29,894	41,051	2,444	573	94	92,133	8,758	32,461	50,914
1944	50	157	1,019	6,142	2,224	1,169	21,868	24,508	35,907	6,129	1,119	226	100,518	9,592	41,993	48,933
1945	1,003	1,078	3,008	4,685	1,557	1,109	24,537	40,593	40,194	1,925	302	142	120,133	11,331	61,354	47,448
1946	64	551	3,040	9,839	5,482	3,265	20,600	58,466	38,399	2,070	262	769	142,807	18,976	74,446	49,385
1947	197	321	1,968	6,889	2,025	1,595	28,134	40,819	50,025	2,905	443	123	135,444	11,400	63,635	60,409
1948	154	119	1,631	4,473	1,170	1,895	33,191	53,621	40,609	1,742	381	76	139,062	7,547	79,906	51,609
1949	1		1,689	3,293	1,712	1,264	34,314	54,281	20,786	1,161	686	98	119,285	6,695	84,067	28,523
1950	13	8	1,156	4,537	1,667	691	25,142	53,904	24,226	1,932	811		114,087	7,381	72,810	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	73,267	41,117
1965			211	1,516	1,419	4,265	89,405	29,506	37,529	1,971	631		166,453	3,146	117,414	45,893
1966			658	2,682	2,389	13,051	57,975	25,779	37,733	2,657	737		143,661	5,729	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

TABLE 19 (Continued)

MONTHLY COUNT OF STEELHEAD TROUT
BONNEVILLE DAM - 1938-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING JAN 1- MAY 31	SUMMER JUN 1- AUG 25	FALL AUG 26 DEC31
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		140,732	5,972	98,079	36,731
1970			244	1,267	1,331	4,208	30,866	46,307	27,073	1,909	305		113,510	2,842	75,264	35,404
1971			463	1,377	1,810	4,469	84,877	58,249	38,619	3,739	363		193,966	3,650	137,404	52,912
1972			492	2,562	2,137	3,444	59,933	48,223	65,523	3,432	140		185,886	5,191	102,036	78,659
1973			830	2,534	1,367	5,360	53,820	46,399	43,275	3,918	320		157,823	4,731	95,280	57,812
1974			1,292	4,127	5,547	6,349	57,212	44,266	14,654	3,080	527		137,054	10,966	73,436	52,652
1975			1,080	4,284	4,324	6,058	30,823	28,623	9,106	904	338		85,540	9,688	61,898	13,954
1976			1,285	3,459	3,677	9,130	38,907	44,204	21,084	1,953	478		124,177	8,421	83,949	31,807
1977			1,159	4,121	4,115	11,395	67,554	35,161	66,084	3,298	550		193,437	9,395	104,287	79,755
1978			1,750	3,327	4,587	10,883	25,284	25,637	30,461	2,168	334		104,431	9,664	54,524	40,243
1979			1,333	1,905	1,785	7,585	33,379	39,399	23,592	4,710	291		113,979	5,023	74,449	34,507
1980			1,139	3,378	1,409	7,790	28,448	51,073	32,277	3,233	507		129,254	5,926	79,084	44,244
1981			1,031	3,812	3,887	12,628	56,787	52,435	25,737	2,650	303		159,270	8,730	113,055	37,485
1982			1,239	4,188	5,335	8,636	39,159	51,329	44,456	3,146	152		157,640	10,762	92,397	54,481
1983			465	1,253	1,638	6,017	67,144	83,289	48,920	4,636	417		213,779	3,356	156,450	53,973
1984			582	2,106	4,256	14,454	92,501	93,866	102,887	4,467	468		315,587	6,944	106,955	201,688
TOTAL	1,565	2,486	44,097	146,973	109,500	236,261	2,311,141	2,108,696	1,804,382	118,401	21,965	2,291	6,907,758	304,621	4,190,256	2,412,881
46-YEAR AVERAGE			938	3,127	2,330	5,027	49,173	44,866	38,391	2,519	467		146,974	6,481	89,154	51,338

TABLE 20

MONTHLY COUNT OF SHAD AND PERCENT COUNTED OVER FISH LADDERS
BONNEVILLE DAM - 1938-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	PERCENT BY FISH LADDERS BRAD ISLAND	WASHINGTON SHORE
1938						39	3,184	1,502	527	21			5,273	58.1	41.9
1939					14	1,539	3,065	157	28				4,803	27.9	72.1
1940					48	12,931	9,178	72	1				22,230	42.3	57.7
1941					5	2,417	16,010	197	12	16			18,657	57.9	42.1
1942					2	38	11,341	1,473	5				12,859	70.3	29.7
1943						18	2,545	265	20				2,848	87.0	13.0
1944						287	16,568	248					17,103	62.8	37.2
1945						2,801	90,773	948	4				94,526	77.2	22.8
1946						3,895	16,073	415					20,383	44.3	55.7
1947					8	5,645	20,280	105	3				26,041	69.4	30.6
1948						8	6,458	1,953	2	1			8,422	69.1	30.9
1949						2,647	19,609	322	1				22,579	54.9	45.1
1950							7,265	548	3				7,816	92.7	7.3
1951						1,269	6,792	277	15				8,353	63.2	36.8
1952						487	2,595	45	4				3,131	54.8	45.2
1953						53	14,856	1,502	19				16,430	60.5	39.5
1954						34	3,848	1,136	11				5,029	57.5	42.5
1955						21	4,411	1,358	18				5,808	64.6	35.4
1956					1	67	6,838	1,168	11				8,085	27.9	72.1
1957						1,695	11,039	422	1	2			13,159	64.2	35.8
1958						3,885	6,257	59					10,201	49.1	50.9
1959					3	32	6,315	369	1				6,720	54.9	45.1
1960						35,259	57,443	594	72				93,368	53.2	46.8
1961						18,952	245,471	1,236	33	5			265,697	67.1	32.9
1962						43,689	387,554	4,657	82	4	2		435,988	55.1	44.9
1963					70	77,961	307,466	4,044	217	14			389,772	65.7	34.3
1964					19	3,203	236,321	13,008	121	2			252,674	63.6	36.4
1965					1	33,815	570,432	12,844	194	35	2		617,323	57.7	42.3
1966					94	181,187	367,643	7,988	545	51	5		557,513	58.9	41.1
1967			1	1		6,673	212,681	2,944	152	8			222,460	65.3	34.7

TABLE 20 (CONTINUED)

MONTHLY COUNT OF SHAD AND PERCENT COUNTED OVER FISH LADDERS
BONNEVILLE DAM - 1938-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	PERCENT BY FISH LADDERS BRAD ISLAND	WASHINGTON SHORE
1968					800	107,881	183,878	1,387	121	10	1		294,078	59.0	41.0
1969			2	5	158	233,018	81,159	2,846	163	7			317,358	58.0	42.0
1970				2	250	228,519	99,659	566	262	18			329,276	71.8	28.2
1971					30	34,345	154,215	951	55	1			189,597		
1972					38	16,689	192,608	5,301	88	1			214,725	52.6	47.4
1973					116,057	377,830	24,701	577	38	4			519,207	82.9	17.1
1974					7	6,122	91,302	1,496	17	1			98,945	5.1	94.9
1975					11	43,712	219,133	1,349	38	3			264,246	42.8	57.2
1976					4	123,053	179,994	2,112	49	7			305,219	43.2	56.8
1977					51,709	431,540	11,818	568	76	12			495,723	67.4	32.6
1978					30	802,110	57,997	991	33	5			861,166	72.4	27.6
1979					800	994,253	43,734	658	258	141	13		1,039,857	86.4	13.6
1980					1,460	766,473	170,705	685	51	15	1		939,390	81.3	18.7
1981				2	20,976	708,295	150,730	1,080	79	17			881,179	93.5	6.5
1982				1	6,888	655,037	117,325	914	37	9	1		780,212	82.8	17.2
1983					78,106	1,224,342	116,283	1,044	112	37	1		1,419,925		
1984					553	950,405	319,478	4,097	149	55			1,274,737	82.8	17.2
TOTAL			3	11	278,142	8,144,171	4,885,030	88,478	3,728	502	26		13,400,091		
47-YEAR AVERAGE					5,918	173,280	103,937	1,883	79	11			285,108		

TABLE 21
YEARLY TOTALS OF SALMONID FISH COUNTED OVER THE DALLES DAM
1957-1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	CHUM	PINK	TOTAL SALMONID
1957	312,678	129,361	90,201	6,793	75	4	539,112
1958	301,960	121,420	111,039	2,395	31	5	536,850
1959	207,461	156,090	86,259	2,709	25	9	452,553
1960	196,962	111,189	59,441	3,000	35	5	370,632
1961	201,335	134,572	16,689	2,139	-	4	354,739
1962	187,132	163,301	27,127	3,696	-	5	381,261
1963	180,969	118,957	56,931	3,716	23	3	360,599
1964	183,842	110,033	79,042	5,978	-	5	378,900
1965	195,049	141,852	44,279	17,468	1	3	397,852
1966	240,671	146,172	147,886	32,279	-	1	567,009
1967	280,112	121,614	120,589	32,015	1	4	554,335
1968	262,975	147,481	116,897	42,687	-	1	570,041
1969	314,258	112,529	37,226	17,054	-	1	481,068
1970	261,457	99,187	77,678	23,219	-	4	461,545
1971	250,528	151,348	76,103	29,061	-	3	507,043
1972	268,628	135,303	44,671	16,562	-	-	465,164
1973	280,945	100,082	52,303	11,152	-	1	444,483
1974	217,181	70,875	28,827	14,655	-	-	331,538
1975	217,283	57,675	43,198	13,976	-	-	332,132
1976	216,163	82,568	27,747	19,392	-	-	345,870
1977	224,950	133,882	86,252	10,021	-	-	455,105
1978	199,228	60,485	11,845	18,877	-	-	290,435
1979	150,647	83,364	32,791	8,726	-	4	275,532
1980	113,951	93,963	42,088	6,326	-	-	256,328
1981	135,176	113,268	35,447	6,941	-	1	290,833
1982	172,682	117,434	33,331	7,383	-	-	330,830
1983	156,132	170,673	84,202	3,457	1	-	414,464
1984	203,837	218,552	101,379	3,172	-	-	526,940
TOTAL	6,164,970	3,402,400	1,771,468	364,849	192	63	11,674,305
28-YEAR AVERAGE	220,178	121,514	63,267	13,030			416,939

TABLE 22

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER THE DALLES DAM

1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	9,327	23,888	9,990	12,406	23,235	105,786	19,205	-	-	203,837
STEELHEAD	-	-	-	846	894	3,715	52,600	36,513	107,377	16,607	-	-	218,552
SOCKEYE	-	-	-	-	-	62,500	38,128	745	6	-	-	-	101,379
COHO	-	-	-	-	-	-	-	52	2,523	597	-	-	3,172
TOTAL SALMONID	-	-	-	10,173	24,782	76,205	103,134	60,545	215,692	36,409	-	-	526,940
SHAD	-	-	-	-	344	658,229	524,182	7,137	104	6	-	-	1,190,002

TABLE 23
WATER TEMPERATURE AND STREAM FLOW DATA
THE DALLES DAM - 1984

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	118.6	5.0	36.0	221.2	.5	37.0	181.0	1.5	40.0
2	135.6	5.0	36.0	229.7	.5	39.0	194.3	1.5	40.0
3	149.4	5.0	35.0	215.5	1.0	38.0	212.7	2.0	40.0
4	169.5	5.0	36.0	174.0	1.4	38.0	218.8	2.2	40.0
5	181.4	1.0	36.0	167.4	2.0	38.0	190.1	2.3	41.0
6	199.3	1.0	36.0	224.0	1.6	38.0	188.9	2.8	41.0
7	201.6	1.0	36.0	220.6	1.2	38.0	202.5	3.0	41.0
8	201.1	1.0	36.0	220.4	.5	38.0	207.0	3.0	41.0
9	218.7	.5	37.0	226.9	1.0	38.0	193.2	2.8	41.0
10	203.2	.5	37.0	219.1	.9	38.0	179.8	2.8	42.0
11	190.4	.5	36.0	217.3	1.5	38.0	198.5	3.1	41.0
12	194.5	1.0	37.0	180.1	1.2	38.0	218.8	3.2	42.0
13	194.7	1.2	38.0	197.9	2.0	38.0	232.3	3.2	42.0
14	198.2	1.3	38.0	225.1	2.0	38.0	208.6	2.0	42.0
15	200.8	1.5	38.0	245.2	1.2	38.0	252.0	2.0	42.0
16	224.8	1.5	38.0	203.2	1.5	39.0	250.4	2.0	42.0
17	231.1	1.5	38.0	200.2	1.5	39.0	249.9	2.0	43.0
18	228.6	1.5	37.0	207.5	1.5	39.0	235.2	2.0	43.0
19	211.5	1.3	37.0	213.0	1.5	39.0	214.8	2.0	43.0
20	246.7	1.5	37.0	199.0	1.5	39.0	192.5	2.2	43.0
21	175.2	1.3	37.0	197.3	1.5	39.0	209.8	2.0	43.0
22	160.8	1.3	37.0	228.7	1.5	39.0	241.2	2.1	44.0
23	199.0	1.5	37.0	219.8	1.3	39.0	259.2	1.5	43.0
24	194.8	1.5	37.0	237.5	2.5	39.0	261.8	1.5	45.0
25	195.8	2.0	37.0	200.9	2.0	40.0	243.2	1.5	44.0
26	221.0	2.9	38.0	152.2	2.0	39.0	211.6	1.2	43.0
27	210.4	2.5	37.0	205.5	2.8	37.0	248.4	1.3	45.0
28	194.4	2.3	38.0	204.7	2.5	39.0	261.0	1.0	46.0
29	181.8	2.0	38.0	206.8	2.0	40.0	238.4	1.0	46.0
30	194.1	2.0	38.0				243.1	1.1	46.0
31	192.2	1.5	37.0				254.6	1.0	46.0
TOTALS	194.2			209.0			222.4		
AVERAGES									

TABLE 24

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - **APRIL 1984**

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	31							19		232.6	.0	1.0	46.0
2	27							17		213.4	.0	1.0	46.0
3	32							23		236.3	.0	1.3	46.0
4	47			1				24		235.6	.0	1.5	47.0
5	46			1				23		217.6	.0	1.5	47.0
6	68			1				30		230.6	8.5	1.8	48.0
7	90			3				36		255.6	16.7	1.5	48.0
8	187			6				36		236.3	16.7	1.7	48.0
9	162			6				38		231.7	16.5	1.5	48.0
10	168			4				14		255.4	17.0	1.6	48.0
11	104			1				28		261.4	16.7	1.3	48.0
12	101			1				25		243.1	16.9	1.4	48.0
13	126			2				17		288.9	17.2	1.5	48.0
14	138			5				24		239.9	56.7	1.5	47.0
15	244			6				48		237.2	119.1	1.5	48.0
16	241			16				39		284.1	44.6	1.5	48.0
17	171			16				26		275.8	36.8	1.5	48.0
18	331			11				32		315.8	61.4	1.5	49.0
19	297			10				61		321.2	70.1	2.0	49.0
20	422			10				51		311.6	108.3	1.5	50.0
21	384			15				341		358.9	163.3	1.8	50.0
22	294			5				23		333.3	129.1	1.3	50.0
23	386			11				34		330.8	49.6	1.3	50.0
24	263			7				33		326.6	43.6	1.2	48.2
25	483			16				16		331.5	71.8	1.5	48.2
26	578			24				21		327.6	38.6	1.7	50.6
27	876			31				23		328.6	50.5	2.0	49.6
28	850			40				19		280.6	25.8	1.5	48.6
29	1155			30				18		268.2	74.8	2.0	48.6
30	719			27				14		286.5	20.9	2.0	50.0
TOTAL	9021			306				846					
AVERAGE	301			11				28		276.6	43.0		

TABLE 25

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	779			38				17		307.4	17.6	2.0	50.0
2	1205			64				31		267.8	17.4	2.0	50.0
3	1201			56				33		286.7	33.3	1.6	50.0
4	1312			79				36		272.1	53.8	1.8	49.0
5	1718			119				37		234.5	46.8	2.0	49.0
6	1333			110				31		258.6	62.9	3.0	50.0
7	1396			134				29		257.3	51.9	1.8	51.0
8	1146			103				20	1	282.3	46.4	3.0	50.0
9	1348			126				33		254.9	42.5	1.7	50.0
10	588			62				25		313.9	58.6	2.5	51.0
11	722			87				26		325.9	63.8	1.6	51.0
12	971			106				28		278.1	56.5	2.0	51.0
13	857			129				29		258.4	52.5	2.0	52.0
14	804			129				35		300.8	61.1	2.1	52.0
15	451			99				31	1	359.4	71.5	1.7	52.0
16	443			99				31		360.7	66.5	1.8	53.0
17	480			225				41		348.9	67.3	1.7	53.0
18	424			69				17		338.6	65.4	1.7	54.0
19	322			81				10		337.4	64.2	1.5	54.0
20	387			67				20		305.5	60.3	1.8	54.0
21	351			88				31		320.8	59.4	1.7	54.0
22	313			111				23	2	337.7	60.1	1.5	54.0
23	280			85				35	4	348.9	59.6	2.1	54.0
24	408			102				29	10	360.4	45.3	1.5	54.0
25	349			73				22	2	358.9	47.6	2.0	55.0
26	265			56				19	10	323.6	44.8	1.7	57.0
27	307			90				44	2	284.7	56.2	2.0	54.0
28	232			74				29	24	302.0	58.6	1.7	55.0
29	183			68				28	54	325.3	66.2	2.0	55.0
30	208			71				41	133	340.3	62.1	1.9	55.0
31	250			55				33	101	370.5	59.5	2.0	56.0
TOTAL	21,033			2,855									
AVERAGE	678			92				29	29	310.4	54.2		

TABLE 26

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	174			42				38	325	360.9	63.3	1.5	56.0
2	228			45			1	43	348	363.4	63.7	1.5	55.8
3	202			47			1	50	564	340.1	70.5	1.5	55.9
4		191		47				80	1608	351.3	66.4	1.5	57.0
5		149		57			4	65	1610	341.5	72.6	2.5	57.0
6		135		35			8	63	2234	322.4	31.3	1.5	57.0
7		176		37			13	76	2355	322.6	38.7	2.0	57.0
8		179		31			36	78	2063	317.0	45.9	2.0	57.0
9		251		31			46	85	2309	294.0	45.9	2.0	57.0
10		256		46			76	59	2827	297.0	45.9	1.5	57.0
11		224		42			183	70	3113	290.6	46.0	1.5	57.0
12		217		53			304	76	5329	305.8	46.1	1.5	57.0
13		232		51			627	105	10,457	335.4	48.4	1.5	57.0
14		225		46			547	111	14,568	326.4	61.0	2.2	57.0
15		199		40			662	104	17,735	329.7	172 2	1.5	58.0
16		294		35			1091	148	15,605	356.7	170.5	2.2	58.0
17		228		47			1356	135	20,764	373.3	68.5	1.5	58.0
18		170		29			1739	107	34,976	371.5	67.6	2.0	58.0
19		185		58			2843	187	30,338	373.7	65.1	2.0	58.0
20		225		42			4542	143	48,222	369.9	63.8	1.7	58.0
21		267		54			3694	172	53,159	369.4	64.5	2.0	58.0
22		242		39			3265	156	39,220	353.9	64.9	1.5	60.0
23		352		92			4332	192	39,454	358.4	69.2	2.3	59.0
24		461		95			7088	216	53,422	345.6	65.9	1.9	59.0
25		515		111			7734	266	48,717	336.4	65.4	1.8	59.0
26		548		64			7037	176	56,120	345.3	71.2	2.0	59.0
27		550		86			5423	211	43,817	375.7	73.1	2.0	60.0
28		411		75			4265	167	43,885	363.8	123.3	2.0	68.0
29		504		87			3012	184	32,678	364.7	84.5	2.1	61.0
30		372		64			2571	152	30,407	353.5	3.2	2.5	61.0
TOTAL	604	7,758		1,628			62,500	3715	658,229				
AVERAGE	201	287		54			2,232	124	21,941	343.7	69.9		

TABLE 27

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		424		58			2,348	193	32,376	350.8	80.1	2.5	61.0
2		471		84			2,042	207	24,317	310.3	80.1	2.5	61.0
3		408		90			2,416	276	32,647	257.0	73.4	2.5	62.0
4		300		36			1,791	235	41,915	239.0	74.7	3.0	63.0
5		535		134			2,203	429	39,376	281.0	70.0	3.0	63.0
6		508		59			3,611	488	38,695	252.8	52.3	3.0	64.0
7		588		106			3,783	917	41,638	248.3	40.9	3.0	64.0
8		503		59			3,344	921	40,821	254.5	41.3	4.0	64.0
9		452		78			3,347	1141	43,084	200.5	30.1	4.0	65.0
10		475		51			2,297	1145	25,483	193.5	13.6	3.3	65.0
11		445		57			1,454	1200	22,836	196.9	13.5	3.5	65.0
12		416		82			1,535	1590	15,678	195.9	7.6	3.5	65.0
13		375		57			1,068	1942	23,322	203.6	.0	3.5	65.0
14		353		80			1,019	2008	14,087	197.5	.0	3.5	66.0
15		317		83			725	2054	16,165	184.9	.0	3.5	66.0
16		307		89			792	2339	12,056	202.8	.0	3.5	66.0
17		205		51			490	2588	12,736	205.3	.0	3.5	66.0
18		287		57			621	1734	1,734	184.4	.0	3.5	67.0
19		187		45			418	1974	1,974	190.8	.0	3.5	67.0
20		292		60			396	3158	3,158	174.1	.0	4.3	67.0
21		179		51			382	2429	2,429	163.2	.0	4.0	68.0
22		288		65			289	2714	2,714	155.8	.0	4.7	67.0
23		231		40			281	2258	2,258	136.8	.0	4.1	68.0
24		238		69			273	1761	1,761	135.7	.0	5.0	68.0
25		189		24			185	1373	1,373	140.9	.0	4.0	68.2
26		299		100			198	2645	2,645	139.6	.0	4.5	69.0
27		169		62			291	2317	2,317	168.9	.0	4.6	68.0
28		292		60			172	3105	3,105	179.4	.0	4.0	68.0
29		209		49			118	1583	1,583	143.6	.0	4.2	68.0
30		227		70			134	3202	3,202	138.3	.0	4.5	68.0
31		200		31			105	2674	2,674	158.9	.0	4.5	69.0
TOTALS		10,369		2,037			38,128	52,600	524,182				
AVERAGES		334		66			1,230	1,697	16,909	199.5	18.6		

TABLE 28

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - **AUGUST 1984**

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		264		48			150	3077	1207	144.6	.0	5.0	69.0
2		189		34			112	2810	806	139.2	.0	5.0	70.0
3		290		61			72	2749	684	140.2	.0	5.8	70.0
4			309	98	1		44	2702	538	111.2	.0	6.0	70.0
5			332	83	1		39	3111	432	101.5	.0	6.0	70.0
6			252	51	2		32	1976	433	107.2	.0	5.0	70.0
7			234	61			30	1544	324	160.2	.0	5.0	70.0
8			266	46	1	29	28	1297	653	179.8	.0	4.5	70.0
9			320	67			33	942	319	149.9	.0	4.5	70.0
10			396	58			21	895	194	138.7	.0	5.5	71.0
11			351	44	1		38	879	246	137.2	.0	5.5	71.0
12			529	92			11	1133	199	122.2	.0	5.0	71.0
13			422	87			58	962	163	136.5	.0	5.0	71.0
14			374	71			10	659	123	148.8	.0	5.0	71.0
15			204	31			22	534	140	139.3	.0	5.0	71.0
16			305	66			4	349	84	141.2	.0	4.8	71.0
17			330	86			9	381	61	153.4	.0	4.9	71.0
18			591	136			2	441	28	120.6	.0	5.0	71.0
19			656	168	3		9	663	39	139.2	.0	4.8	71.0
20			760	198			5	481	137	120.5	.0	4.8	70.0
21			402	150			7	294	111	125.9	.0	5.1	71.0
22			592	185			5	359	29	148.8	.0	5.0	71.0
23			479	105			1	396	18	144.9	.0	4.5	71.0
24			352	71	1		2	295	13	147.1	.0	5.0	71.0
25			743	133	1		1	937	43	146.1	.0	4.6	71.0
26			595	173	2			814	46	126.5	.0	4.5	71.0
27			929	147	1			663	30	131.6	.0	4.9	71.0
28			971	213				809	13	129.3	.0	4.5	71.0
29			2363	398	3			967	12	133.2	.0	4.7	70.0
30			1676	531	3			1128	5	154.5	.0	4.7	70.0
31			2281	786	3			2266	7	115.5	.0	4.0	70.0
TOTAL		743	18,014	4,478	23	29	745	36,513	7,137				
AVERAGE		248	643	144	2	29	30	1178	230	136.6	.0		

TABLE 29

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			2410	980	8	1		3287	6	114.8	.0	5.0	69.0
2			2322	812	18	6		4288	1	120.8	.0	4.8	68.0
3			1766	1033	19	5	1	2822	22	98.0	.0	5.0	68.0
4			2760	1204	40	43		3095	4	110.3	.0	5.0	69.0
5			3682	1253	46	36		2804		100.7	.0	5.0	69.0
6			3276	1482	72	48		2133		119.1	.0	5.0	69.0
7			3637	982	155	55		5190	1	117.9	.0	4.5	68.0
8			4887	1663	140	54		6452	13	123.5	.0	4.5	68.0
9			4894	960	75	29		5851	5	99.1	.0	5.0	68.0
10			2462	1133	128	47		5385	7	107.5	.0	4.5	68.0
11			1483	558	36	14		2543	4	126.1	.0	5.0	68.0
12			3891	1336	62	36		4335	3	147.8	.0	5.0	67.0
13			3248	1557	44	25		4957	9	123.0	.0	5.0	67.0
14			2357	1629	45	39		4831		111.5	.0	5.0	67.0
15			2400	2732	187	88		9467	8	120.8	.0	5.0	67.0
16			2223	2323	76	51		10,253		118.1	.0	4.0	67.0
17			702	1583	57	36		4240		125.8	.0	4.5	66.0
18			541	1105	21	17		1443	1	131.1	.0	4.5	66.0
19			817	1346	43	26		1429	1	120.6	.0	4.5	66.0
20			1064	1796	39	24		1781	2	122.8	.0	4.0	66.0
21			1776	2432	33	16		2219	5	115.1	.0	4.3	66.0
22			1480	2579	33	23		4630	3	113.7	.0	4.5	65.0
23			1661	2266	37	22		3257	1	89.2	.0	4.2	65.0
24			601	1494	28	11		2222	4	111.4	.0	5.7	64.0
25			993	2349	61	42		2413		115.1	.0	5.5	64.0
26			597	1472	47	24		2187		130.6	.0	5.2	65.0
27			459	1504	20	22		900		113.5	.0	5.6	66.0
28			618	1574	18	13	1	1117		120.9	.0	5.6	65.0
29			553	1486	29	19		771		118.2	.0	5.8	65.0
30			445	1158	20	14		1075		87.9	.0	5.6	64.0
TOTAL			60,005	45,781	1,637	886	6	107,377	104				
AVERAGE			2,000	1,526	55	30	3	3,579	5	115.8	.0		

TABLE 30

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			651	1804	46	32		1494		105.5	.0	6.0	64.0
2			318	854	4	9		1329		146.2	.0	5.6	64.0
3			551	1384	2	15		2068		147.3	.0	5.6	64.0
4			298	880	3	12		1132		160.7	.0	5.0	64.0
5			356	841	5	7		1120		133.3	.0	5.0	64.0
6			402	777	8	18		731		96.5	.0	5.0	64.0
7			350	771	10	12		627		87.9	.0	5.5	63.0
8			261	555	6	20		507		101.2	.0	5.0	62.0
9			227	809	6	17		590		112.2	.0	5.0	62.0
10			223	602	4	18		491	4	116.0	.0	5.0	62.0
11			213	520	6	25		403		133.4	.0	5.0	62.0
12			217	429	6	19		344		130.8	.0	5.0	61.0
13			123	420	5	10		318		114.1	.0	5.0	62.0
14			108	279	13	15		638		118.8	.0	5.0	60.0
15			93	248	8	11		738	1	136.1	.0	5.0	60.0
16			161	331	9	18		756		135.3	.0	5.0	60.0
17			36	139	5	10		347		102.7	.0	5.0	60.0
18			87	227	8	17		371		114.0	.0	4.0	59.0
19			32	144	5	10		140	1	158.4	.0	4.0	58.0
20			96	214	8	14		248		106.2	.0	3.5	58.0
21			44	165	6	15		180		126.0	.0	4.0	57.0
22			95	219	6	16		265		146.4	.0	4.0	57.0
23			21	102	6	5		164		139.2	.0	4.2	56.0
24			61	236	1	6		190		124.0	.0	4.2	56.0
25			73	176		6		147		119.1	.0	4.0	56.0
26			39	116	1	4		187		160.1	.0	4.0	56.0
27			74	129	3	8		275		143.1	.0	4.3	54.0
28			74	115	3	6		367		114.3	.0	4.0	56.0
29			71	112	15	13		225		106.5	.0	4.5	56.0
30			50	113	2	8		146	0	125.8	.0	4.0	56.0
31			38	51	1			69		138.9	.0	4.0	56.0
TOTAL			5443	13,762	201	396		16,607	6				
AVERAGE			176	444	7	13		536	2	125.8	.0		

TABLE 31
WATER TEMPERATURE AND STREAM FLOW DATA
THE DALLES DAM - 1984

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	133.1	4.8	53.0	170.5	3.9	43.0
2	142.0	4.0	52.0	173.9	4.0	43.0
3	131.1	4.7	52.0	169.3	4.0	46.0
4	100.9	3.0	52.0	170.9	4.0	45.0
5	113.6	3.2	51.0	152.7	3.5	45.0
6	122.0	4.2	51.0	168.4	3.5	45.0
7	123.9	4.5	51.0	163.2	4.4	45.0
8	127.7	4.9	51.0	149.1	4.5	45.0
9	151.3	4.9	51.0	151.0	4.8	44.0
10	150.8	4.0	50.0	176.1	4.0	44.0
11	122.0	4.9	50.0	162.5	6.0	44.0
12	118.6	5.0	50.0	160.0	4.0	43.0
13	127.9	5.0	50.0	162.3	4.0	43.0
14	126.5	4.5	50.0	154.0	5.0	42.0
15	165.2	2.0	50.0	148.2	5.0	42.0
16	169.9	4.0	49.0	150.2	6.4	42.0
17	161.5	4.0	49.0	192.2	6.4	42.0
18	137.7	4.0	49.0	170.5	6.2	42.0
19	140.8	4.0	49.0	145.9	4.0	42.0
20	135.7	4.0	49.0	197.4	3.9	41.0
21	165.2	4.0	49.0	166.7	3.4	40.0
22	106.9	4.0	49.0	166.3	2.2	39.0
23	137.6	4.5	48.0	131.0	2.5	39.0
24	136.4	4.5	48.0	116.3	3.0	39.0
25	138.7	4.5	48.0	112.2	3.0	39.0
26	128.1	4.0	47.0	140.0	3.0	39.0
27	141.9	4.0	47.0	143.6	3.0	39.0
28	138.4	4.0	47.0	144.7	3.0	39.0
29	136.9	4.1	47.0	163.5	3.2	39.0
30	173.3	4.0	47.0	147.8		
31				131.0	3.5	39.0

TABLE 32

PEAK DAYS OF FISH MIGRATION
THE DALLES DAM - 1957-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO		CHUM		SHAD	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1957	May 1	11,098	Jun 21	8,066	Sep 7	4,353	Jul 31	3,368	Jun 25	4,753	Sep 16	500	Nov 22	12	Jul 13	629
1958	May 10	5,407	Jun 19	4,134	Sep 17	9,694	Sep 15	5,409	Jul 9	6,346	Sep 4, 5	174	Oct 31	4	Jun 26	336
1959	Apr 26	2,202	Jun 24	2,882	Sep 16	4,228	Jul 27	4,784	Jul 10	6,583	Sep 13	254	Nov 24	4	Jul 20	400
1960	May 4	4,414	Jun 16	4,827	Sep 7	3,336	Jul 28	3,144	Jun 25	3,661	Sep 3	258	Nov 3	4	Jul 3	4,934
1961	Apr 30	5,762	Jun 22	2,093	Sep 7	4,251	Sep 8	6,030	Jun 29	1,199	Sep 8	159	None		Jul 6	9,172
1962	Apr 28	4,104	Jun 17	3,005	Sep 3	3,463	Sep 10	5,731	Jul 8	1,511	Sep 16	227	None		Jul 15	14,039
1963	May 2	2,777	Jun 17	1,575	Sep 7	5,032	Jul 31	4,075	Jul 2	3,930	Sep 17	413	Oct 24	5	Jul 6	9,917
1964	Apr 26	3,351	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 13	2,155	Jun 26	2,115	Sep 10	7,726	Jul 27	5,217	Jul 2	3,866	Sep 13	841	Oct 23	1	Jul 6	24,203
1966	Apr 18	5,607	Jul 1	2,004	Sep 18	3,275	Jul 19	3,242	Jul 1	8,436	Sep 4	1,743	None		Jul 12	15,926
1967	Apr 23	5,320	Jul 2	3,444	Sep 17	8,273	Sep 18	4,427	Jul 8	9,551	Sep 9	3,061	Sep 30	1	Jul 8	9,733
1968	Apr 24	5,129	Jun 30	2,054	Sep 10	5,299	Aug 31	4,634	Jun 28	10,962	Sep 7	2,895	None		Jul 6	14,582
1969	May 10	6,638	Jun 21	3,633	Sep 13	8,182	Sep 7	2,725	Jul 5	2,185	Sep 18	849	None		Jun 22	32,588
1970	Apr 18	4,557	Jun 27	1,618	Sep 13	9,321	Sep 11	4,087	Jul 4	3,859	Sep 13	1,746	None		Jun 27	20,903
1971	Apr 30	4,961	Jul 4	1,734	Sep 11	8,072	Sep 4	7,004	Jul 9	5,673	Sep 6	2,542	None		Jul 18	13,921
1972	Apr 25	7,510	Jul 8	1,879	Sep 11	7,910	Sep 18	5,473	Jul 7	2,554	Sep 16	1,367	None		Jul 7	18,477
1973	Apr 21	10,513	Jul 2	991	Sep 9	10,512	Sep 8	2,803	Jul 3	3,394	Sep 9	729	None		Jun 6	40,725
1974	May 9	2,917	Jul 6	1,313	Sep 11	7,276	Jul 21	1,472	Jul 5	2,385	Sep 11	745	None		Jul 7	15,189
1975	May 11	2,331	Jul 16	1,356	Sep 7	7,633	Jul 28	1,363	Jul 6	4,111	Sep 13	788	None		Jul 8	27,816
1976	Apr 30	2,959	Jul 4	1,125	Sep 14	7,421	Jul 27	1,786	Jul 1	1,720	Sep 16	1,328	None		Jul 3	29,617
1977	Apr 17	5,162	Jun 25	1,259	Sep 11	4,967	Sep 10	3,890	Jun 26	6,128	Sep 16	568	None		Jun 10	72,772
1978	Apr 23	4,324	Jul 4	10,043	Sep 14	4,543	Sep 13	2,043	Jun 27	803	Sep 13	840	None		Jun 9	71,286
1979	Apr 28	1,149	Jun 27	811	Sep 13	4,744	Aug 31	1,956	Jun 27	1,872	Sep 15	491	None		Jun 24	93,494
1980	Apr 29	1,442	Jun 29	814	Sep 9	2,598	Sep 13	2,034	Jul 6	2,724	Sep 12	391	None		Jun 21	69,478
1981	Apr 26	1,781	Jul 1	704	Sep 6	3,693	Jul 29	2,813	Jun 28	2,845	Sep 8	472	None		Jul 12	63,109
1982	May 4	1,819	Jun 6	490	Sep 6	4,754	Jul 9	10,921	Jul 1	1,575	Sep 21	398	None		Jun 20	102,847
1983	Apr 21	1,379	Jun 26	407	Sep 16	3,510	Sep 7	4,008	Jul 2	7,769	Sep 19	244	None		Jun 22	128,914
1984	May 9	1,348	Jul 7	588	Sep 9	4,894	Sep 16	10,253	Jun 25	7,734	Sep 15	275	None		Jun 26	56,120

TABLE 33

MONTHLY COUNT OF CHINOOK SALMON
THE DALLES DAM - 1957-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING JAN 1- JUN 3	SUMMER JUN 4- AUG 3	FALL AUG 4- DEC 31	JACKS
1957			22	42,161	59,410	86,096	35,643	28,828	56,753	3,564	201		312,678	109,723	116,661	86,294	37,374
1958			114	8,268	47,862	59,955	24,381	17,211	141,262	2,788	119		301,960	61,747	80,139	160,074	19,747
1959			8	16,771	32,634	27,799	42,817	20,142	65,229	2,022	39		207,461	50,874	71,362	85,225	39,857
1960				17,073	40,091	52,577	22,549	15,225	46,453	2,720	274		196,962	58,406	75,315	63,241	30,847
1961				43,822	35,059	24,478	24,596	16,866	53,371	3,143			201,335	79,183	50,824	71,328	35,409
1962				33,069	35,629	34,488	21,515	13,461	46,135	2,835			187,132	69,139	57,007	60,986	17,835
1963				19,119	33,207	25,063	20,414	21,865	57,248	4,053			180,969	52,937	47,333	80,699	54,749
1964			340	35,551	24,447	16,801	37,697	17,452	49,811	1,743			183,842	60,691	56,360	66,791	30,900
1965			190	17,870	24,930	17,900	31,072	25,119	74,904	3,064			195,049	43,617	50,527	100,905	67,552
1966			1,068	72,267	22,837	25,530	33,712	14,978	65,380	4,899			240,671	96,628	61,062	82,981	36,482
1967				48,744	22,817	24,718	45,346	23,927	107,427	7,133			280,112	71,976	72,582	135,554	98,817
1968			100	52,144	45,057	32,827	33,272	22,361	72,209	4,800	205		262,975	98,742	67,391	96,842	64,644
1969			65	19,025	80,162	33,432	27,750	29,330	118,890	5,604			314,258	100,482	61,978	151,798	96,244
1970				53,370	29,670	22,903	23,318	34,906	93,633	3,657			261,457	83,549	48,115	129,793	85,471
1971				28,227	44,181	22,011	29,655	16,190	103,370	6,894			250,528	73,655	51,847	125,026	75,329
1972				68,955	33,508	17,354	29,756	21,828	91,666	5,561			268,628	103,107	48,660	116,861	81,668
1973				94,334	15,040	19,548	19,181	23,341	101,771	7,730			280,945	111,088	38,774	131,083	72,088
1974				13,415	41,902	7,141	22,709	13,964	103,804	14,246			217,181	56,397	30,273	130,511	79,840
1975				18,526	32,869	12,155	26,447	28,973	90,193	8,120			217,283	52,483	39,062	125,738	74,418
1976				20,266	35,434	17,828	20,129	17,278	90,933	14,295			216,163	56,570	38,733	120,860	74,275
1977				72,726	16,672	22,084	22,059	12,266	69,927	9,216			224,950	90,373	44,378	90,199	55,067
1978				52,425	30,472	19,477	15,978	11,251	57,786	11,839			199,228	84,924	34,396	79,908	32,503
1979				13,993	12,569	14,310	17,687	20,458	61,757	9,516	357		150,647	27,297	32,298	91,052	42,886
1980				12,434	15,441	7,948	12,832	12,881	43,675	8,740			113,951	28,237	21,133	64,581	20,016
1981				24,227	16,335	8,491	10,779	15,802	53,840	5,702			135,176	41,160	19,676	74,340	33,919
1982				10,569	33,296	10,058	9,554	17,466	79,487	12,252			172,682	44,750	19,342	108,590	60,165
1983				13,043	21,475	7,699	6,299	10,295	47,488	8,509			114,808	35,151	13,796	65,861	42,402
1984				9,021	21,033	8,362	10,369	18,757	60,005	5,443			132,990	30,658	18,870	83,462	70,847
TOTAL			1,907	931,415	904,039	679,033	677,516	542,421	2,104,407	180,088	1,195		6,022,021	1,873,544	1,367,894	2,780,583	1,531,351
28-YEAR AVERAGE				33,265	32,287	24,251	24,197	19,372	75,157	6,432			215,072	66,912	48,853	99,307	54,691

TABLE 34

MONTHLY COUNT OF SOCKEYE SALMON
THE DALLES - 1957-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1957					125	33,476	54,294	2,081	221	4			90,201
1958					29	28,854	80,324	1,583	248	1			111,039
1959					413	7,176	76,347	2,245	77	1			86,259
1960					2	36,907	22,228	297	7				59,441
1961					66	5,863	10,629	116	15				16,689
1962					55	8,333	18,545	180	14				27,127
1963					199	17,914	38,633	185	-				56,931
1964					23	9,984	68,205	758	72				79,042
1965					184	11,023	31,622	1,438	12				44,279
1966					65	36,539	109,167	2,106	9				147,886
1967					114	15,713	103,862	892	8				120,589
1968					5	77,878	38,542	462	10				116,897
1969					22	15,165	21,933	102	3	1			37,226
1970					1	18,309	56,903	2,387	75	3			77,678
1971					-	8,887	66,841	369	6				76,103
1972					-	9,276	34,924	466	5				44,671
1973					8	19,510	32,674	105	6				52,303
1974					4	3,935	24,790	98	-				28,827
1975					-	7,679	35,291	225	2	1			43,198
1976					1	10,988	16,637	121	-				27,747
1977					5	60,049	26,146	52	-				86,252
1978					24	7,158	4,559	104	-				11,845
1979					-	14,750	17,734	307	-				32,791
1980					-	11,096	30,046	927	19				42,088
1981					-	17,692	17,686	68	1				35,447
1982					-	11,430	21,742	144	15				33,331
1983					-	34,684	49,302	196	19	1			84,202
1984					-	62,500	38,128	745	6				101,379
TOTAL					1,345	602,768	1,147,734	18,759	850	12			1,771,464
28-YEAR AVERAGE					48	21,527	40,991	670	30				63,267

TABLE 35

MONTHLY COUNT OF COHO SALMON
THE DALLES - 1957 - 1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	JACKS
1957							220	605	5,615	342	11		6,793	
1958								96	2,132	161	6		2,395	
1959								46	2,428	234	1		2.709	
1960								475	2,288	227	10		3,000	
1961							4	5	1,898	232			2,139	
1962							5	258	3,194	239			3,696	
1963							2	361	2,931	422			3,716	
1964								506	4,723	749			5,978	
1965							7	200	13,064	4,197			17,468	
1966							225	3,850	25,476	2,728			32,279	
1967							192	494	27,860	3,469			32,015	20,456
1968							372	3,319	36,568	2,346	82		42,687	13,035
1969							412	970	13,179	2,493			17,054	11,218
1970							96	2,064	19,983	1,076			23,219	11,327
1971							1	1,589	26,066	1,405			29,061	11,174
1972							3	1,090	14,564	905			16,562	10,272
1973								793	9,443	916			11,152	5,256
1974								522	10,715	3,418			14,655	9,054
1975								465	10,356	3,155			13,976	8,534
1976								608	14,609	4,175			19,392	13,083
1977							1	91	8,131	1,798			10,021	6,096
1978								355	13,069	5,453			18,877	13,533
1979								211	7,109	1,367	39		8,726	4,836
1980								287	5,064	975			6,326	2,970
1981								295	6,061	585			6,941	4,405
1982								336	5,792	1,255			7,383	3,047
1983								65	2,341	1,051			3,457	2,254
1984								52	2,523	597			3,172	1,311
TOTAL							1,540	20,008	297,182	45,970	149		364,849	151,861
28-YEAR AVERAGE								715	10,614	1,642			13,030	8,437**

* Total Including Jacks
** 18-Year Average Coho "Jacks"

TABLE 36

MONTHLY COUNT OF STEELHEAD TROUT
THE DALLES DAM - 1957-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SPRING & SUMMER RUN TOTAL *	SEP	OCT	NOV	DEC	TOTAL
1957			1,603	951	977	4,782	45,445	33,319	87,077	35,396	6,545	343		129,361
1958			122	274	1,898	4,906	20,384	11,442	39,026	75,036	6,846	512		121,420
1959			1	541	502	2,227	46,271	60,841	110,383	41,026	4,502	179		156,090
1960				289	557	2,591	28,218	32,667	64,322	42,447	4,021	399		111,189
1961				305	307	1,396	21,906	17,850	41,764	87,344	5,464			134,572
1962				528	252	1,068	36,609	31,507	69,964	87,463	5,874			163,301
1963				153	451	1,361	30,485	25,360	57,810	48,066	13,081			118,957
1964			50	369	127	493	36,773	31,742	69,554	38,197	2,282			110,033
1965			36	502	484	896	60,522	21,132	83,572	53,389	4,091			141,052
1966		25	788	933	600	3,816	52,975	26,382	85,519	53,721	6,932			146,172
1967				258	183	435	27,914	22,746	51,536	56,082	13,996			121,614
1968			23	691	344	973	20,974	58,866	81,871	57,666	7,456	488		147,481
1969			54	953	414	1,442	33,952	22,963	59,778	44,146	8,605			112,529
1970				337	172	733	15,905	32,752	49,899	44,823	4,465			99,187
1971				408	233	821	40,712	31,812	73,986	69,602	7,760			151,348
1972				463	159	604	35,569	30,631	67,426	63,748	4,129			135,303
1973				723	326	1,981	29,067	25,437	57,534	38,017	4,531			100,082
1974				529	1,362	1,859	24,779	21,835	50,364	15,059	5,452			70,875
1975				1,018	1,334	1,973	18,046	20,531	42,902	11,519	3,254			57,675
1976				768	1,604	3,357	22,021	30,386	58,136	/21,586	2,846			82,568
1977				1,666	1,332	5,038	42,859	13,022	63,917	61,678	8,287			133,882
1978				834	1,378	3,459	13,493	11,457	30,621	26,189	3,675			60,485
1979				478	244	1,942	23,054	21,974	47,692	20,961	14,079	632		83,364
1980				2,885	790	2,134	15,114	30,755	51,678	34,447	7,838			93,963
1981				1,389	1,632	3,768	34,242	36,537	77,568	26,837	8,863			113,268
1982				729	1,289	2,710	22,607	31,410	58,745	49,050	9,639			117,434
1983				466	324	1,492	37,029	73,111	112,422	75,210	8,989			196,621
1984				846	894	3,715	52,600	36,513	94,568	107,377	16,607			313,120
TOTAL		25	2,677	20,287	20,169	61,972	889,525	819,002	1,813,657	1,386,082	201,109	2,553		3,497,969
28-YEAR AVERAGE				725	720	2,213	31,769	29,250	64,773	49,503	7,182			124,927

* Subtotal through 31 August

TABLE 37

YEARLY TOTALS OF SALMONID FISH COUNTED OVER JOHN DAY DAM
1968 - 1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	TOTAL SALMONID
1968	233,654	121,256	87,847	38,233	480,990
1969	276,051	86,348	39,847	13,589	415,835
1970	222,506	82,440	78,133	19,543	402,622
1971	193,881	115,977	72,232	40,830	422,920
1972	225,631	141,628	51,793	17,533	436,585
1973	249,492	101,440	64,744	13,359	429,035
1974	167,888	43,756	33,121	14,651	259,416
1975	159,079	32,651	50,774	6,305	248,809
1976	175,911	59,808	30,446	5,806	271,971
1977	194,931	102,558	85,701	1,123	384,313
1978	174,852	44,188	13,778	8,355	241,173
1979	118,154	55,877	43,630	5,061	222,722
1980	100,664	78,199	50,675	1,924	231,462
1981	114,359	95,172	46,146	2,562	258,239
1982	144,082	108,603	37,970	4,063	294,718
1983	139,706	154,697	89,810	1,640	385,853
1984	188,770	199,833	109,815	2,065	500,483
TOTAL	3,079,611	1,624,431	986,462	196,642	5,887,146
17 YEAR AVERAGE	181,154	95,555	58,027	11,567	346,303

TABLE 38

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER JOHN DAY DAM
1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	4,375	25,977	9,768	12,893	16,314	96,379	22,255	809	-	188,770
STEELHEAD	-	-	-	3,286	1,787	2,148	21,442	20,172	99,110	46,044	5,844	-	199,833
SOCKEYE	-	-	-	-	-	57,609	50,957	1,231	16	2	-	-	109,815
COHO	-	-	-	-	-	-	-	4	1,725	326	10	-	2,065
CHUM													
PINK	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	-	7,661	27,764	69,525	85,292	37,721	197,230	68,627	6,663	-	500,483
SHAD	-	-	-	-	38	224,506	357,117	4,325	28	-	1	-	586,015

TABLE 39

WATER TEMPERATURE AND STREAM FLOW DATA
JOHN DAY - 1984

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	118.1	5.5	34.8	224.0	1.0	37.6	184.0	2.3	38.8
2	134.2	3.0	34.7	236.2	1.1	37.7	194.6	2.7	38.8
3	145.6	3.5	34.6	222.4	1.1	37.4	216.3	1.2	38.9
4	162.5	3.0	34.6	174.9	1.0	37.2	226.9	2.2	39.6
5	175.7	2.7	34.8	173.3	1.5	37.0	194.1	2.5	39.9
6	194.6	1.0	34.9	231.6	1.0	36.9	193.8	1.5	39.7
7	202.4	2.9	35.1	222.4	3.0	36.8	202.3	1.5	39.8
8	197.8	1.0	35.4	229.4	1.5	36.8	213.2	1.5	39.9
9	221.9	1.0	35.5	235.9	1.5	36.9	195.4	2.0	40.1
10	203.4	1.0	35.8	225.3	2.0	36.8	183.0	1.5	40.4
11	191.0	2.9	36.3	227.5	2.0	36.9	202.4	2.5	40.9
12	192.8	2.6	36.7	183.2	2.0	36.9	223.3	2.0	40.1
13	194.1	2.2	37.1	195.2	2.0	37.0	234.8	1.5	41.1
14	199.7	2.0	36.8	233.9	1.5	36.9	208.5	1.5	41.3
15	203.6	2.4	36.8	252.9	2.5	37.3	263.8	1.5	41.4
16	208.1	2.4	36.6	202.9	2.5	36.9	252.8	1.5	41.5
17	237.8	3.0	36.4	201.0	1.0	36.9	249.1	1.0	42.1
18	225.3	1.3	36.1	211.1	2.4	37.2	237.9	1.2	42.5
19	225.1	2.9	35.9	213.2	3.5	37.8	212.7	1.0	42.5
20	251.2	.9	36.0	202.8	2.8	38.1	192.5	1.2	42.6
21	178.1	1.9	35.8	198.4	1.8	38.1	210.0	1.5	42.5
22	159.9	1.7	35.7	233.5	2.0	38.0	240.7	1.0	42.7
23	200.8	2.9	35.8	223.1	2.5	38.2	265.4	1.2	43.1
24	196.4	1.7	35.9	244.2	2.8	38.2	261.8	.5	43.5
25	199.2	2.5	36.0	204.8	2.5	38.1	243.9	1.0	43.6
26	221.8	3.9	35.9	151.6	3.4	38.1	210.4	1.0	43.9
27	215.4	3.0	36.1	208.2	3.2	38.3	255.1	1.0	44.1
28	198.2	1.7	36.5	207.6	2.0	38.3	265.9	1.0	44.1
29	188.0	2.0	36.7	210.1	1.5	38.6	246.0	1.0	44.1
30	197.6	.9	36.9				246.1	1.5	44.3
31	198.6	1.5	37.0				257.3	.8	44.6
TOTALS AVERAGES	194.8			213.1			225.3		

TABLE 40

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	1							96		237.0	2.0	.8	44.3
2	16			16				149		216.2	34.4	.9	45.2
3	1							126		231.3	93.5	1.4	45.6
4	4							102		240.9	19.0	1.2	45.9
5	6			1				129		219.3	18.9	1.2	46.1
6	17							119		230.3	18.4	1.0	46.3
7	9							237		259.8	35.7	1.0	46.6
8	16							126		238.4	36.5	1.5	46.7
9	32							121		232.2	34.5	1.3	46.7
10	66			1				119		260.7	33.7	1.3	46.0
11	73			1				71		266.6	33.1	1.0	46.0
12	46							76		248.4	32.8	1.1	45.8
13	50			1				68		291.4	84.1	1.3	45.9
14	27							128		240.6	127.9	1.5	46.1
15	37			3				96		249.5	125.1	1.5	46.4
16	59			1				185		284.3	86.5	1.0	47.3
17	168			8				232		276.6	69.6	1.0	47.6
18	75			3				139		330.6	138.7	1.0	47.5
19	64							102		327.6	142.6	1.2	48.1
20	113			5				111		317.6	120.3	1.0	48.5
21	85			2				49		360.0	146.3	1.1	48.7
22	100			1				96		338.0	113.6	1.5	48.6
23	128			3				40		347.7	92.1	1.1	48.1
24	273			6				110		340.6	74.7	1.5	48.2
25	224			3				24		338.6	104.4	1.2	51.4
26	297			7				137		349.8	93.2	1.2	
27	326			7				28		341.2	95.5	1.5	48.2
28	649			13				110		290.7	36.4	2.0	48.0
29	528			11				75		278.4	68.9	2.1	48.0
30	776			16				85		303.5	34.5	2.0	47.9
TOTALS	4266			109				3286					
AVERAGES	142			5				110		282.9.	71.6.		

TABLE 41

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	348			15				42		315.7	33.6	2.0	47.9
2	856			44				74		281.7	33.6	2.0	48.0
3	1145			41				80		301.9	45.5	2.0	48.5
4	1837			63				103		272.0	44.3	1.7	48.9
5	1995			67				78		250.7	46.9	2.1	49.1
6	864			53				67		264.4	56.4	1.5	49.3
7	1646			69				123		268.0	51.5	1.1	49.2
8	1090			68				72		290.9	51.6	1.5	49.3
9	1234			101				48		267.9	49.4	2.2	49.5
10	1460			97				63		328.3	61.7	1.6	49.5
11	757			76				36		351.3	66.4	2.1	49.7
12	737			81				54		293.4	53.6	2.0	49.7
13	950			94				44		276.7	57.0	1.9	50.1
14	892			120				72		326.3	55.0	2.0	50.9
15	1019			123				64		376.0	88.0	1.5	51.2
16	794			78				24		384.0	89.4	1.0	51.7
17	489			60				57		364.2	85.7	1.0	52.1
18	450			66				38		363.2	79.2	1.5	52.4
19	326			72				50		354.1	70.3	1.5	51.7
20	413			84				55		318.8	64.1	1.3	51.7
21	559			105				56		338.6	69.0	1.5	52.7
22	633			90				64	1	362.2	69.5	1.6	53.1
23	613			136				37		374.7	67.9	1.5	53.9
24	363			71				49		378.8	69.2	1.5	55.1
25	323			57				47		385.3	83.8	1.7	52.7
26	282			68				30		341.7	75.7	1.8	52.7
27	242			71				42		296.9	89.5	1.5	53.1
28	307			74				47		320.0	91.1	1.4	53.2
29	381			80				45	6	347.2	98.6	1.3	53.9
30	310			77				73	15	358.3	99.0	1.3	55.1
31	299			62				53	16	387.3	108.6	2.5	55.4
TOTALS	23614			2363				1787	38				
AVERAGES	762			76				14	9	327.1	67.9		

TABLE 42

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	280			61				39	43	371.5	123.0	2.5	58.8
2	146			43				37	9	385.7	143.2	2.5	58.3
3	70			27				33	38	358.9	131.7	2.2	58.1
4	146			38				38	159	367.9	128.1	1.5	58.3
5	259			75			5	46	147	361.9	129.1	2.0	58.6
6		278		64			4	50	452	339.1	111.2	2.0	59.0
7		290		49			5	60	465	342.4	103.7	2.0	55.6
8		146		28			15	44	298	332.3	102.0	1.5	55.7
9		237		68			42	54	341	314.1	90.1	1.5	55.7
10		164		24			51	50	638	311.7	100.9	1.5	56.1
11		185		46			89	54	441	302.2	99.6	1.5	56.3
12		352		72			195	41	1766	314.4	94.8	2.2	56.7
13		295		62			326	68	3471	362.3	109.1	1.6	57.0
14		313		66			539	78	4226	343.6	134.3	2.1	52.0
15		222		65			583	64	3810	358.7	134.8	2.2	54.0
16		256		44			428	95	1444	373.7	171.5	1.4	61.0
17		180		40			462	59	531	384.7	180.5	1.4	58.0
18		268		56			1293	85	1396	386.7	152.0	1.5	53.0
19		249		56			1817	101	14414	377.3	135.4	2.2	53.7
20		189		73			2728	133	16587	395.2	144.0	1.5	51.0
21		200		107			3897	128	15406	397.2	140.0	2.0	59.0
22		228		90			3505	95	3276	375.8	134.8	1.5	59.0
23		230		122			3362	73	8704	375.6	136.0	1.5	59.0
24		248		118			4031	99	25069	363.9	180.4	1.6	60.0
25		402		234			9448	141	22442	354.8	135.1	1.5	61.7
26		401		98			6044	81	34053	367.4	134.9	1.7	61.5
27		428		76			6998	88	22315	393.6	142.1	2.6	61.8
28		418		129			5009	84	25336	385.2	146.2	2.0	61.9
29		268		50			3755	73	11987	383.4	168.6	2.0	62.1
30		273		66			2978	57	5242	374.9	180.2	2.0	
TOTALS	901	2147		2147			57609	2148	224506				
AVERAGE	180	269		72			2216	72	7484	361.9	133.9		

TABLE 43

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		329		48			2986	85	5927	366.3	180.4	2.0	61.3
2		308		89			2247	63	3704	324.3	180.2	2.0	61.3
3		358		37			2043	63	4566	269.8	164.4	2.0	61.3
4		613		204			2884	101	18601	246.9	143.8	2.7	61.9
5		520		84			2165	105	20406	268.2	143.9	2.0	63.8
6		601		136			3892	157	17370	263.9	119.3	2.8	63.9
7		617		117			4684	225	16426	257.9	102.3	2.8	58.0
8		695		145			4858	368	17200	258.3	103.4	2.0	67.0
9		543		76			2986	408	36299	211.0	50.0	3.0	66.2
10		404		93			3939	561	33140	190.3	16.1	2.9	66.9
11		649		84			3245	616	28926	204.0	15.1	3.5	66.7
12		464		133			1302	670	19553	199.5	10.3	3.5	67.1
13		335		153			1716	485	17150	210.6	15.2	3.5	66.9
14		469		118			1616	645	18604	193.1	15.0	3.5	66.9
15		304		58			1225	655	19686	185.5	16.6	3.5	69.6
16		258		58			1132	777	16149	204.5	33.2	3.7	59.0
17		280		90			1160	808	14980	204.0	34.7	3.5	68.5
18		356		105			1313	1099	9519	185.9	36.0	3.8	67.4
19		234		86			944	1150	5591	192.4	27.1	3.8	67.4
20		248		41			652	930	5546	172.4	26.5	4.0	67.0
21		198		32			620	1244	5309	159.4	26.1	4.1	67.0
22		172		25			441	1305	4919	155.3	22.4	4.0	67.4
23		146		25			365	901	4509	135.5	22.4	4.0	68.0
24		95		31			331	792	3748	134.0	21.7	6.0	70.0
25		121		29			384	523	2058	139.3	22.6	6.0	68.0
26		290		55			346	1091	1679	145.2	22.5	3.5	68.0
27		413		103			495	1563	777	166.6	21.6	5.0	69.0
28		145		43			273	1121	1153	182.0	28.1	3.0	68.4
29		111		37			287	1048	2063	148.0	22.1	5.5	69.0
30		136		49			297	988	966	145.8	21.1	4.0	70.0
31		74		23			129	895	593	157.2	20.3	7.0	71.0
TOTALS		10486		2407			50957	21442	357117				
AVERAGES		338		78			1644	692	11520	202.5	54.3		

TABLE 44

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - **AUGUST 1984**

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		170		63			250	1035	1036	142.2	22.3	4.5	69.5
2		191		37			126	1346	513	147.6	22.1	5.0	69.5
3		170		33			156	1202	315	149.9	22.1	3.5	69.5
4		228		60			158	1350	485	110.8	22.6	3.5	69.0
5		312		78			180	1657	403	102.8	22.7	3.5	69.0
6			196	97			57	1526	220	109.0	22.8	3.0	69.0
7			115	24			44	578	129	163.0	26.7	3.8	69.4
8			96	41			47	485	247	180.7	31.7	3.8	69.8
9			75	11			31	564	183	155.6	29.7	6.0	69.8
10			177	63			41	511	149	137.6	24.9	3.0	70.0
11			261	42			25	644	73	136.0	21.8	6.8	70.0
12			435	45			26	660	52	123.8	22.6	2.5	70.0
13			279	68			20	656	56	135.3	23.1	6.0	66.0
14			290	71			19	412	84	148.7	22.7	5.0	66.0
15			154	25			15	276	76	145.2	22.6	6.0	67.0
16			146	46			2	142	67	141.0	22.5	3.0	71.0
17			164	59			2	235	28	153.5	9.3	3.5	71.0
18			402	71			2	235	17	125.5	9.1	3.5	71.0
19			254	94			4	387	18	134.6	9.3	3.0	70.0
20			364	196			5	319	3	124.8	11.2	3.0	70.0
21			355	120			2	211	21	122.4	20.7	4.9	70.0
22			421	106			1	141	26	150.6	22.7	3.3	70.0
23			189	108			2	110	13	145.7	22.8	4.5	71.0
24			740	166				244	19	148.6	21.9	4.0	71.0
25			407	64			1	254	10	144.0	21.8	3.5	71 0
26			348	69			2	335	45	129.0	19.3	5.5	70.0
27			681	114			4	716	15	135.2	19.4	3.5	69.0
28			726	207	1		5	772	1	130.8	21.2	3.5	70.0
29			1064	282			1	754	7	133.0	17.3	3.5	70.0
30			1132	298			1	465	4	157.2	6.5	4.5	69.0
31			2351	663	1	2	2	1932	10	118.3	.0	4.0	69.0
TOTALS		1071	11822	3421	2	2	1231	20172	4325				
AVERAGES		214	455	110	1	2	41	651	140	138.1	19.9		

TABLE 45

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - **SEPTEMBER 1984**

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			2467	640	12	9	8	2167	14	114.3	.0	4.0	69.0
2			1147	696	17	1		1739	2	123.5	.0	3.0	69.0
3			2617	908	18	8	1	2312	4	95.7	.0	5.5	69.0
4			867	543	11	8		1424	-1	112.2	.0	2.5	69.0
5			1924	651	11	6		992	0	102.9	.0	4.0	69.0
6			2412	889	40	21		1857	1	115.7	.0	2.5	68.5
7			2081	994	T38	12		2395	2	115.8	.0	2.5	68.0
8			3906	2116	78	32	2	4182	2	121.9	.0	2.5	68.0
9			4594	2216	125	95		7442	2	99.2	.0	3.0	67.0
10			2277	1360	113	38	2	6880	0	106.1	.0	2.5	69.0
11			2348	1131	34	22		5139	1	127.4	.0	2.8	67.0
12			1151	907	27	7		2690		149.7	.0	2.5	69.0
13			2739	805	56	26		2847		120.8	.0	3.5	69.0
14			2968	1897	28	5		3135		110.6	.0	3.0	67.0
15			2933	1603	68	27		3910		124.1	.0	3.5	67.0
16			2151	1716	37	24		5758		117.9	.0	3.0	67.0
17			1879	2130	79	26		7461	1	126.2	.0	3.5	67.0
18			756	1427	36	8		7635		129.9	.0	3.5	67.0
19			980	1294	31	8		5307		117.4	.0	3.5	60.0
20			668	1626	26	23		3066		124.6	.0	3.5	60.0
21			1574	1324	32	19		2200		110.1	.0	3.5	66.0
22			1493	2078	55	30		1925		109.5	.0	3.0	67.0
23			1517	2139	38	27		2575		85.2	.0	3.5	67.0
24			765	1377	40	30	2	2293		115.7	.0	4.3	65.0
25			1688	2456	29	22		2446		113.0	.0	4.0	65.0
26			1111	1596	36	21	1	1760		131.6	.0	4.0	65.0
27			503	1043	11	10		1712		111.5	.0	5.0	65.0
28			584	1653	3	3		2152		123.8	.0	5.0	64.0
29			531	1682	11	4		1912		117.7	.0	5.5	64.0
30			565	1786	10	3		1795		86.1	.0	5.0	64.1
TOTALS			53796	42583	1150	575	16	99110	28				
AVERAGES			1973	1419	38	19	3	3304	2	115.3	.0		

TABLE 46

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			425	1729	12	7		2288		101.9	.0	5.0	63.0
2			310	1112	7	5		3039		143.6	.0	3.4	63.0
3			515	1309	8	28		2717		151.6	.0	6.0	62.0
4			459	1061	11	5		2147		153.7	.0	4.0	62.0
5			421	920	7	10		2027		137.6	.0	3.2	62.0
6			320	1149	19	12		3112		101.1	.0	3.5	62.0
7			435	1009	21	17		2285		82.4	.0	3.5	62.0
8			166	308	3	4		1174		101.5	.0	4.0	61.0
9			136	497	2	2		1564		113.2	.0	4.0	61.0
10			249	712	4	14		2477		110.5	.0	4.0	61.0
11			351	950	15	12		1775		133.0	.0	3.5	61.0
12			143	579	3	16		1359		130.7	.0	4.0	61.0
13			175	430	1	3		1077		115.8	.0	4.5	61.0
14			122	468	1	5		1361		118.4	.0	4.0	60.0
15			31	248	1	4		630		134.3	.0	4.0	60.0
16			130	278		4		1082		134.1	.0	4.0	60.5
17			183	386	1	1		1462		101.1	.0	4.0	63.0
18			73	203		1		783		113.3	.0	3.5	60.5
19			55	270		6	1	1449		149.4	.0	4.0	58.0
20			106	275	2			846		119.6	.0	4.0	58.0
21			74	357	1	7		1116		127.7	.0	4.0	58.0
22			117	290	1	2		797		146.6	.0	3.0	56.0
23			23	230		9		847		129.1	.0	4.0	58.0
24			53	276	1	2		697		124.9	.0	3.5	56.0
25			173	287	4	5		955		126.0	.0	4.0	56.0
26			69	268	1	4		898		160.0	.0	3.0	56.0
27			20	157	2	3		1585		141.0	.0	3.5	56.2
28			74	250	1	3		2390		113.8	.0	2.5	55.6
29			165	267	1	4	1	856		104.5	.0	3.0	55.7
30			70	171		1		573		123.6	.0	3.0	55.7
31			35	131				676		135.6	.0	5.0	53.0
TOTALS			5678	16577	130	196	2	46044					
AVERAGES			183	535	5	7	1	1485		125.0	.0		

TABLE 47
WATER TEMPERATURE AND STREAM FLOW DATA
JOHN DAY 1984

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	131.1	2.5	53.0	169.1	3.5	47.5
2	139.7	3.5	52.0	169.7	3.5	47.5
3	127.2	2.5	51.5	169.2	3.5	47.5
4	93.6	4.0	51.0	168.6	3.2	47.5
5	107.9	2.5	51.0	154.5	4.5	50.0
6	120.3	4.0	51.0	165.9	4.5	47.5
7	115.3	3.0	50.7	164.4	4.5	44.3
8	125.2	3.5	50.2	146.0	3.5	44.3
9	152.9	3.1	50.0	146.9	4.0	44.0
10	145.4	2.0	49.9	174.1	4.0	44.0
11	116.1	3.0	49.8	157.2	4.0	44.0
12	102.4	2.5	49.8	159.2	4.5	44.0
13	121.5	3.0	49.4	159.4	4.5	44.0
14	131.4	2.5	49.7	154.8	3.5	44.0
15	164.7	3.0	49.0	144.0	2.5	44.0
16	164.8	2.5	49.0	146.1	3.5	44.0
17	156.9	4.0	49.0	181.5	2.5	44.0
18	139.2	3.5		163.0	4.0	44.0
19	136.0	3.5	50.0	158.8	2.9	42.0
20	132.6	3.0		197.7	3.0	42.0
21	170.0	3.0	48.0	164.6	2.2	36.0
22	103.2	3.5	48.0	162.9	3.0	36.0
23	137.8	4.0	48.0	128.5	3.1	33.0
24	132.8	4.0	48.0	114.3		
25	136.7	4.0	48.0	106.3	3.1	33.0
26	123.8	4.0	46.0	136 6	3.0	32.0
27	131.0	4.0		139.8	3.0	32.0
28	142.0	4.0	48.0	139.1	3.0	32.0
29	136.5	4.0	48.0	163.9	4.0	32.0
30	172.7	4.0	48.0	142.1	3.0	32.0
				129.7	3.5	32.0
TOTALS						
AVERAGES	133.7			154.1		

TABLE 48

PEAK DAYS OF MIGRATION
JOHN DAY DAM - 1968-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1968	Apr 28	11,114	Jul 19	2,694	Sep 8	4,532	Sep 8	3,735	Jun 29	7,677	Sep 4	2,256
1969	May 11	6,096	Jun 22	2,505	Sep 14	9,013	Sep 14	2,581	Jul 10	2,564	Sep 20	791
1970	May 4	5,485	Jul 11	1,897	Sep 13	6,728	Sep 12	4,159	Jul 6	4,119	Sep 11	1,319
1971	May 1	4,037	Jun 27	1,372	Sep 12	6,383	Sep 6	4,862	Jul 10	6,084	Sep 11	3,373
1972	Apr 27	6,484	Jun 29	1,805	Sep 12	6,280	Sep 19	6,149	Jul 9	3,049	Sep 19	1,381
1973	Apr 22	8,161	Jun 15	1,267	Sep 12	9,500	Sep 12	3,148	Jul 4	4,192	Sep 13	1,117
1974	May 22	2,773	Jul 15	1,039	Sep 17	6,004	Sep 27	724	Jul 6	2,534	Sep 17	1,237
1975	May 13	2,115	Jul 10	957	Sep 11	4,214	Sep 8	714	Jul 6	4,958	Sep 15	392
1976	May 6	2,795	Jul 2	1,168	Sep 15	6,259	Sep 18	1,343	Jul 2	1,871	Sep 15	463
1977	Apr 28	4,257	Jun 15	941	Sep 17	5,076	Sep 15	2,616	Jun 27	5,634	Sep 21	46
1978	Apr 1	4,081	Jun 7	1,106	Sep 15	4,941	Sep 15	1,913	Jul 1	940	Oct 12	376
1979	May 8	1,524	Jun 22	1,133	Sep 14	3,331	Sep 22	1,028	Jul 8	2,195	Oct 12	233
1980	May 8	1,266	Jul 6	879	Sep 25	2,036	Sep 7	1,776	Jul 6	3,959	Sep 25	191
1981	Apr 26	1,872	Jul 5	634	Sep 10	2,850	Sep 30	1,717	Jul 4	3,511	Sep 17	130
1982	May 14	1,746	Jun 2	864	Sep 8	3,945	Sep 21	4,122	Jul 9	2,017	Sep 25	278
1983	May 5	1,485	Jun 15	375	Sep 19	2,337	Sep 24	4,283	Jul 4	6,298	Sep 14	76
1984	May 5	1,195	Jul 8	695	Sep 9	4,594	Sep 17	7,461	Jun 27	6,998	Sep 9	220

TABLE 49

MONTHLY COUNT OF CHINOOK SALMON OVER JOHN DAY DAM
1968-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING APR 1*- JUN 5	SUMMER JUN 6- AUG 5	FALL AUG 6- OCT 31*	JACKS
1968				29,973	46,272	30,702	42,212	16,726	62,709	4,851	209		233,654	77,482	75,494	80,678	67,284
1969			6	4,266	72,966	35,899	31,071	18,523	103,778	9,542			276,051	81,724	64,732	129,595	93,928
1970				35,750	35,248	20,439	21,542	24,784	80,969	3,774			222,506	72,555	43,093	106,858	74,090
1971				13,995	40,620	24,364	25,692	10,403	73,157	5,650			193,881	56,625	50,030	87,226	61,380
1972				28,535	41,882	15,833	27,484	14,208	90,181	7,508			225,631	71,569	44,542	109,520	82,646
1973				67,467	27,091	18,972	15,067	16,995	89,913	13,987			249,492	96,710	34,206	118,576	73,687
1974				5,174	38,058	8,115	18,985	8,112	77,296	12,148			167,888	46,191	25,865	95,832	61,669
1975				7,727	27,989	11,058	21,359	18,250	65,367	7,329			159,079	37,716	32,179	89,184	62,403
1976				10,428	32,985	17,836	18,506	10,114	72,467	13,575			175,911	45,419	36,037	94,455	62,793
1977				55,061	19,422	15,674	13,764	7,853	71,302	11,855			194,931	75,782	29,194	89,955	60,386
1978				34,735	35,206	15,104	16,764	8,149	52,975	11,919			174,852	72,723	30,371	71,758	36,289
1979				8,224	12,568	9,537	13,580	14,128	50,977	8,566	574		118,154	21,981	23,572	72,601	41,364
1980				7,995	18,311	7,125	12,522	9,063	37,023	8,625			100,664	27,202	19,664	53,798	25,877
1981				18,178	18,325	7,292	8,992	8,524	44,626	8,422			114,359	37,677	15,813	60,869	34,547
1982				3,396	30,444	11,031	7,359	10,881	67,271	13,700			144,082	36,530	16,360	91,192	56,966
1983				7,123	25,391	7,990	6,925	8,174	66,078	18,025			139,706	32,147	11,982	52,261	43,316
1984				4,266	23,614	7,621	10,486	12,893	53,796	5,678	275**		118,629	28,781	18,277	71,571	70,141
TOTAL			6	342,293	546,392	264,592	312,310	217,780	1,159,885	165,154	1,058		3,009,470	918,814	571,411	1,475,929	1,008,766
17-YEAR AVERAGE				20,135	32,141	15,564	18,371	12,811	68,229	9,715	62		177,028	54,048	33,612	86,819	59,339

* 1968, 1969, 1979 and 1984 counting seasons varied slightly from these dates.

** Extended Counting Period.

TABLE 50

MONTHLY COUNT OF SOCKEYE SALMON
JOHN DAY DAM - 1968-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1968						42,175	44,942	690	32	7	1		87,847
1969						13,383	26,174	245	37	8			39,847
1970						18,029	58,176	1,909	19				78,133
1971						5,219	66,183	787	38	5			72,232
1972						6,762	43,704	1,257	68	2			51,793
1973					2	21,283	42,588	864	6	1			64,744
1974						2,024	30,687	403	6	1			33,121
1975						6,154	44,454	163	2	1			50,774
1976						8,907	21,278	258	1	2			30,446
1977					6	52,852	32,269	537	34	3			85,701
1978						5,633	8,006	119	20				13,778
1979						13,466	29,603	560	1				43,630
1980						9,596	40,536	530	13				50,675
1981						17,064	28,975	94	13				46,146
1982						8,708	28,974	286	2				37,970
1983						27,372	61,889	505	37	7			89,810
1984						57,609	50,957	1,231	16	2			109,815
TOTAL					8	316,236	659,395	10,438	345	39	1		986,462
17-YEAR AVERAGE						18,602	38,788	614	20	2			58,027

TABLE 51

MONTHLY COUNT OF COHO SALMON
JOHN DAY DAM - 1968-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1968							4	1,311	32,882	3,848	188		38,233
1969							25	308	9,879	3,377			13,589
1970							14	1,026	17,272	1,231			19,543
1971								944	36,401	3,485			40,830
1972								1,253	14,965	1,315			17,533
1973								788	11,350	1,221			13,359
1974								730	11,253	2,668			14,651
1975								85	4,266	1,954			6,305
1976								57	3,739	2,010			5,806
1977								8	534	581			1,123
1978								6	2,676	5,673			8,355
1979							1	132	2,853	1,753	322		5,061
1980								27	1,431	466			1,924
1981								90	2,030	442			2,562
1982								145	3,032	886			4,063
1983								99	1,353	188			1,640
1984								4	1,725	326	10		2,056
TOTAL							44	7,013	157,641	31,424	560		196,642
17-YEAR AVERAGE								413	9,273	1,848	33		11,567

TABLE 52

MONTHLY COUNT OF STEELHEAD TROUT
JOHN DAY DAM - 1968-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1968				3,939	2,659	151	6,094	26,824	68,791	11,405	1,393		121,256
1969			314	3,986	3,691	714	12,004	13,267	40,082	12,290			86,348
1970				1,987	1,279	253	7,373	19,412	46,036	6,100			82,440
1971				1,472	592	263	17,459	19,693	63,868	12,630			115,977
1972				1,523	1,966	356	17,656	20,502	78,138	21,487			141,628
1973				8,019	3,546	785	12,134	15,608	46,566	14,782			101,440
1974				1,713	2,363	1,361	9,713	8,419	12,479	7,708			43,756
1975				760	428	648	6,251	8,583	9,977	6,004			32,651
1976				929	1,248	1,868	9,254	17,964	22,754	5,791			59,808
1977				1,319	418	2,341	18,366	7,088	56,134	16,892			102,558
1978				741	631	1,601	5,573	6,911	22,896	5,835			44,188
1979				602	136	253	8,012	10,717	16,202	18,072	1,883		55,877
1980				4,131	555	577	5,850	18,114	34,700	14,272			78,199
1981				2,061	1,539	2,515	15,999	18,283	34,098	20,677			95,172
1982				3,393	16,698	1,167	10,168	19,693	50,725	21,759			108,603
1983				1,605	434	561	15,135	31,465	83,314	22,183			154,697
1984				3,286	1,787	2,148	21,442	20,172	99,110	46,044			193,989
TOTAL			314	41,466	24,970	17,562	198,483	282,715	785,870	263,931	3,276		1,618,587
17-YEAR AVERAGE				2,439	1,469	1,033	11,675	16,630	46,228	15,525			95,211

TABLE 53

YEARLY TOTALS OF SALMONID FISH COUNTED OVER MCNARY DAM
1954 - 1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	TOTAL SALMONID
1954	126,555	75,059	108,181	950	310,745
1955	108,915	85,575	173,758	643	368,891
1956	114,342	42,554	102,145	683	259,724
1957	292,696	105,728	85,460	2,855	486,739
1958	226,092	87,890	102,397	1,350	417,729
1959	171,490	110,475	83,977	1,970	367,912
1960	176,767	96,895	55,372	1,580	330,614
1961	154,996	103,743	16,388	2,045	277,172
1962	152,756	163,181	29,372	3,195	348,504
1963	154,459	113,646	59,744	3,113	330,962
1964	167,934	100,742	83,931	3,317	355,924
1965	150,907	118,960	42,052	2,700	314,619
1966	223,141	145,130	173,028	8,525	549,824
1967	195,653	77,700	105,635	27,226	406,214
1968	200,488	112,522	101,007	39,518	453,535
1969	213,407	76,681	29,787	53,716	373,591
1970	168,892	69,759	59,636	36,399	334,686
1971	171,448	109,630	52,867	39,358	373,303
1972	168,821	93,820	26,422	45,635	334,698
1973	184,112	64,620	42,731	17,682	309,145
1974	127,858	26,932	26,505	13,746	195,041
1975	133,150	23,663	43,143	3,975	203,931
1976	163,314	54,000	24,632	7,539	249,485
1977	183,581	87,712	80,781	4,622	356,696
1978	144,148	34,740	18,511	20,356	217,755
1979	95,275	50,304	37,792	12,800	196,171
1980	80,773	66,524	44,301	571	192,169
1981	80,619	61,985	26,644	3,736	172,984
1982	102,225	75,099	15,077	3,119	195,520
1983	121,636	125,254	40,903	2,470	290,263
1984	159,076	135,533	56,894	2,823	354,356
TOTAL	4,915,526	2,696,056	1,949,073	368,217	9,928,902
31-YEAR AVERAGE	158,565	86,970	62,873	11,878	320,287

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

TABLE 54

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER MCNARY DAM
1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	1,772	23,806	9,235	12,256	8,845	79,004	23,391	767	-	159,076
STEELHEAD	-	-	-	1,858	860	653	13,165	14,962	68,837	33,608	1,590	-	135,533
SOCKEYE	-	-	-	-	-	18,762	37,409	625	85	11	2	-	56,894
COHO	-	-	-	-	-	6	-	147	2,506	154	10	-	2,823
CHUM	-	-	-	-	-	-	-	-	-	-	-	-	-
PINK	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	-	3,630	24,666	28,656	62,830	24,579	150,432	57,164	2,369	-	354,326
SHAD	-	-	-	-		20,752	244,854	4,145	42	-	-	-	269,793

TABLE 55
DISCHARGE AND WATER QUALITY DATA
McNARY DAM - 1984

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	132.6	3.8	36.0	198.8	1.3	38.0	191.3	2.4	39.0
2	128.3	3.8	36.0	218.1	1.3	38.0	196.2	2.8	40.0
3	162.6	3.8	37.0	200.8	1.3	38.0	192.5	2.8	40.0
4	147.9	3.8	37.0	200.9	1.3	38.0	186.3	3.0	40.0
5	141.5	3.8	37.0	172.2	1.3	38.0	185.1	2.1	40.0
6	197.4	3.8	37.0	202.2	1.3	38.0	189.4	2.0	40.0
7	199.8	3.8	37.0	196.0	1.3	38.0	220.5	2.0	40.0
8	190.5	3.8	37.0	192.6	1.8	38.0	200.4	2.0	41.0
9	187.2	3.8	39.0	200.7	1.8	38.0	191.6	2.0	41.0
10	192.4	3.8	38.0	214.5	1.8	38.0	165.7	2.0	41.0
11	186.6	2.8	38.0	202.2	1.8	38.0	178.4	2.0	41.0
12	189.4	1.0	38.0	199.3	1.8	38.0	198.0	2.0	41.0
13	182.9	1.0	38.0	208.1	1.8	38.0	205.4	2.0	41.0
14	191.4	1.0	38.0	197.9	1.8	38.0	208.1	2.6	42.0
15	209.6	1.0	37.0	215.3	1.8	38.0	226.7	2.6	42.0
16	198.0	2.0	37.0	158.3	1.8	39 0	237.6	2.4	41.0
17	212.2	2.9	37.0	191.0	.6	39.0	205.0	2.4	43.0
18	210.9	2.9	37.0	210.6	1.9	39.0	190.7	2.0	41.0
19	193.4	3.0	37.0	208.5	2.3	39.0	189.2	2.1	43.0
20	201.2	3.0	36.0	162.7	2.8	39.0	189.1	2.3	41.0
21	196.6	3.0	36.0	193.2	2.8	38.0	191.1	2.1	41.0
22	199.1	3.0	36.0	209.7	2.9	38.0	219.0	2.0	43.0
23	203.8	3.0	36.0	206.7	2.9	39.0	250.8	2.0	44.0
24	207.9	3.0	36.0	205.1	1.3	38.0	207.3	2.3	44.0
25	196.9	3.8	36.0	204.4	1.2	38.0	214.4	2.1	45.0
26	216.4	2.6	36.0	216.0	1.3	38.0	200.8	1.6	45.0
27	186.3	2.0	37.0	198.7	2.1	38.0	238.5	1.0	45.0
28	181.2	2.6	37.0	174.1	2.1	38.0	230.9	1.0	45.0
29	172.4	1.4	37.0	186.8	2.2	38.0	226.1	1.1	45.0
30	167.1	1.5	38.0				233.1	1.0	45.0
31	191.1	1.2	38.0				226.6	1.0	46.0
TOTALS	186.3			198.1			206.0		
AVERAGES									

TABLE 56

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	4							98		206.7	8.5	1.0	47.0
2								79		203.4	.0	1.0	47.0
3								71		199.0	.0	1.7	47.0
4	4							59		204.0	8.5	1.0	47.0
5	25							59		206.0	15.2	1.6	47.0
6	6							54		250.7	58.5	1.3	47.0
7	20							63		223.3	28.8	1.1	47.0
8	13			5				80		215.5	22.9	1.2	47.0
9	31			16				106		231.7	54.4	.8	47.0
10	8							30		249.2	73.4	1.2	47.0
11	13							60		248.9	74.3	1.2	47.0
12	15							75		236.6	61.1	1.2	47.0
13	20							44		253.5	74.7	1.2	47.0
14	43			1				74		228.8	52.4	1.2	47.0
15	46			8				54		244.2	78.7	1.4	48.0
16	45			8				51		242.6	65.3	1.2	48.0
17	34							44		270.0	106.4	1.4	49.0
18	33			6				50		298.1	121.4	1.5	49.0
19	45			2				38		298.8	120.6	1.5	49.0
20	67			1				107		302.1	127.7	1.4	49.0
21	49			3				84		311.0	143.7	1.5	49.0
22	57							69		312.0	140.5	1.5	49.0
23	69			6				46		327.7	158.8	2.0	49.0
24	56			4				60		304.5	129.8	1.5	49.0
25	117							77		310.3	127.2	1.5	49.0
26	165			1				71		320.4	137.2	1.6	49.0
27	159			31				74		304.2	122.2	1.6	48.0
28	67			4				13		272.6	90.5	1.5	48.0
29	259			33				38		268.8	88.6	1.9	48.0
30	158			15				30		273.7	91.1	1.6	48.0
TOTAL	1628			144				1858					
AVERAGE	58			9				62		260.6	79.1		

TABLE 57

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	545			18				30		275.8	94.8	2.4	49.0
2	641			29				36		275.7	93.8	2.4	49.0
3	413			10				7		281.3	94.2	2.6	48.0
4	378			27				34		259.1	68.5	2.4	49.0
5	975			71				81		261.5	60.9	2.4	49.0
6	1300			71				60		262.5	61.3	1.8	49.0
7	960			69				40		257.7	69.1	1.8	49.0
8	866			128				58		255.2	75.8	2.2	49.0
9	893			108				63		254.4	76.6	1.7	49.0
10	1231			113				37		303.2	121.3	2.0	49.0
11	862			72				27		291.3	111.7	1.9	49.0
12	1222			150				34		269.3	89.8	1.5	50.0
13	1813			145				36		269.0	89.2	2.0	50.0
14	748			82				11		284.8	102.7	1.8	51.6
15	596			55				18		353.1	168.5	1.8	51.0
16	271			83				45		367.7	181.9	1.2	52.0
17	405			160				47		354.3	173.3	1.2	52.0
18	753			245				21		314.9	137.7	1.2	52.0
19	1354			354				55		320.7	138.7	1.2	52.0
20	670			173				13		299.6	120.1	1.2	52.0
21	250			91				4		303.5	126.8	1.2	52.0
22	295			68				13		355.3	172.6	2.0	52.0
23	278			50				8		339.9	156.0	1.7	52.0
24	441			89				19		329.2	158.1	1.3	52.0
25	429			73				12		343.3	161.0	1.2	54.0
26	482			124				5		330.2	145.9	1.8	54.0
27	446			244				17		271.0	88.2	1.4	54.0
28	434			125				20		275.3	98.8	1.4	54.0
29	192			76				6		324.6	148.1	1.4	55.0
30	112			46				1		348.6	166.3	1.1	55.0
31	314			88				2		417.0	230.7	1.3	54.0
TOTAL	20569			3237				860					
AVERAGE	664			104				28		304.8	122.0		

TABLE 58

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	171			52				6		373.2	179 1	1.3	54.0
2	280			61				8		320.9	118.6	1.3	54.0
3	281			55				10		331.6	133.8	1.3	54.0
4	234			88				16		323.7	149.2	1.5	54.0
5	140			35				13		322.8	144.3	1.4	54.0
6	148			25				9		326.4	152.7	1.6	54.0
7	81			11				9		328.5	153.5	1.2	55.0
8	186			48				2		329.4	150.7	1.0	55.0
9		235		51				25		317.3	133.8	1.0	56.0
10		222		37				1		317.3	135.2	1.1	55.0
11		265		32				15	48	263.9	85.2	1.5	56.0
12		390		63			10	17	178	298.7	124.3	1.6	56.0
13		302		29			7	8	73	328.3	149.2	1.6	56.0
14		311		38			13	9	291	300.3	120.7	1.7	57.0
15		316		46			57	20	119	349.9	170.5	1.6	57.0
16		324		50			105	31	195	367.5	175.4	1.5	57.0
17		322		72			123	26	378	370.1	191.7	1.6	58.0
18		160		44			90	5	419	381.3	210.3	1.5	58.0
19		256		39			175	15	497	373.1	191.5	1.6	58.0
20		291		56			235	24	597	353.8	172.3	1.4	58.0
21		314		65		6	887	22	346	382.6	206.9	1.4	58.0
22		205		48			586	24	632	375.6	196.0	2.0	58.0
23		249		42			1006	25	390	356.1	172.2	2.0	59.0
24		253		93			2035	36	4470	339.3	155.8	2.0	59.0
25		222		30			777	13	1164	338.6	156.5	2.0	59.0
26		345		82			2834	68	5109	357.1	176.3	2.0	59.0
27		231		71			1541	39	880	363.3	171.5	1.8	59.0
28		305		103			3146	55	2149	364.4	177.5	1.8	60.0
29		338		54			1949	46	750	385.8	189.1	1.8	60.0
30		276		62			3186	56	2067	357.3	158.1	2.3	60.0
TOTAL	1521	6132		1582		6	18762	653	20752				
AVERAGE	190	279		53		6	987	22	1038	343.0	160.1		

TABLE 59

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		253		47			1390	66	1994	338.1	138.8	2.3	60.0
2		294		52			3335	81	14907	278.0	99.6	2.5	60.0
3		246		143			2405	56	5901	315.0	143.4	2.8	60.0
4		360		37			2347	76	11788	261.4	79.9	1.8	60.0
5		341		24			1648	43	6500	293.6	112.8	2.0	60.9
6		471		81			1960	94	8785	272.5	92.0	2.4	63.0
7		420		39			1524	108	11706	254.7	73.5	1.9	63.0
8		412		73			1544	126	11970	235.3	55.6	2.0	63.0
9		428		84			1400	113	11420	202.5	39.7	2.0	63.0
10		503		57			2244	140	10329	216.4	57.8	2.0	63.0
11		564		63			2090	241	14143	210.6	49.5	2.0	63.0
12		528		47			2458	257	17026	206.6	47.0	2.5	64.0
13		637		97			2878	480	17296	211.7	48.1	3.0	65.0
14		682		92			1862	586	17679	189.3	24.1	4.4	65.0
15		398		70			1321	461	16260	164.4	.3	3.8	65.0
16		338		69			1470	332		202.5	43.4	4.0	65.0
17		297		101			739	409	10499	236.4	76.6	5.0	65.0
18		519		210			1028	531	17389	187.0	21.2	3.5	65.0
19		351		71			648	394	11227	184.7	21.6	4.2	66.0
20		106		16			297	272	2101	172.2	.0	3.8	66.0
21		253		25			441	740	3343	161.8	.0	2.8	66.0
22		307		55			434	610	2914	135.5	.0	3.0	67.0
23		188		30			458	745	3941	136.3	.0	4.2	67.0
24		178		31			261	666	4390	142.7	.0	3.0	67.0
25		143		15			271	589	2389	146.6	.0	3.0	67.0
26		119		23			160	835	1278	162.7		3.0	67.0
27		149		23			245	811	1465	163.1	.0	3.0	67.0
28		361		33			223	1120	1071	167.9	.0	3.0	67.0
29		328		26			165	979	2154	109.7	.0	3.0	67.0
30		248		42			104	960	1807	128.0	.0	3.0	67.0
31		41		17			59	244	1182	143.7	.0	4.8	67.0
TOTAL		10463		1793			37409	13165	244854				
AVERAGE		338		58			1207	425	8162	201.0	39.8		

TABLE 60

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - **AUGUST 1984**

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		65		26			93	590	1253	156.3	.0	4.3	67.0
2		45		13			49	522	588	143.2	.0	3.0	67.0
3		139		34			82	763	322	115.7	.0	3.8	67.0
4		127		42			48	937	341	116.9	0	3.9	67.0
5		132		18			53	847	221	112.5	.0	2.4	67.0
6		280		39	2		47	1144	119	119.4	.0	3.6	67.0
7		289		51			82	1333	103	132.9	.0	3.8	71.0
8		252		54			56	1172	91	163.8	.0	3.3	71.0
9			151	37			34	763	110	164.3	.0	2.9	71.0
10			25	10				202	46	160.0	.0	3.2	72.0
11			29	3				232	53	136.4	.0	3.3	72.0
12			72	10			28	368	29	122.2	.0	2.2	72.0
13			268	67			11	640	131	130.3	.0	2.2	72.0
14			407	43			13	613	152	144.1	.0	2.6	72.0
15			190	17			8	436	130	137.7	.0	2.6	72.0
16			158	22			5	304	68	149.3	.0	1.9	70.0
17			154	26			5	245	69	144.2	.0	2.3	71.0
18			189	30			4	249	63	141.0	.0	2.3	70.0
19			273	35			1	362	77	100.8	.0	2.4	70.0
20			247	30				162	66	117.4	.0	2.4	70.0
21			175	25				232	21	140.4	.0	2.5	70.0
22			129	31				143	18	141.2	.0	2.5	70.0
23			214	60	11	20	4	193	6	147.4	.0	3.0	71.0
24			315	59	3	1	1	183	21	151.0	.0	2.1	70.0
25			306	30				137	7	129.9	.0	2.1	70.0
26			563	45	3			171	11	106.5	.0	3.0	70.0
27			245	31	1			107	12	140.5	.0	3.2	70.0
28			621	106	9			447	3	128.8	.0	3.0	70.0
29			383	20	8			283	14	149.8	.0	3.0	70.0
30			564	132	34	18		533		147.5	.0	3.0	70.0
31			560	132	9	28		649		117.2	.0	3.0	69.0
TOTAL		1329	6238	1278	80	67	625	14962	4145				
AVERAGE		166	271	41	9	17	31	483	143	135.8	.0		

TABLE 61

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			884	237	23	17		832		119.2	.0	3.0	69.0
2			966	169	15	19		708		104.8	.0	3.0	69.0
3			2346	415	30	80		1450		82.2	.0	3.0	69.0
4			932	326	5	21		1055	1	111.5	.0	3.0	68.0
5			1316	464	7	32		1451	30	110.2	.0	1.8	68.0
6			1268	1009	3	27		1725	4	120.5	.0	2.0	68.0
7			987	700	15	40		1082	7	123.8	.0	2.0	69.0
8			2078	627	13	12		933		112.1	.0	2.5	68.0
9			2335	784	7	15		1854		94.5	.0	2.0	69.0
10			2500	1004	10	17		2390		107.2	.0	2.0	69.0
11			3853	1469	27	68		4162		114.0	.0	1.7	69.0
12			1865	665	75	136		3355		150.0	.0	2.0	69.0
13			880	613	47	118	8	3101		108.5	.0	2.0	67.0
14			1798	1033	27	93		2804		117.2	.0	2.0	67.0
15			911	476	7	26		1852		128.3	.0	2.2	66.0
16			1609	564	25	68		1390		99.3	.0	2.2	66.0
17			3582	1553	71	159	28	3561		114.7	.0	2.4	66.0
18			2340	1316	28	54	5	3660		127.3	.0	2.2	66.0
19			1871	2291	44	60		3373		111.8	.0	3.0	66.0
20			1594	1353	15	32		3007		116.9	.0	2.7	67.0
21			1625	1798	33	107		4095		110.8	.0	2.9	67.0
22			614	1202	19	88	31	2940		100.4	.0	2.8	67.0
23			1073	1348	23	56	11	3368		77.8	.0	2.7	66.0
24			608	856	17	27		1496		121.1	.0	2.5	66.0
25			1291	1097	19	47		1924		123.9	.0	2.5	66.0
26			1359	2060	29	93	2	1793		131.0	.0	2.6	65.0
27			1256	1448	19	39		2441		85.8	.0	2.5	64.0
28			1441	2108	71	103		2776		109.3	.0	2.6	64.0
29			1347	1601	35	35		2846		91.0	.0	2.8	63.0
30			599	1290	18	40		1773		84.5	.0	3.1	63.0
TOTAL			47128	31876	777	1729	85	68837	42				
AVERAGE			1571	1063	26	58	14	2295	10	110.3	.0		

TABLE 62

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			379	818	7	19		957		94.4	.0	2.6	63.0
2			819	1209	2	16		1394		123.5	.0	2.6	62.0
3			403	1205		6		1143		127.5	.0	3.8	62.0
4			454	1294	4	17		1403		133.1	.0	3.8	62.0
5			727	1479	2	10		2821		127.8	.0	3.8	62.0
6			484	791	3	9		2599		104.6	.0	3.8	62.0
7			455	639				1935		100.6	.0	3.8	62.0
8			431	747	2	7		1654		108.6	.0	3.8	62.0
9			806	1951		16	7	2410		103.0	.0	3.9	62.0
10			551	1234	6	6	1	2813		106.8	.0	2.4	61.0
11			409	738		1		1634		98.0	.0	2.8	61.0
12			96	229				1001		115.2	.0	2.8	62.0
13			123	251				580		113.6	.0	2.9	61.0
14			207	719				1644		110.5	.0	2.9	61.0
15			83	246				590		129.4	.0	3.0	61.0
16			87	288	1	2	1	715		128.6	.0	2.9	59.0
17			83	264	2	4		434		124.9	.0	2.5	58.0
18			79	190		1		602		131.7	.0	3.0	58.0
19			126	140		1		692		100.0	.0	2.5	58.0
20			106	250	1	5		496		113.8	.0	2.5	57.0
21			22	74				452		127.8	.0	2.5	56.0
22			33	71				285		142.7	.0	2.5	55.0
23			6	73				224		115.1	.0	3.0	55.0
24			44	142				265		126.6	.0	3.0	55.0
25			36	124				517		135.8	.0	3.0	55.0
26			42	148				609		141.2	.0	3.0	55.0
27			68	145				836		125.7	.0	2.9	55.0
28			49	64				909		110.4	.0	2.8	54.0
29			68	134				770		123.8	.0	2.8	54.0
30			65	218		1		552		118.6	.0	2.8	54.0
31			49	126	2	1	2	672		123.4	.0	2.8	54.0
TOTAL			7390	16001	32	122	11	33608					
AVERAGE			238	516	3	7	3	1084		118.9	.0		

TABLE 63
WATER TEMPERATURE AND STREAM FLOW DATA
McNARY PROJECT - 1984

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	134.1	2.8	53.0	140.5	3.0	47.0
2	129.5	2.8	53.0	151.4	3.2	47.0
3	99.4	4.4	52.0	156.3	3.4	47.0
4	90.9	4.2	52.0	157.8	3.5	46.0
5	114.5	4.2	51.0	155.5	2.9	45.0
6	106.8	4.2	51.0	151.7	3.2	44.0
7	107.3	4.2	51.0	158.6	4.1	44.0
8	124.4	4.2	51.0	166.4	4.1	44.0
9	136.1	4.2	51.0	158.6	4.4	43.0
10	125.0	3.2	50.0	168.8	4.3	43.0
11	107.8	3.6	50.0	128.4	4.3	43.0
12	110.0	3.6	50.0	146.9	3.2	43.0
13	116.3	3.5	50.0	134.7	3.2	42.0
14	132.2	3.6	50.0	151.4	3.2	42.0
15	133.3	3.5	49.0	152.6	3.2	42.0
16	117.5	3.1	49.0	153.9	3.2	42.0
17	156.0	3.1	49.0	161.8	3.2	42.0
18	154.7	3.2	49.0	161.1	2.0	41.0
19	117.1	3.2	49.0	160.2	2.0	40.0
20	157.3	3.2	49.0	162.1	2.0	40.0
21	137.8	2.8	49.0	167.5	2.4	39.0
22	140.6	2.8	49.0	154.3	2.6	39.0
23	131.7	3.6	49.0	114.0	2.9	39.0
24	134.8	3.6	49.0	116.4	2.8	39.0
25	136.0	3.5	49.0	111.2	2.2	39.0
26	130.4	3.5	49.0	120.4	2.2	39.0
27	129.2	3.8	49.0	140.4	2.2	39.0
28	141.1	3.8	49.0	150.5		39.0
29	142.1	3.7	47.0	153.0		39.0
30	138.2	3.7	47.0	141.7		39.0
31				131.6		38.0
TOTALS						
AVERAGES	127.7			147.7		

TABLE 64
PEAK DAYS OF FISH MIGRATION
McNARY DAM - 1954-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1954	May 12	6,571	Jul 5	2,565	Sep 12	906	Sep 10	1,285	Jul 9	6,798	Sep 11	79
1955	May 26	2,565	Jul 10	3,034	Sep 10	536	Aug 13	2,432	Jul 16	19,916	Sep 26	26
1956	May 21	1,112	Jul 1	5,361	Sep 11	473	Aug 10	967	Jul 12	9,322	Sep 17	32
1957	May 4	7,075	Jul 26	7,616	Sep 13	2,963	Oct 5	3,028	Jul 11	5,763	Sep 25	208
1958	Jun 7	3,247	Jun 21	4,725	Sep 12	5,268	Sep 23	2,909	Jul 12	5,809	Sep 21	92
1959	May 14	1,831	Jul 9	3,658	Sep 15	3,007	Sep 19	3,884	Jul 15	5,786	Sep 15	147
1960	May 7	5,124	Jun 23	4,752	Sep 10	2,966	Sep 14	3,720	Jul 1	3,637	Sep 10,17	116
1961	May 2	5,775	Jun 29	2,281	Sep 17	1,978	Sep 17	3,734	Jul 12	897	Sep 11	147
1962	May 3	3,565	Jun 23	2,800	Sep 11	3,011	Sep 9	6,422	Jul 11	2,454	Sep 9	207
1963	May 11	3,219	Jun 26	1,710	Sep 11	3,643	Sep 21	2,793	Jul 5	4,637	Sep 5	128
1964	Apr 30	4,865	Jul 3	2,440	Sep 10	3,000	Sep 14	3,312	Jul 12	7,457	Sep 19	201
1965	May 16	1,648	Jul 7	2,056	Sep 15	4,251	Aug 2	3,880	Jul 7	4,326	Sep 18	211
1966	Apr 23	4,795	Jul 5	1,992	Sep 18	3,320	Sep 24	4,588	Jul 13	10,370	Sep 13	451
1967	Apr 27	3,509	Jul 5	2,242	Sep 25	5,782	Sep 25	2,969	Jul 13	8,605	Sep 16	1,659
1968	Apr 30	9,471	Jun 21	2,388	Sep 11	4,213	Sep 13	3,796	Jul 3	7,226	Sep 13	3,307
1969	May 13	4,793	Jun 24	2,700	Sep 16	5,582	Sep 13	3,197	Jul 12	1,554	Sep 16	2,864
1970	Apr 30	4,924	Jul 13	1,704	Sep 16	3,625	Sep 14	3,011	Jul 11	3,081	Sep 14	2,794
1971	May 4	3,208	Jul 9	2,020	Sep 12	4,710	Sep 12	4,574	Jul 13	3,926	Sep 12	2,732
1972	Apr 30	5,376	Jul 5	1,889	Sep 17	3,627	Sep 20	3,695	Jul 13	2,084	Sep 17	2,508
1973	Apr 28	6,543	Jun 17	1,684	Sep 13	6,570	Sep 13	2,970	Jul 6	3,059	Sep 15	1,474
1974	May 25	1,818	Jul 10	1,044	Sep 14	3,593	Oct 3	620	Jul 11	2,344	Sep 15	620
1975	May 15	1,629	Jul 10	1,316	Sep 13	3,517	Sep 16	468	Jul 9	4,745	Sep 14	368
1976	May 4	2,261	Jul 3	1,271	Sep 18	5,514	Sep 23	1,146	Jul 6	2,147	Sep 17	419
1977	Apr 30	4,357	Jun 26	1,138	Sep 21	4,826	Sep 15	3,097	Jul 2	4,962	Sep 22	283
1978	May 3	4,755	Jul 19	967	Sep 16	1,790	Sep 22	1,028	Jul 3	923	Sep 22	990
1979	May 10	1,535	Jul 24	752	Sep 18	2,049	Sep 22	978	Jul 6	2,102	Sep 11	853
1980	May 9	1,252	Jul 12	837	Sep 16	1,638	Sep 28	1,443	Jul 8	3,431	Oct 5	37
1981	May 21	1,899	Jul 6	562	Sep 10	2,155	Oct 3	1,895	Jul 7	2,189	Sep 11	508
1982	May 17	1,625	Jul 2	558	Sep 10	3,041	Jul 9	10,183	Jul 9	1,038	Sep 12	251
1983	May 7	1,461	Jul 13	486	Sep 25	2,497	Sep 27	4,017	Jul 6	3,590	Sep 25	115
1984	May 13	1,813	Jul 14	682	Sep 11	3,853	Sep 11	4,162	Jun 30	3,186	Sep 12	211

TABLE 65
MONTHLY COUNT OF CHINOOK SALMON
McNARY DAM - 1954-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING *APR 1-JUN 8	SUMMER JUN 9-AUG 8	FALL AUG 9-OCT 31*
1954			14	919	42,625	28,510	35,993	9,287	8,626	568	13		126,555	52,014	61,065	13,476
1955				86	12,778	26,125	46,021	14,773	7,220	1,648	264		108,915	21,309	71,180	16,426
1956			7	307	10,746	34,360	50,409	11,073	5,636	1,360	444		114,342	12,717	90,335	11,290
1957			6	14,489	67,939	91,473	41,485	25,621	48,685	2,998			292,696	99,511	122,578	70,607
1958				1,864	36,684	61,898	25,140	11,120	82,890	6,496			226,092	54,910	73,654	97,528
1959				3,914	31,923	23,461	51,478	14,929	42,756	3,029			171,490	40,775	74,985	55,730
1960				4,808	44,721	49,506	25,710	13,376	35,329	3,317			176,767	52,490	76,940	47,337
1961				21,669	44,260	19,722	23,192	10,661	31,447	4,045			154,996	68,539	45,257	41,200
1962				10,527	44,053	28,621	21,008	11,751	33,541	3,255			152,756	55,884	52,756	44,116
1963				7,765	42,804	22,454	18,659	13,757	43,731	5,289			154,459	52,336	44,760	57,363
1964				19,856	33,310	10,893	39,334	14,930	45,514	4,097			167,934	54,279	55,062	58,593
1965				6,114	20,559	14,094	28,599	12,856	60,185	8,500			150,907	29,206	45,375	76,326
1966				53,484	32,282	21,161	35,895	13,811	58,275	8,233			223,141	87,195	60,827	75,199
1967				32,790	28,174	13,244	44,612	10,788	54,314	11,731			195,653	62,591	59,975	73,087
1968				13,328	51,443	20,456	37,127	15,713	53,597	8,824			200,488	67,092	60,639	72,757
1969				809	60,241	39,074	30,556	12,200	59,889	10,638			213,407	70,079	63,953	79,375
1970				28,015	34,027	18,661	23,132	13,773	44,635	6,649			168,892	63,982	43,356	61,554
1971				5,642	32,688	24,007	35,152	9,680	55,297	8,982			171,448	42,601	59,129	69,718
1972				25,911	41,609	12,553	35,322	10,154	37,131	6,141			168,821	69,023	50,491	49,307
1973				44,878	31,727	16,836	14,520	10,400	57,716	8,035			184,112	79,047	31,812	73,253
1974				1,918	34,767	7,976	18,181	6,251	45,845	12,920			127,858	40,037	25,812	62,009
1975				4,694	24,752	11,590	20,497	12,485	53,125	6,007			133,150	32,718	31,713	68,719
1976				4,868	30,435	16,714	19,821	9,143	64,863	17,470			163,314	38,505	36,818	87,991
1977				40,692	23,895	16,768	16,256	7,348	64,785	13,837			183,581	66,934	32,277	84,370
1978				27,191	37,613	14,505	18,095	7,799	30,273	7,296	1,376		144,148	68,414	31,589	44,145
1979			6	5,424	13,696	9,763	14,601	8,030	34,702	8,171	882		95,275	21,153	24,161	49,961
1980			3	3,481	18,108	6,705	12,166	7,001	24,409	8,284	616		80,773	23,001	18,862	38,910
1981			3	12,923	16,904	8,288	8,243	5,584	23,323	4,926	425		80,619	32,330	15,141	33,148
1982			3	1,638	23,487	10,357	8,749	5,091	44,276	8,624	-		102,225	28,352	16,574	57,299
1983			-	4,481	25,074	9,202	7,882	5,217	54,339	15,441	-		121,636	31,636	16,199	73,801
1984			-	1,628	20,569	7,653	10,463	7,567	47,128	7,390	285		102,683	23,718	17,924	61,041
TOTAL			42	406,113	1,013,893	696,630	818,298	342,169	1,353,482	224,201	4,305		4,859,133	1,542,378	1,511,199	1,805,556
31-YEAR AVERAGE			2	13,100	32,706	22,472	26,397	11,038	43,661	7,232	139		156,746	49,754	48,748	58,244

* Dates vary depending on beginning and ending of fish counting.

TABLE 66

MONTHLY COUNT OF SOCKEYE SALMON
MCNARY DAM - 1954-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1954					1	1,107	93,452	11,382	2,214	25			108,181
1955					43	287	163,902	9,402	121	3			173,758
1956					1	639	94,352	6,882	262	7	2		102,145
1957					13	6,318	74,874	4,233	22				85,460
1958						12,542	82,547	5,474	1,819	15			102,397
1959					21	2,031	73,735	7,981	209				83,977
1960						9,374	43,749	2,241	8				55,372
1961						1,088	14,149	1,138	11	2			16,388
1962						1,721	27,134	511	6				29,372
1963					78	8,712	50,415	535	4				59,744
1964						770	81,536	1,617	8				83,931
1965						328	40,790	923	10	1			42,052
1966						6,202	162,267	4,548	11				173,028
1967						1,935	101,044	2,647	9				105,635
1968						28,928	70,413	1,666					101,007
1969						5,787	23,353	647					29,787
1970						7,152	47,339	5,134	11				59,636
1971						317	50,568	1,982					52,867
1972						366	24,452	1,604					26,422
1973						9,011	32,301	999	420				42,731
1974						188	25,816	486	15				26,505
1975						1,517	41,011	615					43,143
1976						4,461	19,319	415	437				24,632
1977					8	36,708	43,077	739	207	42			80,781
1978						3,211	10,376	714	1,583	2,627			18,511
1979						6,317	29,571	1,547	321	36			37,792
1980						3,400	40,469	432					44,301
1981						4,419	22,042	180	1	2			26,644
1982						812	13,489	281	292	203			15,077
1983						5,897	33,851	997	142	16			40,903
1984						18,762	37,409	625	85	11	2		56,894
TOTAL					165	190,307	1,668,802	78,577	8,228	2,990	4		1,949,073
31-YEAR AVERAGE						6,139	53,832	2,535	265	96	-		62,873

TABLE 67

MONTHLY COUNT OF COHO SALMON
MCNARY DAM - 1954-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1954								4	751	180	14	1	950
1955									350	260	33		643
1956								16	462	157	48		683
1957							18	208	2,364	265			2,855
1958								29	1,091	230			1,350
1959								32	1,892	46			1,970
1960								24	1,432	124			1,580
1961								22	1,731	292			2,045
1962							5	106	2,884	200			3,195
1963							5	437	2,259	412			3,113
1964							3	307	2,734	273			3,317
1965							22	105	2,264	309			2,700
1966								811	7,195	519			8,525
1967							11	11	22,492	4,712			27,226
1968								1,010	36,260	2,248			39,518
1969								1,643	45,497	6,576			53,716
1970								3,576	31,161	1,662			36,399
1971								927	33,828	4,603			39,358
1972								2,433	38,747	4,455			45,635
1973							66	1,768	14,452	1,396			17,682
1974								1,160	10,052	2,534			13,746
1975							1	268	3,675	31			3,975
1976								373	5,201	1,965			7,539
1977						2		274	2,698	1,648			4,622
1978						1		138	10,445	7,459	2,313		20,356
1979				1		4	194	652	9,058	2,431	460		12,800
1980								2	180	203	186		571
1981								421	2,840	435	40		3,736
1982							141	235	2,148	595			3,119
1983							-	229	1,536	705	-		
1984								147	2,506	154	10		2,817
TOTAL				1		7	466	17,368	300,185	47,079	3,104	1	368,211
31-YEAR AVERAGE							16	560	9,683	1,519	100		11,878

TABLE 68

MONTHLY COUNT OF STEELHEAD TROUT
MCNARY DAM - 1954-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1954			376	5,569	2,307	128	2,628	20,939	26,944	11,627	2,937	1,604	75,059
1955	931	35	70	3,279	1,791	162	5,257	36,035	17,463	16,941	2,874	737	85,575
1956	66	753	563	2,365	1,218	276	5,440	14,492	8,245	6,787	2,349		42,554
1957			840	2,084	147	334	18,100	28,926	34,478	20,775	8	36	105,728
1958	62	137	1,069	877	334	1,265	9,967	6,535	50,229	17,415			87,890
1959				1,317	685	748	10,508	32,872	49,542	14,803			110,475
1960				1,579	1,236	908	8,475	22,443	51,749	10,505			96,895
1961				896	580	1,281	7,469	11,428	64,521	17,568			103,743
1962				1,650	762	1,108	11,321	28,288	98,042	22,010			163,181
1963				813	1,751	2,639	8,252	26,282	47,982	25,927			113,646
1964				1,789	805	486	7,602	25,918	53,180	10,962			100,742
1965				1,361	363	231	11,749	31,155	54,450	19,651			118,960
1966				2,279	954	1,476	18,241	26,062	71,180	24,938			145,130
1967				1,434	1,130	152	5,771	14,894	32,310	22,009			77,700
1968				5,451	3,361	247	4,058	22,268	61,167	15,970			112,522
1969				2,304	1,792	711	7,668	13,641	35,836	14,729			76,681
1970				1,347	1,001	340	5,183	15,236	39,150	7,502			69,759
1971				813	374	271	8,931	21,324	62,083	15,834			109,630
1972				1,614	393	130	8,155	20,548	46,393	16,587			93,820
1973				3,178	846	270	6,898	11,121	32,701	9,606			64,620
1974				847	715	681	4,093	5,242	8,648	6,706			26,932
1975				612	209	254	3,623	6,708	9,329	2,928			22,663
1976				936	1,372	1,949	5,772	16,145	22,423	5,403			54,000
1977				1,730	987	2,916	13,132	7,833	43,792	17,322			87,712
1978				1,266	701	1,832	3,444	4,863	15,627	5,708	1,299		34,740
1979			970	681	156	93	4,955	9,970	14,648	15,580	3,251		50,304
1980			1,753	3,355	608	381	2,740	14,431	27,706	12,776	2,774		66,524
1981			861	1,479	809	878	7,212	12,839	19,961	15,652	2,294		61,985
1982			1,530	1,764	825	321	4,279	12,621	36,282	17,477			75,099
1983				1,051	215	137	7,746	25,821	70,369	19,915			125,254
1984				1,858	860	653	13,165	14,962	68,837	33,608	1,590		135,533
TOTAL	1,059	925	8,032	57,578	29,287	23,258	241,834	561,842	1,275,267	475,221	19,376	2,377	2,696,056
31-YEAR AVERAGE			268	1,857	945	750	7,801	18,124	41,138	15,330	625		86,970

TABLE 69

YEARLY TOTALS OF SALMONID COUNTED OVER ICE HARBOR DAM
1962-1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	CHUM	TOTAL SALMONID
1962	94,301	115,796	38	3,207		213,342
1963	61,190	74,539	1,118	1,933		138,780
1964	60,097	58,860	1,276	2,071		122,304
1965	39,233	62,873	317	320		102,743
1966	75,882	65,798	278	878		142,836
1967	84,930	44,205	717	3,770		133,622
1968	98,681	82,383	1,165	6,227		188,456
1969	100,514	63,889	745	5,316		170,464
1970	77,698	53,870	797	3,636		136,001
1971	70,248	67,029	532	2,969		140,778
1972	82,632	63,593	363	2,522	6	149,116
1973	81,821	38,311	233	2,443	4	122,812
1974	32,444	12,528	204	1,334	2	46,512
1975	31,686	16,218	243	1,559		49,706
1976	36,556	23,885	771	1,991		63,203
1977	56,514	54,820	582	1,561		113,477
1978	61,352	27,142	86	652		89,232
1979	13,929	23,117	30	398		37,474
1980	14,717	50,221	36	58		65,032
1981	22,092	41,290	142	82		63,606
1982	22,646	73,405	174	348		96,573
1983	20,259	88,485	216	465		109,425
1984	17,968	93,891	105	22		111,986
TOTAL	1,257,390	1,296,148	10,168	43,762	12	2,607,480
23-YEAR AVERAGE	54,669	56,354	442	1,903		113,369

TABLE 70

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER ICE HARBOR DAM
1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	823	7,232	5,390	1,999	223	1,940	361	-	-	17,968
STEELHEAD	-	-	-	2,218	488	52	4,024	4,560	50,583	31,966	-	-	93,891
SOCKEYE	-	-	-	-	-	24	76	2	3	-	-	-	105
COHO	-	-	-	-	-	-	-	2	20	-	-	-	22
TOTAL SALMONID	-	-	-	3,041	7,720	5,466	6,099	4,787	52,546	32,327	-	-	111,986
SHAD	-	-	-	-	-	33	8,107	360	4	-	-	-	8,504

TABLE 71
WATER TEMPERATURE AND STREAM FLOW DATA
ICE HARBOR PROJECT - 1984

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	54.1	5.0		54.0	.3		47.7	2.9	42.0
2	52.6	5.0		58.1	.3		58.2	1.9	43.0
3	66.5	5.0		49.8	.9		47.7	1.8	43.0
4	51.2	5.0		58.5	.9		31.4	1.7	43.0
5	64.2	5.0		48.7	1.0		52.3	1.7	43.0
6	76.1	5.0		50.7	1.0		36.5	1.7	43.0
7	61.8	4.0		53.6	1.2		46.2	1.7	43.0
8	61.8	4.0		42.9	1.2		46.6	2.7	43.0
9	66.6	1.0		43.8	1.0		50.0	2.7	43.0
10	65.9	1.0		41.9	1.0		51.3	2.7	45.0
11	56.4	1.0		48.0	1.0		58.0	3.0	46.0
12	58.9	1.0		65.9	1.0		77.8	3.0	46.0
13	54.7	1.0		70.1	1.3		71.2	3.0	46.0
14	59.8	1.0		60.3	2.3		78.6	2.8	46.0
15	44.4	1.0		65.7	2.4		86.0	3.0	46.0
16	64.9	1.0		64.0	2.4		100.2	3.1	46.0
17	62.3	2.0		54.8	2.4		100.5	2.2	46.0
18	63.5	2.0		38.6	2.4		100.3	2.2	46.0
19	55.2	2.0		41.8	1.5		100.9	2.2	46.0
20	58.6	3.0		43.2	1.5		96.8	1.7	47.0
21	25.7	3.0		51.4	1.5		85.5	1.0	47.0
22	43.4	2.9		52.0	.6		105.5	1.0	46.0
23	61.3	3.4		48.5	.6		134.9	1.0	48.0
24	51.7	3.2		45.9	1.0		105.2	1.0	48.0
25	72.6	3.6		30.8	1.0		119.1	1.0	48.0
26	88.4	3.6		46.3	2.1		114.0	1.0	48.0
27	83.9	2.0		65.2	2.7		113.7	1.3	49.0
28	70.8	1.0		44.4	2.8		106.5	1.5	49.0
29	67.2	1.4		40.2	2.9		101.5	1.5	48.0
30	68.8	.5					103.6	1.5	48.0
31	59.5	1.0					105.0	1.5	48.0
TOTALS	61.1			51.0			81.7		
AVERAGES									

TABLE 72

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1								107		83.2	.0	1.5	
2	0			1				118		108.4	4.7	1.9	
3								120		96.2	8.6	1.2	
4								132		98.3	8.4	1.2	
5								71		84.8	10.4	1.5	
6								83		94.3	9.7	1.5	
7	1							98		97.9	9.7	1.0	
8	7							107		96.5	10.4	1.3	
9	6							120		101.6	10.6	1.3	
10	3							137		99.5	10.4	1.3	
11	6							103		100.4	9.9	1.2	
12	9							82		98.7	10.1	1.2	
13	6							108		99.8	11.5	1.5	
14	18							89		92.7	39.8	1.5	
15	3							36		102.9	49.3	1.5	
16	20							72		105.7	18.1	1.6	
17	7							40		137.5	41.6	1.5	
18	9							25		135.9	43.0	1.5	
19	22							36		142.2	46.4	1.5	
20	17							53		139.9	54.1	1.5	
21	23							67		140.0	54.5	1.5	
22	40			1				68		133.0	53.3	1.7	
23	38							58		130.1	49.2	1.7	
24	17							40		134.6	42.4	1.8	-
25	21							50		134.5	37.7	1.8	
26	36							39		132.7	39.4	1.9	
27	43							39		127.7	41.4	1.9	
28	97							46		111.6	22.4	1.9	
29	173			3				42		114.8	42.4	1.8	
30	191			5				32		118.8	19.3	1.8	
TOTALS	813			10				2218					
AVERAGES	33			2				74		113.1	27.0		

TABLE 73

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	121			2				32		101.1	16.5	1.8	
2	180			4				29		105.9	15.3	1.8	
3	250			7				42		87.5	16.3	1.7	
4	237			12				26		101.1	17.8	1.8	
5	303			12				14		94.7	18.1	1.8	
6	167			7				15		119.8	36.2	2.0	
7	420			27				14		105.5	18.5	2.0	
8	518			53				17		104.5	18.3	1.7	
9	518			48				29		113.9	20.0	1.6	
10	439			41				32		118.9	20.6	1.5	
11	446			38				42		120.5	22.0	1.5	
12	369			31				26		119.9	23.9	1.7	
13	257			11				20		132.5	30.2	1.7	
14	247			40				16		155.7	51.5	1.7	
15	197			22				12		189.4	85.7	1.7	53.0
16	70			9				7		196.9	93.1	1.7	53.0
17	111			19				11		185.4	81.3	1.6	53.0
18	157			32				11		166.0	61.5	1.7	53.0
19	89			17				11		159.9	54.7	1.6	53.0
20	64			24				2		159.7	55.0	1.6	53.0
21	47			15				7		187.7	82.6	1.5	52.0
22	40			5				3		194.0	90.3	1.3	52.0
23	103			19				13		174.0	70.6	1.3	52.0
24	207			57				10		196.8	93.4	1.3	54.0
25	267			60				14		189.4	87.0	1.3	54.0
26	182			41				4		175.7	72.9	1.3	54.0
27	129			23				7		166.1	64.5	1.3	54.0
28	139			23				5		177.5	75.2	1.6	54.0
29	73			28				12		180.5	78 2	1.6	54.0
30	149			43				4		198.8	95.0	1.6	54.0
31	61			14				1		248.5	142.0	1.6	54.0
TOTALS	6457			775				488					
AVERAGES	208			25				16		152.5	55.1		

TABLE 74

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	37			16				1		224.4	122.2	1.3	54.0
2	65			3				1		205.3	101.0	1.4	54.0
3	67			18				2		203.2	98.0	1.4	54.0
4	46			17				2		175.9	72.4	1.4	54.0
5	35			8						174.3	69.0	1.4	54.0
6	13			3						187.5	80.9	1.4	54.0
7	19			6				1		179.7	73.3	1.1	54.0
8	38			14						179.5	72.8	1.0	54.0
9	75			21						181.0	74.7	1.3	54.0
10	166			30				1		171.1	64.3	1.0	54.0
11	306			12						165.5	61.1	1.8	55.0
12		238		48				4		165.6	61.9	1.7	56.0
13		166		29						165.4	61.6	1.8	56.0
14		309		38				1		175.6	71.2	1.8	56.0
15		286		39						186.8	81.9	1.9	57.0
16		139		42						189.5	169.6	1.9	57.0
17		45		6				2		191.9	185.9	2.0	57.0
18		60		7						199.7	125.7	2.0	57.0
19		138		13						187.1	97.0	2.1	57.0
20		276		25						186.9	95.3	2.1	57.0
21		125		15				1		202.8	103.5	2.1	57.0
22		63		7			2	1		220.2	119.2	1.8	57.0
23		119		21				1		180.0	80.8	2.0	58.0
24		254		28				3		181.4	82.8	2.0	58.0
25		282		34			1	2		170.4	72.2	2.0	58.0
26		162		13				1		180.8	86.5	2.0	58.0
27		141		21			2	6		181.0	88.2	2.0	58.0
28		280		38			4	8	5	177.5	82.1	2.0	59.0
29		430		58			10	9	4	171.6	84.2	2.0	60.0
30		323		57			5	5	24	151.8	73.7	2.0	60.0
TOTALS	867	3836		687			24	52	33				
AVERAGES	79	202		23			4	3	11	183.8	90.4		

TABLE 75

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		233		29			6	7	63	135.7	65.5	2.0	60.0
2		196		28			9	14	166	107.1	58.1	2.0	60.0
3		179		29			13	23	275	115.6	31.3	2.3	62.0
4		111		23			8	14	361	106.6	45.6	2.1	62.0
5		107		28			5	23	404	108.0	45.7	2.1	62.0
6		72		12			2	18	406	106.2	22.6	2.1	61.4
7		64		15			2	25	336	99.3	14.0	2.3	61.0
8		41		18			3	30	253	91.5	14.3	2.3	61.0
9		63		28			5	31	253	90.7	7.9	3.1	61.0
10		68		16			5	56	753	78.5	.0	2.9	63.0
11		48		28			3	34	780	74.1	.1	2.9	64.0
12		62		10			1	96	579	68.5	.0	2.9	64.0
13		34		13			5	83	368	68.9	.0	3.1	66.0
14		38		14			3	114	353	69.4	.0	3.5	66.0
15		47		19			5	123	223	37.0	.0	3.8	66.0
16		14		10			1	140	798	66.7	.0	4.3	67.0
17		26		16				244	294	58.1	.0	4.4	67.0
18		24		11				159	190	31.3	.0	4.9	68.0
19		16		3				127	214	42.3	.0	4.7	68.0
20		16		3				124	244	47.9	.0	4.7	69.0
21		23		2				166	156	38.2	.0	4.8	69.0
22		17		45				174	110	37.3	.0	4.8	69.0
23		26		4				215	89	30.5	.0	4.8	69.0
24		11		2				284	65	36.4	.0	4.8	69.0
25		7		1				195	52	35.8	.0	5.0	69.0
26		11		5				325	80	34.4	.0	5.0	69.0
27		11		2				273	21	40.8	.0	5.0	69.0
28		6		1				225	51	52.0	.0	5.0	70.0
29		5						266	31	42.3	.0	5.0	70.0
30		4						170	22	30.8	.0	5.0	70.0
31		4						246	117	51.7	.0	5.0	70.0
TOTALS		1584		415			76	4024	8107				
AVERAGES		51		15			5	130	262	65.6	9.8		

TABLE 76

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1								368	96	49.8	.0	5.0	70.0
2		5						420	32	45.2	.0	5.0	70.0
3		4						275	30	32.7	.0	5.0	70.0
4		2					1	204	23	34.5	.0	5.0	70.0
5		6		1				223	31	33.1	.0	5.0	70.0
6		2		3				257	18	33.7	.0	5.0	70.0
7		8		2				289	16	26.7	.0	5.0	70.0
8		6		2	1			241	16	28.3	.0	5.0	71.0
9		7		1				201	9	40.5	.0	5.0	71.0
10		15		1				277	8	37.4	.0	4.7	71.0
11		12		2				260	12	32.0	.0	4.7	71.0
12			5	3				170	5	25.1	.0	4.7	72.0
13			1					73	4	26.6	.0	4.7	72.0
14								87	7	25.2	.0	4.7	72.0
15			4	2				74	10	27.7	.0	4.7	72.0
16			3	3				80	7	25.9	.0	4.0	72.0
17			7					72	6	23.0	.0	4.0	72.0
18			3	1				67		17.5	.0	3.7	72.0
19			2					55	5	18.9	.0	3.7	72.0
20			10				1	56	3	26.4	.0	4.0	72.0
21			6					57		27.7	.0	4.7	72.0
22			7	2				86	2	23.5	.0	4.6	72.0
23			9					107	7	36.3	.0	4.5	72.0
24			4	1				93	2	36.6	.0	4.3	73.0
25			6	4				84	1	30.6	.0	4.2	72.0
26			5	1		1		46	2	17.4	.0	4.2	72.0
27			2	3				47		29.2	.0	4.2	72.0
28			15	2				55	7	15.2	.0	4.3	72.0
29			9					53		39.6	.0	3.4	71.0
30			11	2				93		26.9	.0	4.9	71.0
31			7	4				90	1	31.1	.0	5.0	71.0
TOTALS		67	116	40	1	1	2	4560	360				
AVERAGES		7	6	2	1	1	1	147	14	29.8	.0		

TABLE 77

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1984

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			29	9				191	2	26.9	.0	4.9	71.0
2			18	1			1	184		26.7	.0	4.9	71.0
3			28	3				194		27.3	.0	4.7	71.0
4			45	13				309		32.9	.0	4.2	71.0
5			41	14				490	2	31.2	.0	5.0	71.0
6			41	6				865		38.4	.0	5.0	71.0
7			29	11				884		44.5	.0	5.0	70.0
8			31	8				701		40.8	.0	4.2	70.0
9			30	10	1			682		28.1	.0	4.2	70.0
10			37	20				811		42.3	.0	4.3	70.0
11			75	19	2	1		1378		38.7	.0	4.3	70.0
12			90	17				1980		38.8	.0	4.3	69.0
13			69	14				1671		39.8	.0	3.8	69.0
14			35	19		1		2346		37.3	.0	3.8	69.0
15			56	26	1			2674		31.1	.0	3.4	69.0
16			44	17				2200		29.2	.0	3.4	69.0
17			21	15	1			1791		41.4	.0	3.4	69.0
18			45	28				2071		37.3	.0	5.0	68.0
19			46	38				2375		34.0	.0	5.0	68.0
20			55	26				2245		37.4	.0	4.9	68.0
21			48	28				2365		38.0	.0	5.0	67.0
22			61	22				2620		33.1	.0	5.0	67.0
23			32	15	2		1	2240		27.7	.0	4.5	67.0
24			26	11				1347		42.1	.0	3.0	66.0
25			33	23	1		1	3230		40.3	.0	4.1	66.0
26			36	15	1			2824		37.4	.0	4.3	65.0
27			137	90				2094		41.9	.0	2.5	64.0
28			43	30	5	1		3011		42.3	.0	4.3	64.0
29			15	27				2350		41.4	.0	4.6	63.0
30			32	37	2	1		2460		26.2	.0	4.6	63.0
TOTALS			1,328	612	16	4	3	50583	4				
AVERAGES			44	20	2	1	1	1686	2	35.8	.0		

TABLE 78

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			11	6				910		35.2	.0	4.6	62.0
2			12	13				1612		29.0	.0	4.6	62.0
3			16	7				1537		31.4	.0	4.6	62.0
4			11	7				1347		33.2	.0	4.6	62.0
5			11	12				1534		33.1	.0	4.6	62.0
6			13	9				1474		20.4	.0	4.8	62.0
7			11	5				1536		25.3	.0	4.8	62.0
8			15	6				1972		35.7	.0	4.8	62.0
9			9	9				1797		28.6	.0	4.8	62.0
10			8	7				1502		30.8	.0	4.8	62.0
11			8	8				1584		33.6	.0	4.8	62.0
12			8	10				2093		29.6	.0	4.8	62.0
13			10	7				1462		35.7	.0	4.8	62.0
14			14	6				1290		35.0	.0	4.8	62.0
15			3	4				763		39.8	.0	4.8	62.0
16			10	1				1027		29.5	.0	4.8	58.0
17			1	2				627		38.9	.0	4.9	58.0
18			2	8				687		27.9	.0	4.9	58.0
19			4	2				596		24.3	.0	4.9	58.0
20			3	3				494		43.2	.0	4.9	58.0
21			3	4				633		45.7	.0	5.0	58.0
22			2	2				524		41.3	.0	5.0	58.0
23			4					552		35.2	.0	5.0	58.0
24			3	6				558		37.1	.0	5.0	58.0
25			5					526		37.0	.0	5.0	58.0
26			4	1				629		42.4	.0	5.0	56.0
27			1	1				483		44.8	.0	5.0	56.0
28			2	5				433		50.8	.0	5.0	56.0
29			2	3				536		45.5	.0	5.0	56.0
30				1				684		40.5	.0	5.0	56.0
31								564		33482	.0	5.0	54.0
TOTALS			206	155				31966					
AVERAGES			7	6				1031		35.3	.0		

TABLE 79
WATER TEMPERATURE AND STREAM FLOW DATA
ICE HARBOR PROJECT - 1984

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	47.1	5.0	53.0	51.5	5.0	47.0
2	43.7	5.0	53.0	53.1	5.0	46.0
3	43.5	5.0	52.0	44.2	5.0	45.0
4	34.2	5.0	52.0	49.2	5.0	45.0
5	52.2	5.0	51.0	44.9	5.0	45.0
6	44.5	5.0	50.0	32.5	5.0	45.0
7	46.9	5.0	50.0	43.4	5.0	45.0
8	41.1	5.0	50.0	60.5	6.5	43.0
9	38.4	5.0	50.0	28.5	6.4	43.0
10	50.2	5.0	50.0	38.5	6.4	42.0
11	41.3	5.0	50.0	57.4	6.4	42.0
12	54.5	5.0	49.0	49.1	6.4	42.0
13	41.3	5.0	49.0	51.4	6.4	42.0
14	44.7	5.0	49.0	38.1	5.0	42.0
15	24.4	5.0	49.0	46.9	5.0	42.0
16	40.6	5.0	49.0	30.9	6.4	42.0
17	46.7	5.0	49.0	45.7	6.4	42.0
18	57.4	5.0	49.0	33.2	4.2	41.0
19	36.0	5.0	49.0	40.4	6.4	41.0
20	48.4	5.0	49.0	41.1	6.5	40.0
21	32.9	5.0	48.0	33.0	6.5	40.0
22	43.1	5.0	48.0	34.7	2.0	39.0
23	50.3	5.0	48.0	19.6	2.0	38.0
24	56.4	5.0	48.0	31.7	1.2	38.0
25	59.9	4.5	48.0	27.3	1.2	38.0
26	56.2	5.0	48.0	39.2	1.8	38.0
27	45.5	5.0	48.0	44.0	2.1	38.0
28	43.2	5.0	48.0	53.9	1.9	38.0
29	43.6	5.0	47.0	36.8	1.9	38.0
30	43.9	5.0	47.0	45.2	1.9	38.0
31				53.8	1.9	38.0
TOTALS	45.1			41.9		
AVERAGES						

TABLE 80

PEAK DAYS OF FISH MIGRATION
ICE HARBOR DAM - 1962-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1962	May 17	2,425	Jun 28	2,509	Sep 24	1,398	Sep 19	5,313	Jul 1	5	Sep 16	416
1963	May 12	1,843	Jun 25	1,150	Sep 27	812	Sep 27	2,741	Jul 8	125	Sep 14	116
1964	May 9	2,284	Jul 4	1,554	Sep 10	546	Sep 19	2,558	Sep 22	54	Sep 10	202
1965	May 22	1,300	Jul 3	924	Sep 18	653	Sep 18	2,246	Jul 8	104	Sep 19	70
1966	Apr 24	3,902	Jun 27	1,030	Sep 9	707	Sep 26	2,770	Jul 9	41	Sep 27	92
1967	Apr 28	2,423	Jul 7	1,448	Sep 18	1,570	Sep 19	1,820	Jul 12	123	Sep 18	289
1968	May 2	6,411	Jul 23	1,420	Sep 11	1,177	Sep 16	3,434	Jul 7	101	Sep 10	358
1969	May 19	2,993	Jun 25	1,673	Sep 20	910	Sep 21	1,841	Jul 1	50	Sep 20	339
1970	May 1	5,125	Jun 25	765	Sep 19	875	Sep 19	3,863	Jul 14	59	Sep 17	247
1971	May 26	2,189	Jul 9	1,036	Sep 12	669	Sep 25	2,494	Jul 23	45	Sep 12	243
1972	Apr 30	3,564	Jul 6	1,426	Sep 23	465	Sep 20	2,808	Jul 18	28	Sep 26	283
1973	Apr 29	4,821	Jun 18	1,062	Sep 15	712	Sep 19	1,698	Jul 11	27	Sep 13	163
1974	May 19	1,306	Jun 30	525	Sep 17	191	Sep 26	287	Jul 11	18	Sep 22	57
1975	May 23	1,789	Jul 7	427	Sep 17	157	Sep 16	450	Jul 11	25	Sep 16	87
1976	May 6	1,470	Jun 22	517	Sep 19	107	Sep 18	594	Jul 11	47	Sep 20	121
1977	May 1	2,343	Jun 23	561	Sep 17	111	Sep 27	2,250	Jul 4	49	Sep 17	84
1978	May 9	2,630	Jun 13	645	Sep 22	93	Sep 22	1,129	Jul 2	12	Sep 22	51
1979	May 12	484	Jun 12	99	Sep 16	98	Sep 27	596	Jun 25	7	Sep 11	28
1980	May 9,10	618	Jun 13	127	Sep 30	74	Sep 30	1,531	Jul 10	12	Sep 10,18,20	6
1981	Apr 29	1,017	Jun 26	379	Sep 19	99	Oct 7	1,187	Jul 2,4,6	12	Sep 8	16
1982	May 10	815	Jun 15	306	Sep 12	163	Sep 27	2,938	Jul 14	15	Sep 15	33
1983	May 8	609	Jun 15	218	Sep 18	86	Sep 15	3,258	Aug 4	13	Sep 14	23
1984	May 8	518	Jun 29	430	Sep 27	137	Sep 25	3,230	Jul 3	13	Sep 28	6

TABLE 81
MONTHLY COUNT OF CHINOOK SALMON
ICE HARBOR DAM - 1962-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING APR 1- JUN 11	SUMMER JUN 12- AUG 11	FALL AUG 12- OCT 31
1962				2,579	28,951	23,250	8,315	3,547	20,578	7,081			94,301	33,613	30,639	30,049
1963				3,434	21,790	14,001	7,591	1,415	9,342	2,918	677	22	61,190	26,778	20,875	13,537
1964		1	2	4,048	19,611	5,409	18,832	2,161	8,159	1,701	156	17	60,097	24,304	24,696	11,097
1965			4	1,677	9,649	5,072	10,209	803	9,318	2,152	349		39,233	12,178	14,701	12,354
1966				23,382	19,294	10,611	7,166	1,933	10,756	2,740			75,882	43,881	16,983	15,018
1967				15,973	18,137	9,020	22,218	820	11,947	6,815			84,930	35,593	30,315	19,022
1968				1,595	41,398	12,119	17,751	3,433	16,588	5,275	493	29	98,681	44,773	29,531	24,377
1969			195	697	43,181	24,918	12,861	2,369	12,027	3,555	708	3	100,514	52,090	30,917	17,507
1970				12,167	33,881	12,338	8,185	1,747	7,702	1,456	219	3	77,698	47,931	19,382	10,385
1971				1,104	25,089	19,265	13,364	873	8,960	1,593			70,248	32,638	26,606	11,004
1972				14,535	34,734	7,544	15,177	1,869	6,089	2,684			82,632	50,350	22,846	9,436
1973				34,277	23,627	10,925	4,254	840	6,657	1,241			81,821	60,639	12,829	8,353
1974				842	16,670	5,315	6,494	483	2,066	574			32,444	19,361	10,269	2,814
1975				1,314	17,796	5,817	3,972	506	1,875	406			31,686	21,401	7,727	2,558
1976				3,146	19,269	8,544	3,921	349	1,123	204			36,556	25,056	10,026	1,474
1977				24,003	17,626	9,328	3,606	297	1,370	284			56,514	44,421	10,337	1,756
1978				14,891	29,333	9,999	4,888	892	1,064	269	16		61,352	49,303	10,440	1,609
1979				1,731	6,528	2,234	1,216	379	1,489	333	19		13,929	9,247	2,608	2,074
1980				1,678	7,321	2,285	1,569	301	1,034	504	25		14,717	9,668	3,305	1,744
1981			1	6,744	8,542	2,884	1,751	161	1,530	470	9		22,092	16,167	3,814	2,111
1982			3	656	11,543	4,522	2,347	283	2,601	691			22,646	14,600	4,527	3,519
1983				1,925	9,418	4,132	1,921	316	1,945	602			20,259	12,189	4,321	1,771
1984				813	6,457	4,703	1,584	183	1,328	206			15,274	8,137	5,487	1,650
TOTAL		1	205	173,211	469,845	214,235	179,172	25,960	145,548	43,754	2,671	74	1,254,696	694,318	353,181	205,219
23-YEAR AVERAGE			10	7,531	20,428	9,315	7,791	1,129	6,328	1,902			54,552	30,188	15,356	8,923

TABLE 82

MONTHLY COUNT OF STEELHEAD TROUT
ICE HARBOR DAM - 1962 - 1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1962				8,758	716	261	2,384	7,450	75,924	20,303			115,796
1963				969	895	163	2,157	6,514	35,382	24,070	4,042	347	74,539
1964	105	136	796	2,269	807	153	1,596	9,462	34,435	7,357	1,347	397	58,860
1965	31	110	673	1,976	488	439	3,739	4,497	33,595	13,522	3,803		62,873
1966				2,161	810	413	1,383	2,517	40,185	18,329			65,798
1967				1,266	894	345	972	953	18,914	20,861			44,205
1968				2,558	2,933	357	952	8,107	45,552	17,270	3,692	962	82,383
1969	132	41	807	4,971	2,430	321	3,348	5,715	27,219	14,953	3,874	78	63,889
1970				1,597	1,067	389	2,620	7,611	30,101	8,290	1,891	304	53,870
1971			458	1,938	843	215	3,064	2,996	42,481	15,034			67,029
1972				1,853	553	152	3,062	6,503	34,134	17,336			63,593
1973				1,570	827	254	1,785	2,699	22,021	9,155			38,311
1974				972	359	104	1,482	2,202	3,661	3,748			12,528
1975				564	409	76	1,223	3,878	6,816	3,252			16,218
1976				508	142	165	1,714	5,138	11,141	5,077			23,885
1977				685	220	308	3,654	3,017	30,610	16,326			54,820
1978				908	88	43	1,308	2,907	15,094	6,092	702		27,142
1979			454	538	114	60	1,995	1,778	6,136	9,717	2,325		23,117
1980			1,420	2,796	563	39	1,303	4,333	22,064	15,424	2,279		50,221
1981			797	1,106	433	137	2,305	1,431	16,563	16,669	1,849		41,290
1982			1,471	1,931	918	45	2,564	8,895	30,574	27,007			73,405
1983				1,001	150	36	3,773	9,875	48,519	25,121			88,485
1984				2,218	488	52	4,024	4,560	50,583	31,966			93,891
TOTAL	268	287	6,876	45,123	17,147	4,527	42,407	113,038	681,704	346,879	25,804	2,088	1,296,148
23-YEAR AVERAGE			327	1,962	746	197	2,279	4,915	29,639	15,082			56,354

TABLE 83

YEARLY TOTALS OF SALMONID FISH COUNTED OVER LOWER MONUMENTAL DAM
1969-1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	TOTAL SALMONID
1969	86,700	71,434	1,127	6,466	165,727
1970	75,310	62,167	240	2,972	140,689
1971	68,885	70,114	808	2,171	141,978
1972	72,220	66,857	415	733	140,225
1973	80,557	39,530	206	1,333	121,626
1974	31,728	15,139	114	812	47,793
1975	33,013	17,363	146	572	51,094
1976	34,395	21,822	364	361	56,942
1977	49,301	47,749	293	122	97,465
1978	56,835	20,540	96	218	77,689
1979	11,288	17,794	31	194	29,307
1980	10,885	34,322	48	73	45,328
1981	19,991	35,923	136	63	56,113
1982	21,965	62,772	154	89	84,980
1983	19,082	80,562	118	110	99,872
1984	18,035	89,086	334	26	107,481
TOTAL	690,190	753,174	4,630	16,315	1,464,309
16-YEAR AVERAGE	43,137	47,073	289	1,020	91,519

TABLE 84

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER LOWER MONUMENTAL DAM
1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	514	7,186	6,297	2,700	205	794	339	-	-	18,035
STEELHEAD	-	-	-	2,726	482	52	3,541	4,808	42,770	34,707	-	-	89,086
SOCKEYE	-	-	-	-	-	-	330	1	2	1	-	-	334
COHO	-	-	-	-	-	-	-	1	23	2	-	-	26
TOTAL SALMONID	-	-	-	3,240	7,668	6,349	6,571	5,015	43,589	35,049	-	-	107,481
SHAD	-	-	-	-	-	128	9,883	472	5	3	-	-	10,491

TABLE 85
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER MONUMENTAL - 1984

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	53.6			55.8			50029		
2	59.8			60.3			61.1		
3	60.1			53.3			50.6		
4	60.1			59.8			30.2		
5	67.2			50.6			52.7		
6	73.7			50.6			38.7		
7	64.5			55.8			46.9		
8	63.1			45.6			46.8		
9	68.7			44.0			51.8		
10	63.1			45.5			55.8		
11	61.6			51.0			60.7		
12	62.7			66.3			79.2		
13	54.2			66.8			70.4		
14	59.6			64.0			80.5		
15	51.3			69.1			86.7		
16	61.7			63.7			101.5		
17	65.7			57.0			105.4		
18	65.4			41.6			104.1		
19	55.1			44.1			104.9		
20	60.6			43.3			94.5		
21	29.7			51.7			91.4		
22	45.9			52.7			110.2		
23	60.4			49.4			130.2		
24	55.1			45.5			109.6		
25	74.7			33.8			117.7		
26	89.2			48.1			113.5		
27	82.9			62.2			113.8		
28	74.5			45.8			108.8		
29	73.0			39.0			104.0		
30	68.4						103.2		
31	62.5						105.9		
TOTALS	62.8			52.3			85.3		
AVERAGES									

*Water quality data was not collected 1 January thru 1 April 1984

TABLE 86

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	0							115		89.7	4.1	.4	45.0
2	0							109		103.5	5.0	.6	45.0
3	0							85		98.9	14.8	.7	45.0
4	0							128		98.1	8.8	.7	45.0
5	0							116		89.3	10.6	.7	46.0
6	0							119		94.4	10.4	1.0	46.0
7								134		100.8	10.5	1.0	46.0
8								159		94.3	10.4	1.0	46.0
9	2							102		106.4	10.9	.7	47.0
10	5							165		102.0	10.8	.7	47.0
11	1							104		101.0	10.5	7	47.0
12	5							80		103.0	10.6	.7	47.0
13	1							68		101.4	25.1	.7	47.0
14	2							51		90.3	64.3	.9	47.0
15								60		107.8	80.5	1.0	48.0
16	9							88		108.3	27.7	1.0	48.0
17	12							99		137.0	46.4	1.0	48.0
18	14							88		132.0	67.1	1.0	48.0
19	9							75		138.2	63.8	1.2	49.0
20	10							87		140.7	73.5	1.2	50.0
21	14							71		141.0	80.5	1.0	50.0
22	5							46		125.3	80.5	1.0	49.0
23	9							87		131.4	77.2	1.0	49.0
24	30			9				76		135.3	43.1	1.2	49.0
25	41			4				70		131.6	55.5	1.2	49.0
26	73			5				107		131.9	54.8	1.2	49.0
27	53							80		125.6	62.3	1.2	50.0
28	26			4				69		109.4	49.5	1.0	50.0
29	25							24		117.5	63.0	1.2	50.0
30	139			7				24		119.9	15.5	1.2	50.0
TOTALS	485			29				2726					
AVERAGE	18			6				91		113.5	38.3		

TABLE 87

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	71			2				31		101.3	15.5	1.2	50.0
2	90			2				35		101.4	14.0	1.2	50.0
3	83			5				31		94.7	15.6	1.2	50.0
4	121			3				14		99.9	20.1	1.2	50.0
5	98			8				22		98.9	18.4	1.2	50.0
6	159			8				20		122.3	47.7	1.2	50.0
7	271			13				38		109.5	18.4	1.2	50.0
8	171			13				21		102.9	18.4	1.2	51.0
9	391			25				19		119.0	18.4	1.2	51.0
10	383			36				23		119.8	18.5	1.2	51.0
11	896			63				35		117.9	20.9	1.2	51.0
12	424			27				21		125.4	23.5	1.5	51.0
13	694			48				28		129.4	23.8	1.5	51.0
14	331			25				25		158.1	45.3	1.5	52.0
15	213			16				9		184.0	69.4	1.5	52.0
16	254			28				12		201.6	86.5	1.3	52.0
17	223			20				18		183.4	69.0	1.3	53.0
18	146			9				5		168.4	53.6	1.2	53.0
19	84			19				3		156.9	43.5	1.2	53.0
20	41			15				8		163.8	50.4	1.2	53.0
21	37			16				11		186.8	71.6	1.2	53.0
22	58			26				9		191.2	77.3	1.2	53.0
23	79			20				7		174.0	60.1	1.2	53.0
24	74			20				4		197.9	85.5	1.5	54.0
25	104			20				2		189.9	77.5	1.2	54.0
26	122			52				4		175.2	59.6	1.5	54.0
27	144			33				8		164.1	49.3	1.5	54.0
28	171			39				7		177.0	62.4	1.5	54.0
29	122			39				2		180.1	66.0	1.5	54.0
30	166			41				4		200.3	84.1	1.5	54.0
31	222			52				6		245.1	132.6	1.5	54.0
TOTALS	6443			743				482					
AVERAGE	208			24				16		152.9	48.9		

TABLE 88

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	46			19				2		229.6	114.9	1.5	55.0
2	41			28				1		214.7	93.4	1.5	55.0
3	5			10				2		203.5	83.9	1.5	55.0
4	21			22				7		179.8	58.8	1.5	55.0
5	45			20						179.2	57.5	.5	55.0
6	29			15						186.4	70.2	.8	54.0
7	48			11				2		175.0	58.9	1.0	54.0
8	116			31						180.3	66.1	1.0	54.0
9	156			35				2		186.0	77.0	1.0	54.0
10	256			31				1		169.7	60.5	1.0	54.0
11	151			50				1		166.6	55.7	1.0	55.0
12	317			55						163.9	51.1	1.0	55.0
13	323			61				3		164.7	52.3	1.2	55.0
14		165		49				2		176.1	62.3	1.4	55.0
15		312		48				1		182.6	71.7	2.0	56.0
16		219		36						185.9	169.1	2.0	56.0
17		172		23				1		194.4	190.4	2.0	56.0
18		208		25				1		198.2	107.7	2.0	57.0
19		166		23				1	2	182.8	92.5	2.0	57.0
20		133		24				1	11	188.7	93.7	2.0	58.0
21		150		33				1		197.7	89.0	2.5	58.0
22		117		22				1		219.8	121.1	2.5	58.0
23		101		17				4		178.7	65.3	2.5	58.0
24		103		17				3	5	179.7	71.5	2.5	58.0
25		166		22				1	1	166.2	51.3	2.5	58.0
26		359		35				4	2	184.6	73.5	2.5	58.0
27		417		38				1	1	176.7	66.3	2.5	58.0
28		213		39				1	22	174.7	68.4	2.5	59.0
29		362		77				6	41	166.3	75.0	2.5	60.0
30		365		99				2	43	151.6	60.3	2.5	61.0
TOTALS	1554	3728		1015				52	128				
AVERAGE	120	219		34				2	14	183.5	81.0		

TABLE 89

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		409		83			4	2	84	132.0	80.5	2.5	61.0
2		227		61			3	6	48	111.2	67.9	2.5	61.0
3		187		33			6	6	142	112.1	47.1	2.5	62.0
4		145		46			4	13	117	108.9	47.3	2.0	62.0
5		64		23			4	16	38	109.7	47.6	2.0	62.0
6		100		32			4	7	263	106.8	19.0	2.0	62.0
7		108		25			2	14	271	102.0	14.0	1.9	62.0
8		74		20				8	377	92.1	13.6	2.5	62.0
9		63		25			4	3	355	91.0	11.0	2.0	63.0
10		42		12			3	5	460	78.6	4.2	2.0	64.0
11		41		23			3	15	469	76.9	4.2	2.0	64.0
12		20		10			2	17	333	70.7	.9	2.0	65.0
13		73		37			6	37	666	70.4	.0	2.0	65.0
14		57		27			4	66	395	71.9	.0	2.0	65.0
15		43		22			7	83	262	36.7	.0	2.0	66.0
16		33		11			1	74	351	69.9	.0	2.5	66.0
17		34		11			2	90	296	60.8	.0	2.5	67.0
18		60		14				148	228	34.6	.0	2.5	67.0
19		41		15				145	502	46.6	.0	2.5	67.0
20		47		8				125	282	48.7	.0	3.0	68.0
21		11		7				166	214	39.8	.0	3.0	68.0
22		13		2				114	189	44.0	.0	3.0	68.0
23		17		10				184	150	31.0	.0	3.0	68.0
24		13		8				267	268	39.1	.0	3.0	68.0
25		143		16			271	589	2389	37.3	.0	3.0	67.0
26		11		6				296	180	39.9	.0	3.0	69.0
27		16		10				185	90	43.9	.0	3.0	69.0
28		2						175	178	54.1	.0	3.0	69.0
29		3		2				271	145	43.9	.0	3.0	70.0
30		1						192	53	35.2	.0	3.0	71.0
31		1		2				222	88	52.9	.0	3.0	71.0
TOTAL		2099		601			330	3541	9883				
AVERAGE		68		21			19	114	319	67.5	11.5		

TABLE 90

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		3		4				319	108	50.0	.0	3.0	71.0
2		6		4				334	90	45.9	.0	3.0	72.0
3		10		6			1	422	43	33.0	.0	3.0	72.0
4		7		1				354	51	40.5	.0	3.0	72.0
5		3						243	12	38.3	.0	3.0	72.0
6		5						166	19	36.8	.0	3.0	72.0
7		5		2				219	30	30.8	.0	3.0	72.0
8		8		2				300	45	29.7	.0	3.0	72.0
9		3						212	14	40.5	.0	3.0	72.0
10		5		5				262	8	37.5	.0	3.0	72.0
11		8		2				189	2	35.8	.0	3.0	72.0
12		8		2				208	11	28.5	.0	3.0	72.0
13		13						251	5	28.4	.0	3.0	72.0
14			7	1				157	4	25.2	.0	3.0	72.0
15			3					76	11	30.4	.0	3.0	72.0
16			4					88	4	24.8	.0	3.0	72.0
17			1	1				133	9	26.6	.0	3.0	72.0
18			2	3				59		22.7	.0	3.0	72.0
19			4					90	2	18.7	.0	3.0	72.0
20			4					93		26.2	.0	3.0	72.0
21			6	1				64		35.5	.0	3.0	72.0
22			1					20		28.0	.0	3.0	72.0
23			1	1				32		36.8	.0	3.0	73.0
24			15	1				175	1	35.0	.0	3.0	73.0
25			3	2	1			74		33.3	.0	3.0	73.0
26								55		17.9	.0	3.0	73.0
27			4					52		29.6	.0	3.0	73.0
28								43		17.0	.0	3.0	73.0
29			5	3				25	2	40.1	.0	3.0	73.0
30			9	1				48	1	27.6	.0	3.0	73.0
31			7	3				45		33.9	.0	3.0	73.0
TOTAL		84	76	45	1		1	4808	472				
AVERAGES		6	5	2	1		1	155	22	31.8	.0		

TABLE 91

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			12	2	1	1		145		28.2	.0	3.0	72.0
2			11	1	2			86		28.5	.0	3.0	73.0
3			22	4	3			146		27.3	.0	3.0	72.0
4			10	2				151		33.8	.0	3.0	72.0
5			14	3				174	1	33.2	.0	3.0	72.0
6			22	13				550		39.0	.0	3.0	71.0
7			10	9				561		45.8	.0	3.0	70.0
8			15	11				892		40.8	.0	3.0	70.0
9			3	7				700		29.0	.0	3.0	69.0
10			10	12				476		42.9	.0	3.0	69.0
11			11	10				841		40.0	.0	3.0	69.0
12			12	10				943		41.1	.0	3.0	69.0
13			13	5				966		40.1	.0	3.0	68.0
14			21	24	1			1855		40.2	.0	3.0	68.0
15			14	19	2			1629		33.2	.0	3.0	68.0
16			18	22	3			1758		29.4	.0	3.0	67.0
17			9	5				1655		43.9	.0	3.0	67.0
18			8	18				2325		37.7	.0	3.0	67.0
19			26	11				1470		36.2	.0	3.0	67.0
20			10	22				1723		37.9	.0	3.0	67.0
21			21	40				2906		39.4	.0	3.0	66.0
22			18	26	5			3295		33.9	.0	3.0	66.0
23			7	14	2			1982		29.2	.0	3.0	66.0
24			5	16				1289		41.5	.0	3.0	66.0
25			15	9	1			1800	1	42.5	.0	3.0	65.0
26			4	9				1317		38.7	.0	3.0	64.0
27			22	13				3089	1	41.9	.0	4.0	64.0
28			17	13	2			2629	1	45.0	.0	4.0	63.0
29			14	22			1	3154		42.3	.0	4.0	63.0
30			8	20			1	2263	1	27.0	.0	4.0	63.0
TOTALS			402	392	22	1	2	42770	5				
AVERAGE			13	13	2	1	1	1426	1	37.0	.0		

TABLE 92

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			13	21				2689		37.3	.0	4.0	63.0
2			19	19				3346		30.2	.0	4.0	62.0
3			16	16				1022	2	31.1	.0	4.0	62.0
4			5	7				2087		34.5	.0	4.0	62.0
5			2	8				744		33.4	.0	4.0	62.0
6			4	5				1523		21.2	.0	4.0	61.0
7			7	4				1090		25.6	.0	4.0	61.0
8			9	8		2		1452		36.4	.0	4.0	61.0
9			8	13				1197		29.5	.0	4.0	61.0
10			9	16			1	2074		31.3	.0	4.0	60.0
11			9	13				2199		33.7	.0	4.0	60.0
12			6	7				1374		30.1	.0	4.0	60.0
13			7	12				1849		36.3	.0	4.0	60.0
14			4	9				1367		36.1	.0	4.0	59.0
15			4	12				1940		39.7	.0	4.0	59.0
16			2	4				1080		30.9	.0	4.0	58.0
17				2				1142		40.2	.0	4.0	58.0
18			3	2				620		28.4	.0	4.0	57.0
19			0	3				457		26.1	.0	4.0	57.0
20			1	5				850		45.3	.0	4.0	57.0
21			0					520		46.7	.0	4.0	56.0
22			1	2				388		41.8	.0	4.0	56.0
23			0	2				201	1	34.9	.0	4.0	56.0
24			0					366		40.7	.0	4.0	55.0
25			2	5				723		39.2	.0	4.0	55.0
26			0					424		42.9	.0	4.0	55.0
27			0	1				546		45.1	.0	4.0	55.0
28			0					376		52.0	.0	4.0	55.0
29			2	2				461		45.6	.0	4.0	55.0
30			2	3				334		42.3	.0	4.0	55.0
31			2	1				266		37.5	.0	4.0	55.0
TOTAL			137	202		2	1	34707	3				
AVERAGE			5	7		2	1	1120	1	36.3	.0		

TABLE 93
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER MONUMENTAL PROJECT - 1984

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	45.7			53.8		
2	46.1			51.8		
3	43.1			47.7		
4	38.4			47.5		
5	52.2			49.0		
6	45.0			35.5		
7	50.0			45.7		
8	40.2			59.9		
9	41.2			31.0		
10	48.9			41.5		
11	46.9			57.6		
12	55.8			51.0		
13	39.2			51.6		
14	48.1			40.8		
15	27.8			47.5		
16	42.9			31.4		
17	47.0			46.3		
18	58.9			33.9		
19	35.3			44.0		
20	50.3			39 4		
21	34.4			33.8		
22	44.6			36.3		
23	50.7			21.4		
24	57.7			33.5		
25	57.3			27.2		
26	56.2			40.9		
27	48.7			46.3		
28	43.6			55.0		
29	45.1			38.3		
30	46.3			42.8		
31				61.9		
TOTALS	46.3			43.4		
AVERAGES						

*Water quality data was not collected 1 November thru 31 December 1984

TABLES 94

PEAK DAYS OF FISH MIGRATION
LOWER MONUMENTAL DAM - 1969-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1969	May 17	2,915	Jun 26	1,630	Sep 24	899	Sep 24	2,680	Jul 11	64	Sep 17	572
1970	May 3	4,472	Jun 16	1,054	Sep 20	512	Sep 20	3,588	Jul 15	23	Sep 13	181
1971	May 27	2,275	Jun 17	1,180	Sep 16	673	Sep 26	2,557	Jul 18	65	Sep 12	189
1972	May 3	3,531	Jul 6	1,445	Sep 19	296	Sep 30	2,936	Jul 19	28	Sep 20	53
1973	May 6	5,075	Jun 19	863	Sep 15	515	Sep 21	2,658	Jul 8	25	Sep 21	113
1974	May 20	1,252	Jun 29	579	Sep 21	171	Oct 10	354	Jul 15	18	Sep 17	40
1975	May 24	1,255	Jul 12	414	Sep 16	208	Sep 16,17	448	Jul 15	19	Sep 12	57
1976	May 7	1,269	Jun 23	468	Sep 14	115	Sep 27	590	Jul 9	29	Sep 12	27
1977	Apr 20	1,800	Jun 24	452	Sep 20	115	Sep 27	1,925	Jul 5	41	Sep 20	14
1978	May 9	3,068	Jun 19	580	Sep 27	42	Sep 26	781	Jul 3	9	Sep 17	22
1979	May 24	520	Jul 1	111	Sep 21	66	Oct 9	459	Jun 24	5	Oct 7	25
1980	May 6	364	Jun 29	127	Sep 30	57	Sep 30	1,181	Jul 12	6	Sep 12	6
1981	May 4	833	Jun 29	314	Sep 17	85	Oct 6	1,323	Jul 6	13	Sep 17	8
1982	May 10	911	Jun 14	318	Sep 21	161	Sep 30	2,524	Jul 15	14	Sep 24	15
1983	May 22	679	Jun 19	243	Sep 21	53	Sep 29	3,383	Aug 4	9	Sep 16	7
1984	May 13	694	Jun 27	417	Sep 19	26	Sep 22	3,295	Jul 25	271	Sep 22	5

TABLE 95

MONTHLY TOTALS OF CHINOOK COUNTED OVER LOWER MONUMENTAL DAM
1969 - 1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1969			1	67	38,702	25,289	13,832	1,776	5,069	1,619	340	5	86,700
1970	1		1	9,194	32,623	15,818	9,369	1,720	5,178	1,281	122	3	75,310
1971				358	19,340	23,842	14,492	857	8,599	1,397			68,885
1972				6,838	36,448	6,989	15,501	1,835	3,737	872			72,220
1973				27,168	31,973	11,282	4,343	678	4,273	840			80,557
1974				327	15,796	4,904	7,241	602	1,972	886			31,728
1975				704	17,421	6,648	4,884	548	2,428	380			33,013
1976				1,995	19,292	7,731	3,172	175	1,609	421			34,395
1977				19,125	17,093	7,884	3,092	300	1,321	486			49,301
1978				12,324	30,067	8,941	3,853	831	536	283			56,835
1979				1,332	5,637	2,010	922	211	916	260			11,288
1980				1,008	5,198	2,318	1,315	319	405	322			10,885
1981				4,039	9,012	3,349	1,924	97	1,100	470			19,991
1982				372	11,319	5,031	2,773	264	1,631	575			21,965
1983				1,250	10,262	3,841	2,103	220	1,008	398			19,082
1984				514	7,186	6,297	2,700	205	794	339			18,035
TOTAL	1		2	86,615	307,369	142,174	91,516	10,638	40,576	10,829	462	8	690,190
16-YEAR AVERAGE				5,413	19,211	8,886	5,720	665	2,536	677			43,137

TABLE 96

MONTHLY COUNT OF STEELHEAD TROUT
LOWER MONUMENTAL DAM - 1969-1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1969		5	1,525	9,235	5,475	248	2,141	6,410	26,647	15,195	4,189	366	71,436
1970	252	1,025	1,519	3,143	2,134	232	1,989	7,947	30,701	11,194	1,615	416	62,167
1971			422	2,404	1,510	131	2,199	2,992	42,438	18,018			70,114
1972				2,182	744	86	2,336	7,184	32,417	21,908			66,857
1973				2,061	658	82	2,060	3,505	21,241	9,923			39,530
1974				1,221	256	17	1,237	2,835	4,929	4,644			15,139
1975				745	444	24	873	4,417	7,437	3,423			17,363
1976				806	256	146	1,092	4,409	10,328	4,785			21,822
1977				849	192	127	3,026	2,991	22,494	18,070			47,749
1978				1,324	128	16	719	2,522	10,477	5,354			20,540
1979				643	118	28	1,314	1,937	4,898	8,856			17,794
1980				2,467	573	70	754	3,725	14,078	12,655			34,322
1981				996	321	75	1,783	1,632	12,416	18,700			35,923
1982				2,026	1,123	35	1,851	7,373	22,426	27,938			62,772
1983				1,021	131	14	3,027	10,101	40,004	26,264			80,562
1984				2,726	482	52	3,541	4,808	42,770	34,707			89,806
TOTAL	252	1,030	3,466	33,849	14,545	1,383	29,942	74,788	345,701	241,634	5,804	782	753,176
16-YEAR AVERAGE				2,116	909	86	1,871	4,674	21,606	15,102			47,074

TABLE 97

YEARLY TOTALS OF SALMONID FISH COUNTED OVER LITTLE GOOSE DAM
1970 - 1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	TOTAL SALMONID
1970	72,971	59,640	163	2,480	135,254
1971	61,402	70,013	891	2,701	135,007
1972	64,211	63,638	408	799	129,056
1973	70,605	38,820	192	1,157	110,774
1974	26,787	14,784	124	532	42,227
1975	26,960	15,225	173	697	43,055
1976	32,359	20,894	644	733	54,630
1977	49,176	47,388	574	438	97,576
1978	56,069	24,927	168	307	81,471
1979	12,515	21,049	72	390	34,026
1980	10,605	38,627	88	124	49,444
1981	19,086	38,680	200	120	58,086
TOTAL	502,746	453,685	3,697	10,478	970,606
12-YEAR AVERAGE	41,896	37,807	308	873	80,884

NOTE: 1981 concludes visual fish counting at Little Goose Dam. Counting is now done by an automatic system.

NOTE: 1983 concludes monitoring at Little Goose Dam.

TABLE 98

YEARLY TOTALS OF SALMONIDS COUNTED OVER LOWER GRANITE DAM
1975 - 1984

YEAR	CHINOOK	STEELHEAD	SOCKEYE	COHO	TOTAL SALMONID
1975	28,460	17,311	209	921	46,901
1976	31,667	23,017	531	900	56,115
1977	49,123	53,037	458	268	102,886
1978	54,246	30,068	123	152	84,589
1979	12,548	25,046	25	158	37,777
1980	10,986	40,454	96	43	51,579
1981	19,198	40,234	218	17	59,667
1982	19,476	72,840	211	59	92,586
1983	16,200	86,234	122	51	102,607
1984	16,533	98,952	47	-	115,532
TOTAL	258,437	487,193	2,040	2,569	750,239
10-YEAR AVERAGE	25,844	48,719	204	285	75,024

TABLE 99
MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER LOWER GRANITE DAM
1969 - 1984

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	134	4,915	5,627	4,274	303	711	523	46	-	16,533
STEELHEAD	-	-	2,655	3,924	962	40	1,896	3,458	34,709	46,445	4,841	22	98,952
SOCKEYE	-	-	-	-	-	-	45	2	-	-	-	-	47
COHO	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	2,655	4,058	5,877	5,667	6,215	3,763	35,420	46,968	4,887	22	115,532
SHAD	-	-	-	-	-	-	64	250	4	2	-	-	320

TABLE 100
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER GRANITE PROJECT - 1984

DATE	JANUARY			FEBRUARY		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	57.1	5.0		60.5	2.0	
2	53.9	5.0		56.2	2.5	
3	50.9	5.0		58.7	2.5	
4	55.2	4.5		56.8	3.3	
5	60.3	4.0		52.0	3.5	
6	60.2	4.0		49.6	4.7	
7	60.8	4.0		50.2	4.0	
8	59.6	4.5		44.5	4.5	
9	60.1	2.0		44.2	4.0	
10	59.3	2.5		51.5	4.0	
11	57.5	2.3		49.4	4.0	
12	58.6	3.5		59.4	4.0	
13	55.7	2.5		55.6	3.2	
14	61.5	2.7		58.6	4.0	
15	57.3	2.7		55.3	3.7	
16	54.0	2.8		57.6	3.8	
17	61.9	2.6		55.8	2.5	
18	58.3	4.6		48.5	1.5	
19	54.9	4.8		49.2	1.5	
20	56.1	5.0		45.0	1.7	
21	50.7	5.0		50.7	2.5	
22	40.8	5.0		41.4	2.8	
23	60.5	4.8		49.7	3.0	
24	53.0	4.5		44.6	3.0	
25	62.5	1.9		37.4	4.0	
26	79.3	.7		40.1	4.2	
27	69.4	.7		47.4	4.5	
28	70.9	.7		40.4	3.0	
29	64.4	1.0		45.8	3.5	
30	62.8	1.0				
31	59.7	1.5				
TOTALS	58.9			50.2		
AVERAGES						

TABLE 101

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MARCH 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1								7		41.5	.0	4.4	
2								18		55.1	.0	4.4	
3								32		51.2	.0	4.5	
4								52		35.7	.0	4.4	
5								38		45.4	.0	4.3	
6								20		48.1	.0	2.2	
7								55		53.0	.0	2.1	
8								61		43.4	.0	2.3	
9								48		48.3	.0	3.0	
10								25		53.0	.0	3.0	
11								30		56.4	.0	3.0	
12								32		66.9	.0	2.7	
13								73		67.3	.0	2.5	
14								92		81.5	.0	1.8	
15								118		93.1	.0	1.0	
16								84		100.1	.0	2.1	
17								43		97.9	.0	.7	
18								103		99.7	.0	.8	
19								181		96.1	.0	1.6	
20								114		94.2	.0	2.2	
21								146		95.0	.0	2.2	
22								144		108.0	.0	.8	
23								97		122.9	.0	.7	
24								209		109.9	5.3	1.3	
25								130		115.5	9.4	1.6	
26								191		111.8	9.6	1.2	
27								130		111.5	10.6	.7	
28								130		105.6	11.4	.7	
29								125		101.4	9.9	1.0	
30	0							0		97.2	10.0	1.0	
31								127		97.2	10.0	1.3	
TOTAL	0							2655					
AVERAGE	0							86		80.8	2.5		

TABLE 102

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1								217		90.8	10.0	1.4	
2								191		96.3	10.8	1.3	
3								195		90.4	14.9	1.3	
4								237		95.0	8.2	1.4	
5								156		89.6	9.9	1.5	
6				1				216		91.5	9.9	1.7	
7								183		101.6	9.9	1.8	
8								168		99.5	9.9	2.0	
9								141		104.4	9.8	1.7	
10								103		99.8	9.9	1.8	
11								101		102.8	9.7	1.8	
12								94		101.7	9.9	1.6	
13								89		101.3	9.8	1.6	
14	5							75		101.3	35.9	1.8	
15	2			1				165		102.4	49.1	2.2	
16	4			1				288		109.4	16.0	2.4	
17	1							156		134.6	42.1	2.2	
18	2							149		140.5	42.7	2.2	
19								95		143.7	38.4	1.9	
20	1			1				114		141.0	40.7	1.6	
21	1							69		141.9	49.7	1.4	
22	8							48		134.4	49.9	1.5	
23	4			1				59		132.6	51.3	1.5	
24	5			1				108		138.4	70.8	1.6	
25	8							114		134.4	58.7	1.7	
26	13							108		130.2	40.8	1.7	
27	7							44		126.4	44.0	1.9	
28	24			2				81		111.1	25.2	1.8	
29	24							72		119.0	29.9	1.8	
30	17							88		117.6	13.4	1.8	
TOTAL	126			8				3924					
AVERAGE	8			1				131		114.1	27.6		

TABLE 103

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	12							56		90.2	10.0	1.9	
2	18			1				58		104.8	20.2	1.9	
3	12			5				96		97.3	13.5	2.0	
4	20			2				124		111.5	33.3	1.6	
5	22			1				76		97.9	24.3	1.6	
6	55			4				41		118.3	32.2	1.5	
7	49			2				30		111.5	22.6	1.9	
8	83			9				30		111.4	31.2	1.9	
9	75			2				47		118.7	30.5	.8	
10	60			5				38		123.2	33.3	1.6	
11	87			10				54		120.7	.0	1.8	
12	163			13				53		122.1	3.3	1.6	
13	377			27				39		131.9	11.5	1.5	
14	558			29				47		156.8	38.2	1.4	
15	379			28				24		194.4	80.9	1.5	
16	312			23				22		200.4	79.3	1.3	
17	119			24				7		186.3	60.5	1.0	
18	139			22				9		172.6	46.3	1.0	
19	206			28				17		158.4	32.0	.8	
20	277			32				12		166.5	40.9	1.0	
21	122			33				8		188.6	69.4	1.6	
22	142			29				8		189.0	64.5	1.8	
23	116			38				10		182.8	59.9	1.6	
24	99			30				2		197.0	74.8	1.6	
25	30			10						186.7	66.5	1.8	
26	100			38				7		176.3	55.5	1.5	
27	97			40				6		180.2	55.9	1.5	
28	130			30				6		180.0	56.3	1.6	
29	107			40				14		182.4	60.4	1.6	
30	144			58				10		205.4	80.1	1.6	
31	131			61				11		247.9	122.0	1.7	
TOTAL	4241			674				962					
AVERAGE	137			22				32		155.2	45.5		

TABLE 104

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1	59			27				4		229.0	103.2	1.4	
2	76			37				2		208.8	82.0	1.1	
3	60			29				3		196.2	68.9	.9	
4	78			46				2		182.8	56.2	.9	
5	158			37				2		183.1	54.2	1.1	
6	125			29				3		183.5	54.8	1.1	
7	106			38				3		180.4	51.5	1.2	
8	54			44				2		185.8	58.9	1.0	
9	63			27				3		178.4	52.8	1.6	
10	96			32				3		171.6	44.6	1.7	
11	111			36				2		166.3	38.0	2.0	
12	125			37				1		169.5	40.4	2.0	
13	164			41						173.7	45.6	2.0	
14	153			60				2		178.0	51.4	1.7	
15	249			76						182.0	55.9	1.5	
16	237			70				1		191.9	76.9	1.5	
17	230			62						196.5	97.3	1.6	
18		120		42						197.4	75.6	1.8	
19		89		32						191.0	80.1	1.8	
20		181		43						187.2	72.0	1.8	
21		105		30						205.4	88.0	1.5	
22		164		34				1		213.0	87.5	1.2	
23		115		26				1		186.2	60.4	1.4	
24		112		36						178.2	53.0	1.4	
25		166		35						179.6	52.9	1.3	
26		158		36						183.3	58.3	1.2	
27		175		49				1		177.6	53.6	1.3	
28		220		65				1		172.7	59.6	1.3	
29		304		47				2		167.4	50.3	1.7	
30		321		50				1		151.6	36.7	1.7	
TOTAL	2144	2230		1253				40					
AVERAGE	126	172		42				2		184.9	62.0		

TABLE 105

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		292		75				3		134.9	33.4	1.7	
2		267		139				1		126.5	30.9	1.7	
3		157		88				3		108.2	6.4	1.7	
4		219		111				1		113.5	28.0	1.9	
5		177		115				5		107.3	19.0	1.9	
6		165		101				2		99.8	.0	2.0	
7		201		90				8		100.8	.0	2.0	
8		177		70			1	17	1	90.0	.0	2.0	
9		126		49				13		84.7	.0	2.0	
10		121		41			1	10	1	78.9	.0	2.2	
11		119		39				20		77.3	.0	2.1	
12		108		58			5	16		71.8	.0	2.8	
13		72		42			9	21		69.2	.0	3.1	
14		125		44			3	20		64.7	.0	3.0	
15		68		20			4	22		47.2	.0	3.1	
16		34		21			8	23		58.1	.0	3.1	
17		56		26			2	30		56.3	.0	3.2	
18		55		17			3	45		41.9	.0	3.2	
19		39		26			2	84	1	53.0	.0	3.3	
20		66		22			5	110		42.7	.0	4.1	
21		77		12				123		39.3	.0	3.8	
22		35		13				117		39.1	.0	3.8	
23		84		22			2	134		28.8	.0	4.0	
24		55		6				121	7	38.4	.0	4.2	
25		9		6				109	2	42.9	.0	4.7	
26		19		8				119	10	42.0	.0	4.4	
27		14		6				111	4	42.9	.0	3.8	
28		13		2				176	2	50.7	.0	4.0	
29		18		1				137	24	41.1	.0	3.5	
30		25		2				142	2	36.1	.0	2.0	
31		8		1				153	10	51.1	.0	2.8	
TOTAL		3001		1273			45	1896	64				
AVERAGE		97		41			4	61	6	67.1	3.8		

TABLE 106

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1		1		2				103	7	39.8	.0	2.8	
2		15		3				132	5	36.0	.0	3.6	
3		10					1	129	22	32.4	.0	3.4	
4		12						172	12	41.0	.0	3.2	
5		4		2				133	10	34.8	.0	3.6	
6		7					1	120	1	37.2	.0	5.0	
7		15		2				324	19	40.9	.0	4.6	
8		23		3				268	10	35.9	.0	4.8	
9		12		2				261	6	37.1	.0	4.9	
10		13						150	28	37.2	.0	4.4	
11		14						124	16	33.4	.0	3.0	
12		18		1				113	18	27.9	.0	4.4	
13		15						193	15	23.0	.0	3.0	
14		10						128	18	25.1	.0	4.6	
15		11		1				78	4	24.3	.0	4.6	
16		10						100		21.3	.0	4.8	
17		8		1				100		25.6	.0	4.0	
18			9	2				119		24.2	.0	4.0	
19			2					67		21.8	.0	3.5	
20								66		21.5	.0	4.0	
21			9	1				42	6	30.8	.0	4.0	
22			4					36	4	32.1	.0	4.2	
23			1					41	12	37.0	.0	4.5	
24			9	2				67	6	30.6	.0	4.5	
25			2	1				41	6	35.8	.0	4.5	
26			1	2				32	5	19.7	.0	4.4	
27			9	2				82	6	24.7	.0	4.7	
28			12	3				86	5	19.5	.0	4.6	
29			2	2				45	6	40.7	.0	4.6	
30			8					57		27.4	.0	4.7	
31			2	3				49	3	33.7	.0	4.4	
TOTAL		198	70	35			2	3458	250				
AVERAGE		12	5	2			1	112	10	30.7	.0		

TABLE 107

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			6	1				63	1	29.4	.0	4 5	
2			6					43		28.0	.0	4.6	
3			1	1				37	2	25.1	.0	5.0	
4			2	1				68		31.6	.0	5.0	70.0
5			7	11				152		33.5	.0	5.0	70.0
6			13	5				374		41.3	.0	5.0	69.0
7			18	6				378		42.7	.0	3.0	68.0
8			24	8				698		37.8	.0	3.8	68.0
9			10	8				335		32.1	.0	4.0	68.0
10			8	7				594		36.5	.0	3.8	68.0
11			6	11				548		40.0	.0	3.8	66.0
12			5	15				830		39.6	.0	4.6	66.0
13			8	14				593		39.3	.0	4.9	66.0
14			10	12				616		41.0	.0	4.6	66.0
15			24	14				1183		35.5	.0	4.6	66.0
16			15	9				1217	1	31.1	.0	4.8	66.0
17			10	15				1311		39.5	.0	5.0	65.0
18			20	28				1868		36.6	.0	5.0	65.0
19			25	25				2057		35.7	.0	4.8	64.0
20			11	14				1152		35.5	.0	4.8	63.0
21			13	21				2375		34.1	.0	5.0	64.0
22			10	29				2395		35.8	.0	4.6	63.0
23			14	10				1645		37.0	.0	3.0	63.0
24			25	14				1595		37.7	.0	3.3	63.0
25			12	23				2693		39.9	.0	3.4	62.0
26			6	14				2201		39.6	.0	3.6	61.0
27			6	11				1799		40.5	.0	3.0	60.0
28			10	18				1897		45.8	.0	5.0	60.0
29			13	15				2030		39.7	.0	4.6	60.0
30			4	9				1962		26.8	.0	3.4	59.0
TOTAL			342	369				34709	4				
AVERAGE			11	13				1157	1	36.3	.0		

TABLE 108

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SEECHI)	WATER TEMP (DEG F)
1			19	30				4043		29.5	.0	3.4	59.0
2			19	21				3956	1	33.5	.0	4.2	59.0
3			20	30				3011	1	29.3	.0	4.2	59.0
4			12	20				2676		32.6	.0	4.5	59.0
5			10	20				3733		31.0	.0	4.6	60.0
6			12	32				2097		26.9	.0	4.7	60.0
7			4	17				2196		28.5	.0	4.7	59.0
8			9	12				1364		34.3	.0	4.7	60.0
9			7	5				1534		27.5	.0	4.6	60.0
10			5	5				1899		29.3	.0	4.7	60.0
11			8	14				1660		30.4	.0	4.5	60.0
12			10	12				1583		29.0	.0	4.4	60.0
13			11	15				2322		37.6	.0	4.4	60.0
14			5	14				2130		35.8	.0	4.4	59.0
15			5	11				1399		35.9	.0	4.4	60.0
16			4	8				1516		30.0	.0	4.4	61.0
17			6	8				994		32.9	.0	4.4	60.0
18			1	5				883		32.1	.0	3.6	59.0
19			4	3				1037		34.0	.0	4.2	57.0
20			7	2				814		41.0	.0	4.0	57.0
21			6	6				688		43.0	.0	4.0	57.0
22			1	2				333		39.3	.0	4.0	55.0
23			4	1				469		40.8	.0	3.8	53.0
24			1					107		40.6	.0	3.8	53.0
25			2	1				524		39.1	.0	3.8	53.0
26			4	2				434		43.4	.0	4.0	53.0
27			2	1				518		44.1	.0	3.7	52.0
28			1	1				970		44.4	.0	3.7	52.0
29			2	4				361		43.5	.0	3.8	52.0
30			5	7				556		43.8	.0	3.7	52.0
31			2	6				638		42.4	.0	3.6	52.0
TOTAL			208	315				46445	2				
AVERAGE			7	10				1498	1	35.7	.0		

TABLE 109

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - NOVEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECHI)	WATER TEMI (DEG F)
1				5				317		40.0	.0	3.6	52.0
2				6				107		42.6	.0	3.8	53.0
3			2	1				379		41.0	.0	4.1	52.0
4			4					568		42.9	.0	4.1	52.0
5			1	1				284		48.0	.0	4.0	52.0
6			1	4				146		44.6	.0	4.2	50.0
7				2				172		44.9	.0	5.0	50.0
8				2				137		43.5	.0	5.0	50.0
9								175		47.0	.0	3.9	50.0
10								150		42.6	.0	3.8	49.0
11			2	2				212		42.9	.0	3.7	48.0
12			1	4				467		47.7	.0	3.7	48.0
13			1					199		41.7	.0	3.4	48.0
14								224		48.4	.0	3.6	48.0
15								198		39.7	.0	3.6	48.0
16								216		45.7	.0	5.0	48.0
17			2	1				215		42.9	.0	5.0	48.0
18								133		55.3	.0	4.6	48.0
19			2					62		37.4	.0	4.6	47.0
20								47		45.9	.0	4.6	47.0
21			0					0		36.1	.0	4.5	47.0
22			0					0		43.9	.0	4.7	47.0
23			1	1				61		47.9	.0	3.6	47.0
24								73		56.4	.0	3.6	46.0
25								72		46.0	.0	3.5	46.0
26								65		43.7	.0	3.5	46.0
27			0					0		50.0	.0	3.5	46.0
28								49		51.3	.0	3.5	45.0
29								49		45.3	.0	3.4	44.0
30								64		47.1	.0	4.0	44.0
TOTAL			17	29				4841					
AVERAGE			1	3				161		45.1	.0		

TABLE 110

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - DECEMBER 1984

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECHI)	WATER TEMP (DEG F)
1										55.3	.0	4.0	44.0
2										44.8	.0	4.0	44.0
3										43.2	.0	4.0	44.0
4								13		40.7	.0	3.5	44.0
5										50.0	.0	3.7	45.0
6								5		41.3	.0	3.5	43.0
7								0		49.2	.0	3.5	42.0
8								1		41.9	.0	3.5	42.0
9										37.7	.0	3.4	41.0
10			0					0		40.9	.0	3.4	41.0
11								1		54.5	.0	3.3	40.0
12			0							47.8	.0	3.4	40.0
13								0		45.6	.0	3.4	40.0
14								2		43.8	.0	5.0	40.0
15										39.7	.0	5.0	40.0
16										34.4	.0	5.0	39.0
17										42.2	.0	5.0	39.0
18										35.5	.0	5.0	39.0
19										40.7	.0	5.0	39.0
20										38.9	.0	5.0	39.0
21										33.7	.0	5.0	38.0
22										34.7	.0	5.0	37.0
23										23.5	.0	5.0	37.0
24										31.4	.0	5.0	37.0
25										31.5	.0	5.0	37.0
26										38.6	.0	5.0	37.0
27										43.1	.0	5.0	37.0
28										44.6	.0	5.0	37.0
29										44.0	.0	5.0	37.0
30										45.3	.0	4.2	37.0
31										51.2	.0	4.4	37.0
TOTALS			0					22					
AVERAGES			0					3		41.6	.0		

TABLE 111

PEAK DAYS OF FISH MIGRATION
LOWER GRANITE DAM - 1975-1984

	SPRING CHINOOK		SUMMER CHINOOK		FALL CHINOOK		STEELHEAD		SOCKEYE		COHO	
YEAR	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH	DATE	NUMBER OF FISH
1975	May 27	1,894	Jun 25	477	Sep 26	135	Sep 25	534	Jul 17	26	Sep 16	58
1976	May 24	972	Jun 26	716	Sep 22	75	Sep 29	740	Jul 14	37	Sep 28	61
1977	May 7	2,457	Jul 4	631	Sep 21	107	Oct 9	2,570	Jul 2	32	Sep 21	47
1978	May 13	2,573	Jul 6	933	Sep 20	58	Sep 23	953	Jul 9	21	Sep 22	12
1979	Jun 10	371	Jun 22	275	Sep 22	69	Sep 20	610	Jul 19	2	Sep 24	17
1980	May 17	449	Jul 1	186	Oct 6	26	Sep 3	935	Jul 17	9	Sep 21	7
1981	May 16	925	Jun 28	362	Sep 19,23	84	Oct 9	1,450	Jul 9	26	Sep 19,20	4
1982	May 15	760	Jul 10	277	Sep 23	107	Sep 3	2,534	Jul 18	28	Sep 27	6
1983	May 15	687	Jul 17	313	Oct 1	27	Sep 30	3,157	Jul 17	11	Sep 27	4
1984	May 14	558	Jun 29	304	Sep 19,24	25	Oct 1	4,043	Jul 16	8	-	-

TABLE 112

MONTHLY TOTALS OF CHINOOK COUNTED OVER LOWER GRANITE DAM
1975 - 1984

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975				1	11,693	8,722	4,854	1,183	1,462	474	71		28,460
1976				149	14,358	10,438	5,074	428	605	535	80		31,667
1977				12,824	22,892	6,718	4,622	203	961	776	125	2	49,123
1978				3,329	29,983	11,464	6,976	1,234	698	519	42	1	54,246
1979				234	4,461	4,455	1,794	256	1,003	302	43		12,548
1980				328	5,227	2,558	1,916	241	345	343	28		10,986
1981				1,380	10,730	2,713	2,561	92	1,008	677	37		19,198
1982				42	9,121	4,650	3,217	329	1,399	650	62	6	19,476
1983				113	7,676	3,551	3,167	234	828	552	79		16,200
1984				134	4,915	5,627	4,274	303	711	523	46	-	16,533
TOTAL				18,534	121,056	60,896	38,455	4,503	9,020	5,351	613	9	258,437
10-YEAR AVERAGE				1,853	12,106	6,090	3,846	450	902	535	61	1	25,844

TABLE 113

MONTHLY COUNT OF STEELHEAD TROUT OVER LOWER GRANITE DAM
1975 - 1984

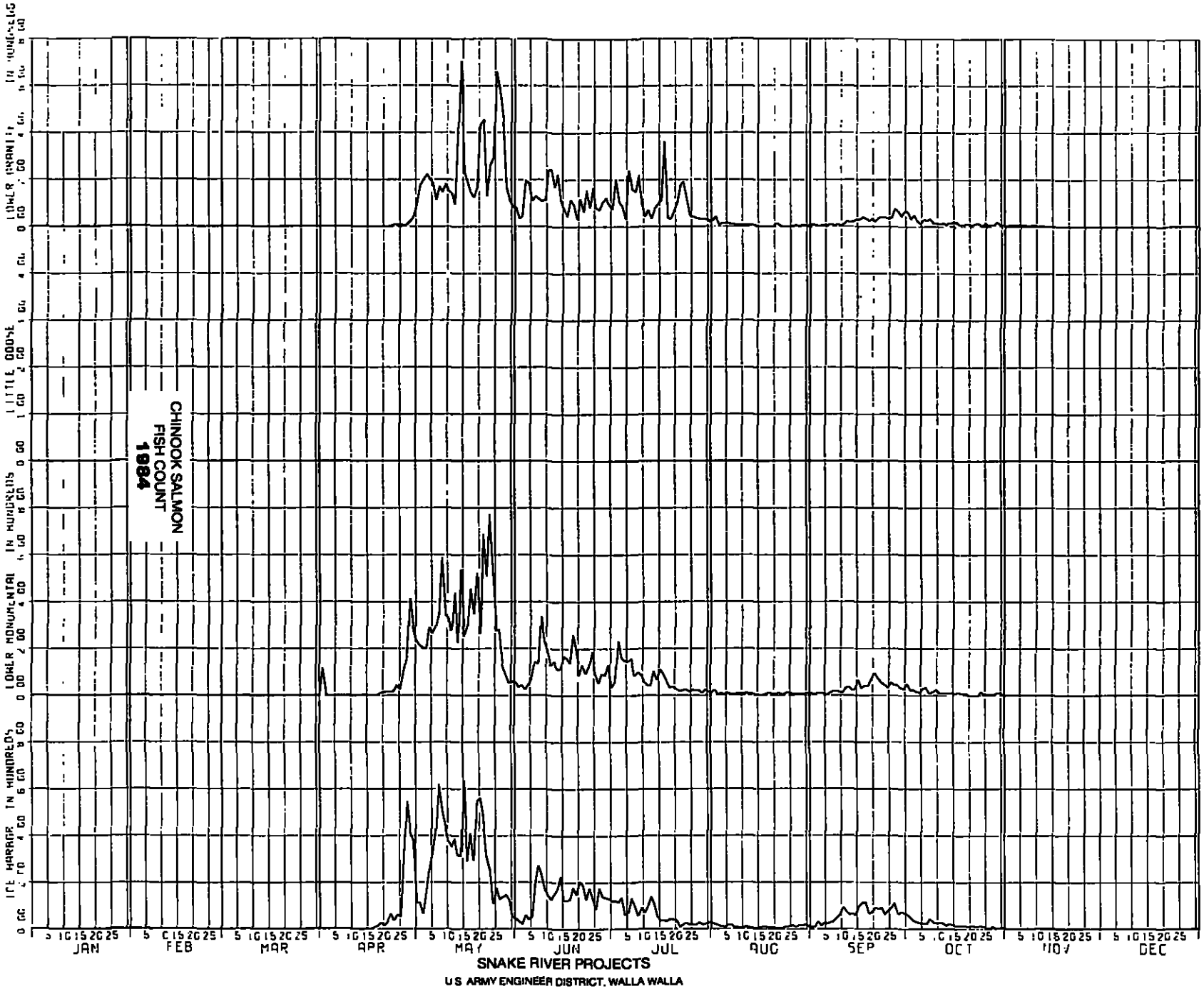
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975				1,724	1,065	104	102	3,337	6,396	3,584	703	296	17,311
1976	173	21	181	1,120	575	120	527	3,816	8,720	6,837	860	67	23,017
1977		9	142	1,235	229	59	1,538	2,652	16,296	27,492	2,950	435	53,037
1978	354	716	2,276	2,009	252	9	478	2,721	10,829	9,528	788	108	30,068
1979	12	44	802	962	192	16	1,197	2,602	5,143	11,323	2,487	266	25,046
1980			1,149	3,403	1,172	36	517	3,378	13,291	15,455	2,053		40,454
1981			1,052	1,610	604	98	1,422	1,609	9,391	20,714	3,096	638	40,234
1982			1,778	2,202	1,472	66	817	9,118	20,219	32,850	3,945	373	72,840
1983			3,336	1,416	244	7	1,676	8,899	32,063	34,028	4,425	140	86,234
1984			2,655	3,924	962	40	1,896	3,458	34,709	46,445	4,841	22	98,952
TOTAL	539	790	13,371	19,605	6,767	555	10,170	41,590	157,057	208,256	26,208	2,345	487,253
10-YEAR AVERAGE			1,337	1,961	677	56	1,017	4,159	15,706	20,826	2,621	235	48,725

NOTE:

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

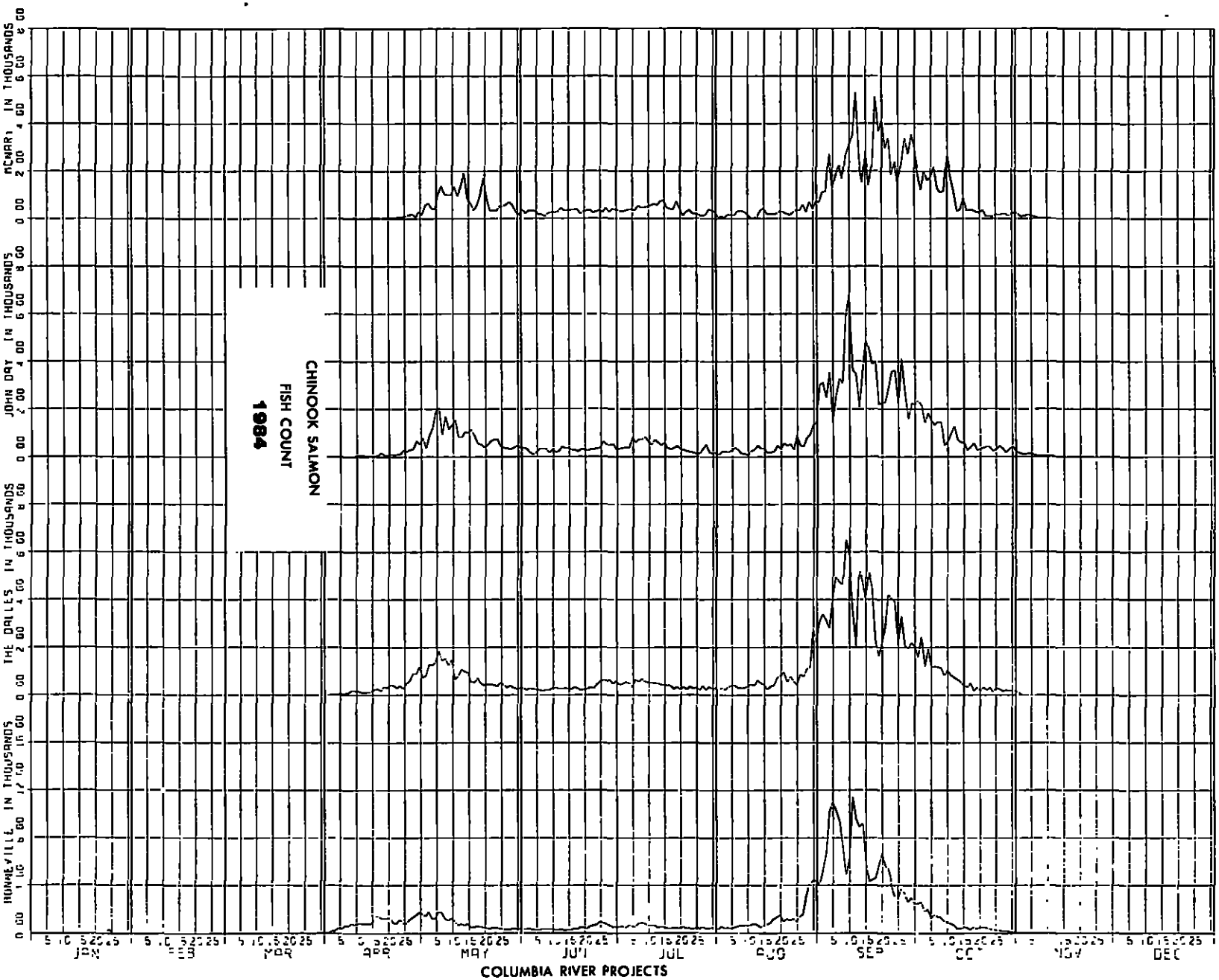
1981 concluded visual counting at Little Goose Dam. Counting is presently being done by an automatic system, therefore, Little Goose Dam fish run graph is blank.

PLATE 1



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, WALLA WALLA

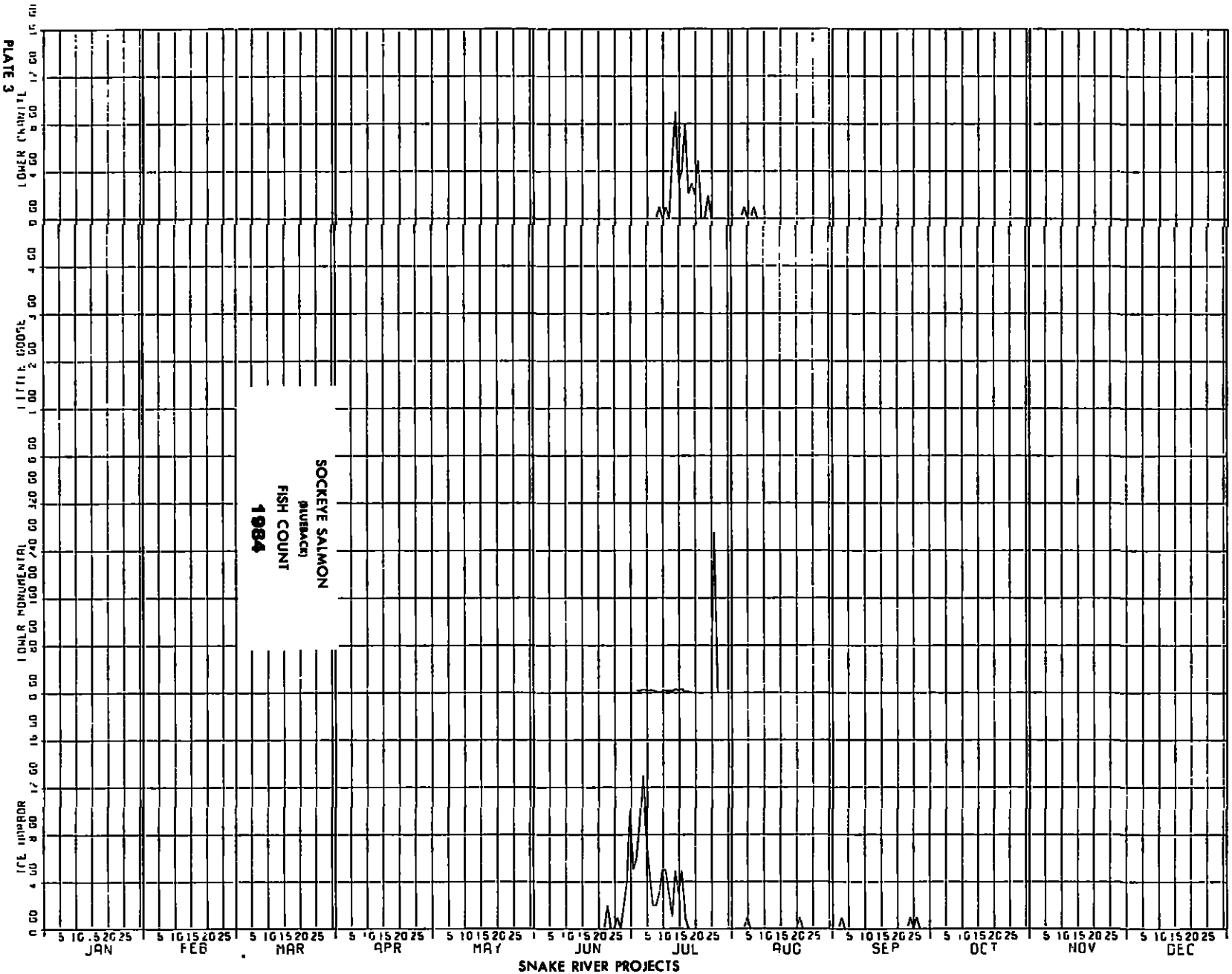


COLUMBIA RIVER PROJECTS

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PLATE 2

PLATE 3



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, WALLA WALLA

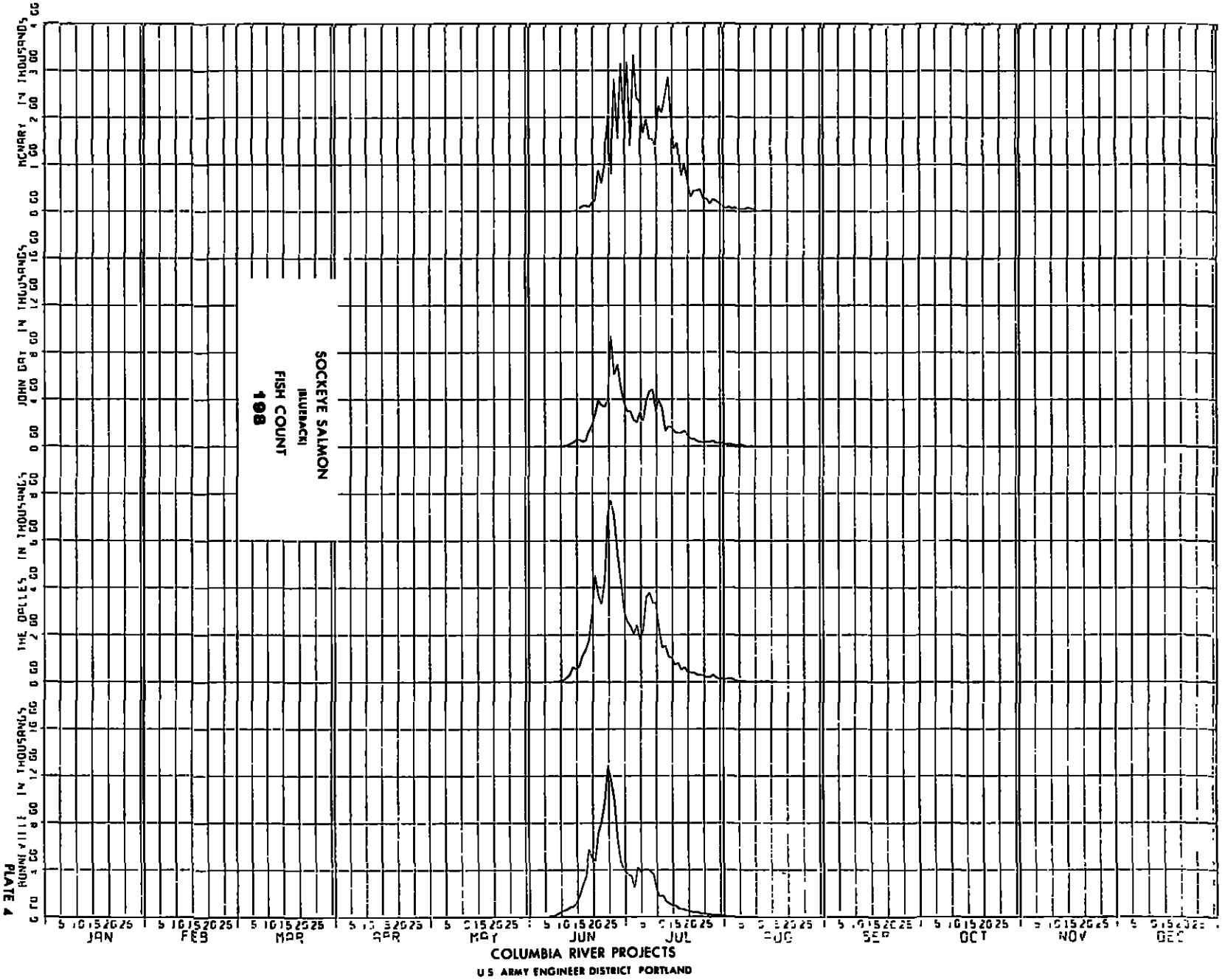
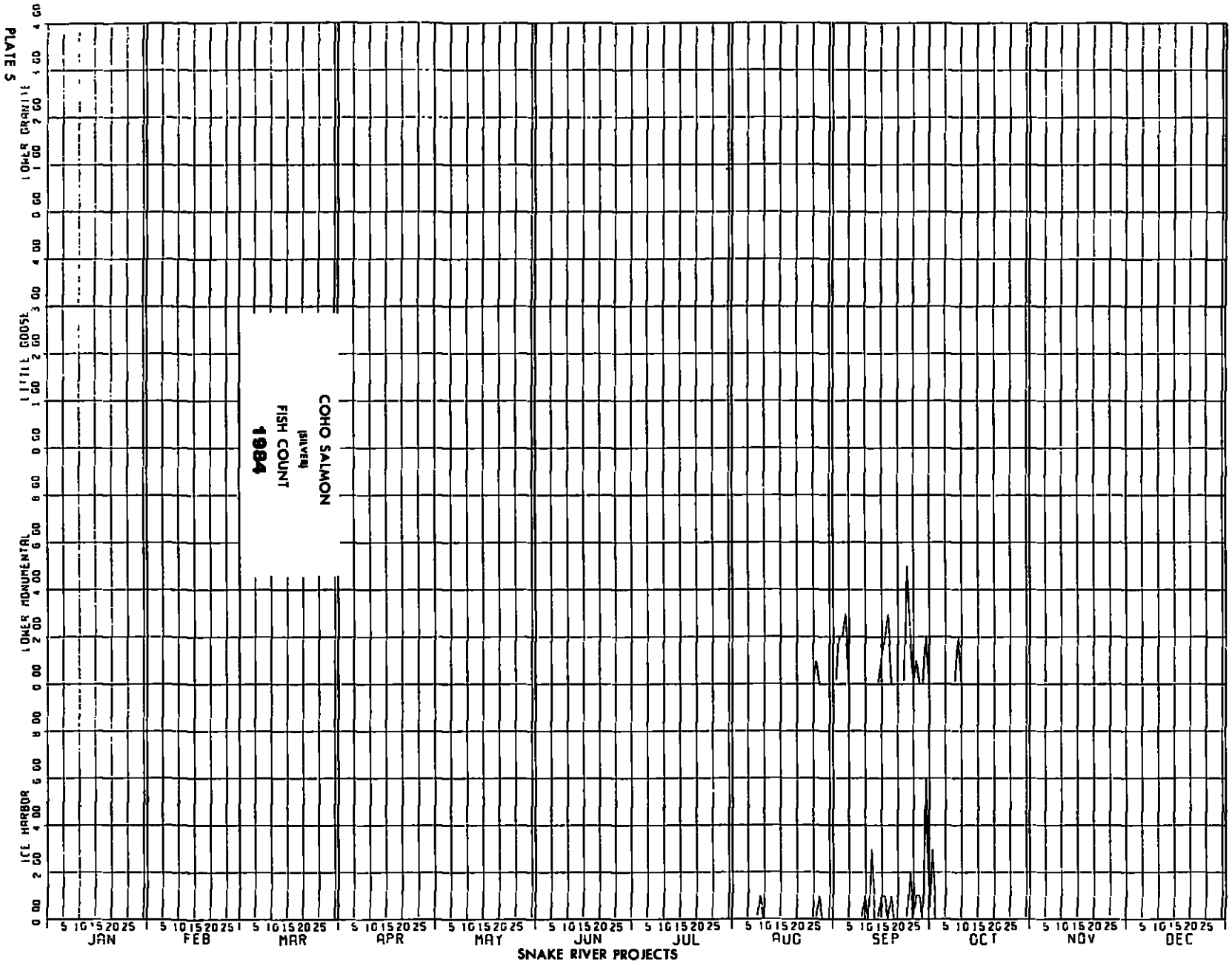


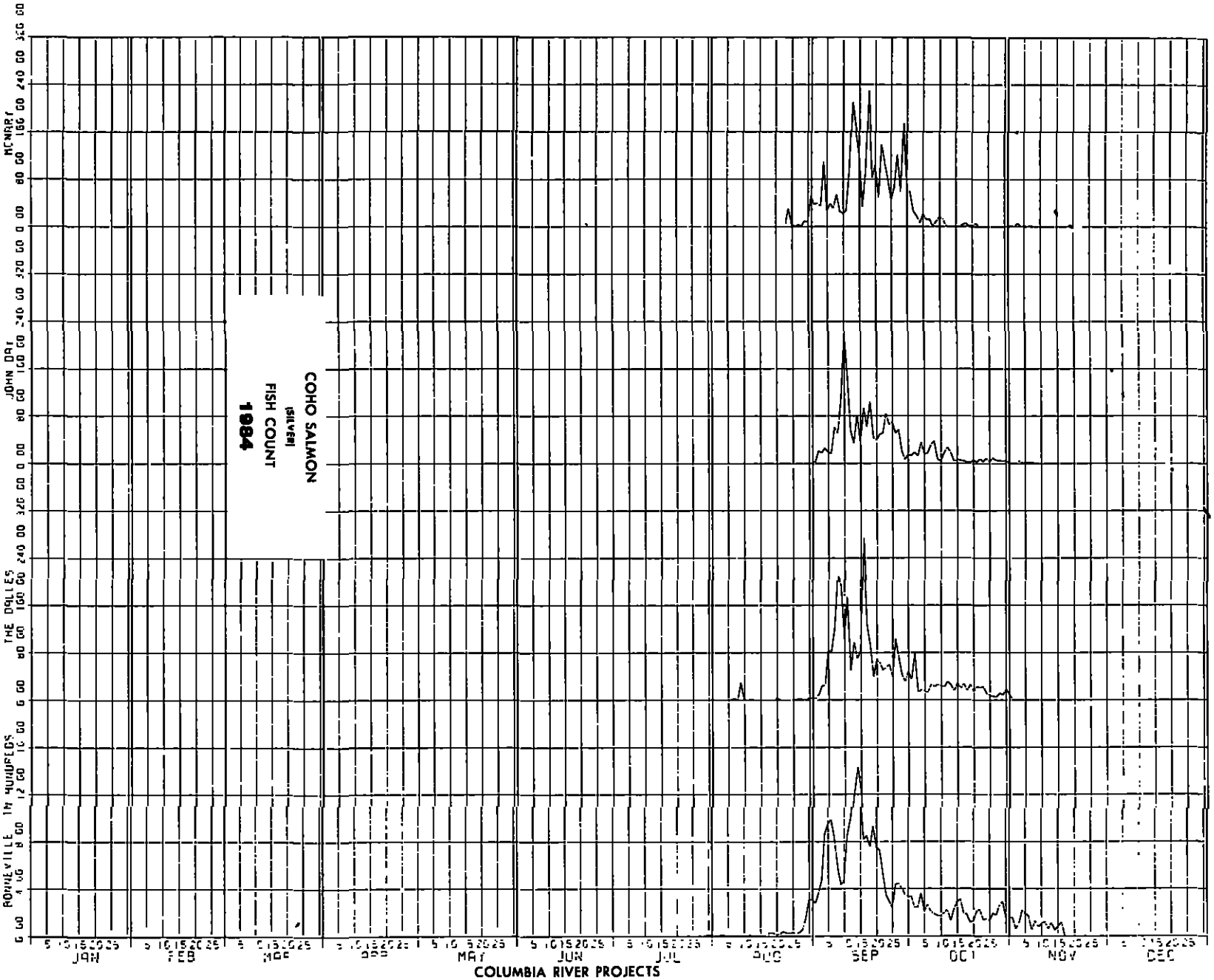
PLATE 4

COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT PORTLAND

PLATE 5


COHO SALMON
(SILVER)
FISH COUNT
1984
ICE HARBOR
LOWER MONUMENTAL
LITTLE GOOSE
LOWER GRANITE
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
SNAKE RIVER PROJECTS
U S ARMY ENGINEER DISTRICT, WALLA WALLA

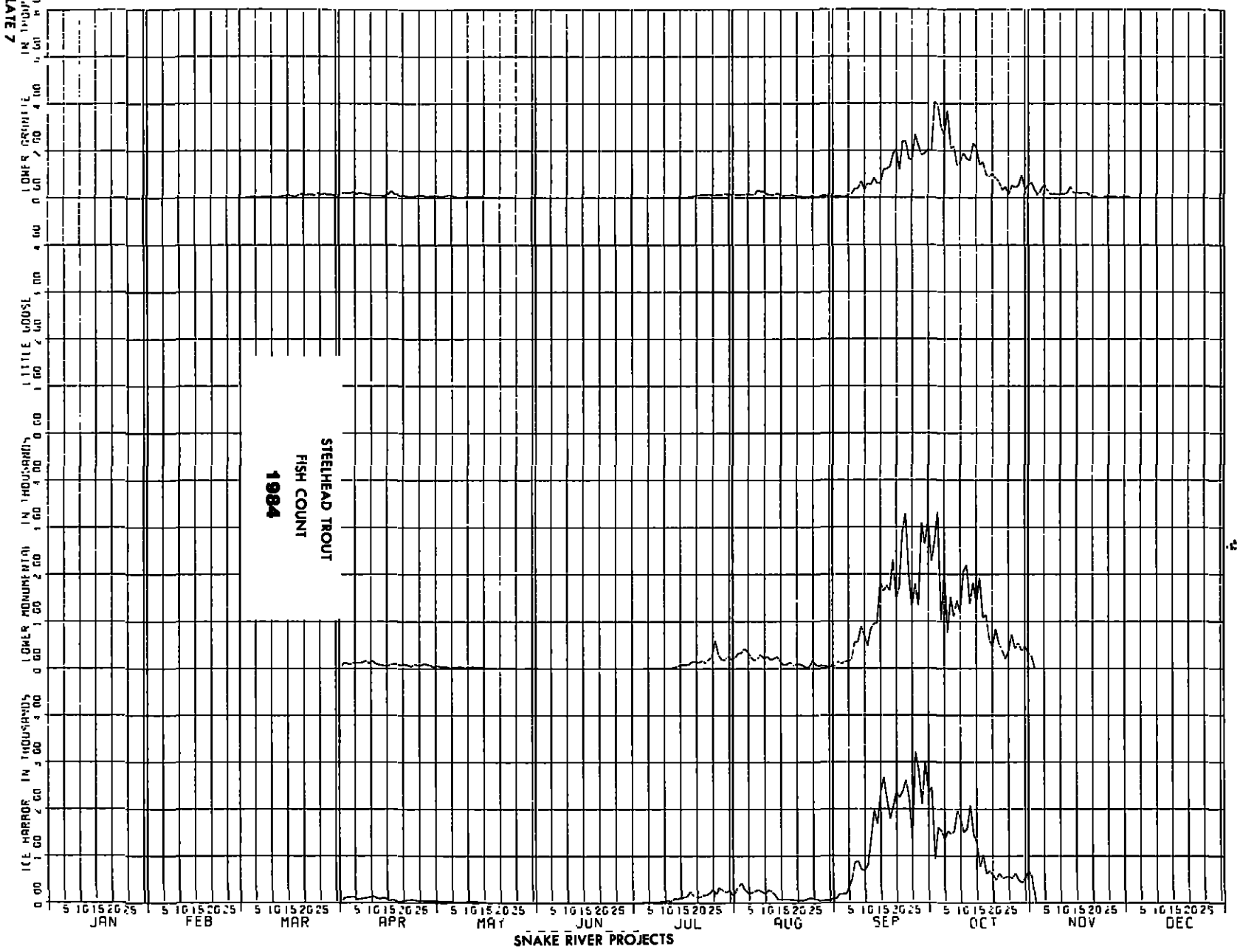


COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, PORTLAND

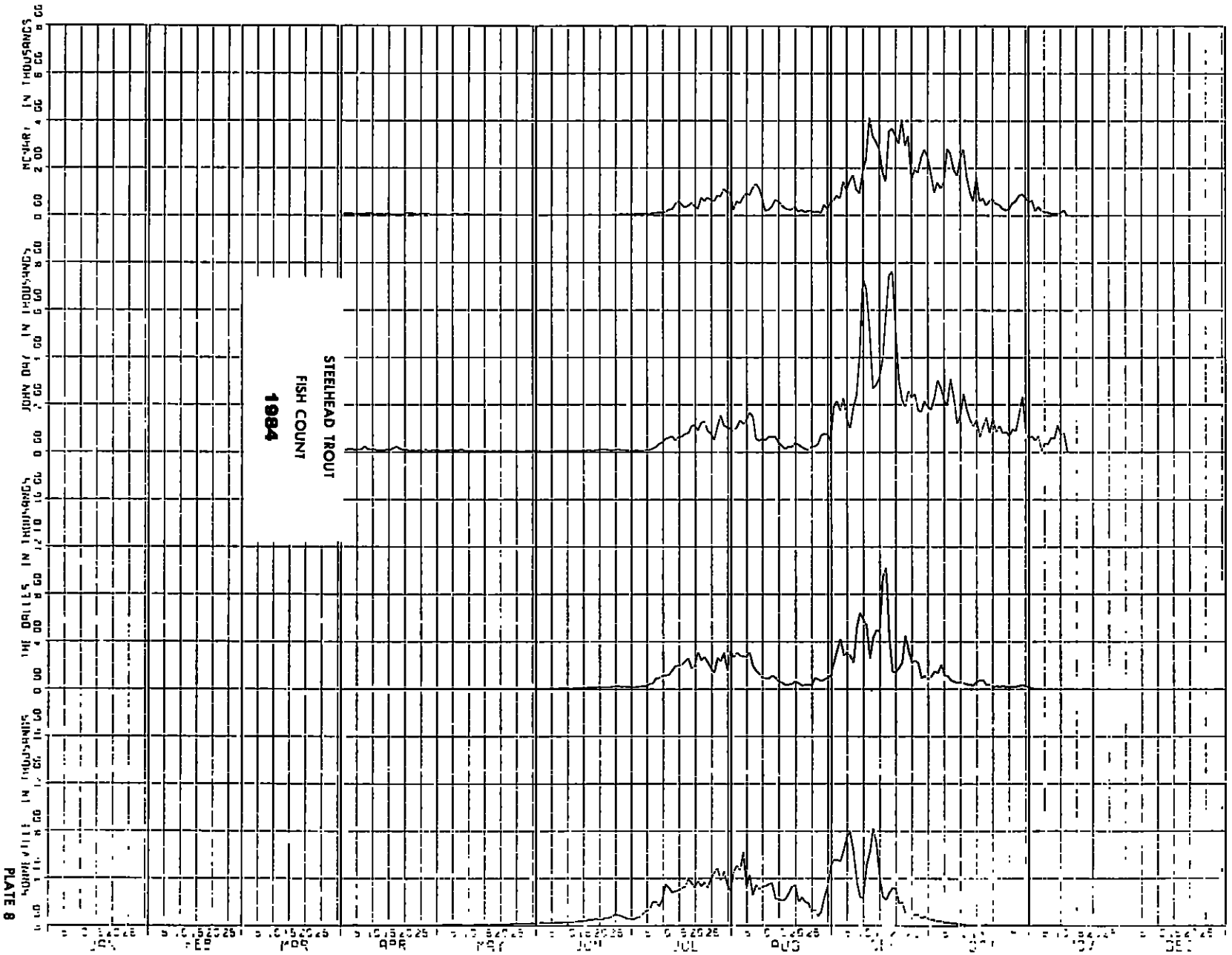
PLATE 6

PLATE 7



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, WALLA WALLA



COLUMBIA RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, PORTLAND

PLATE 8

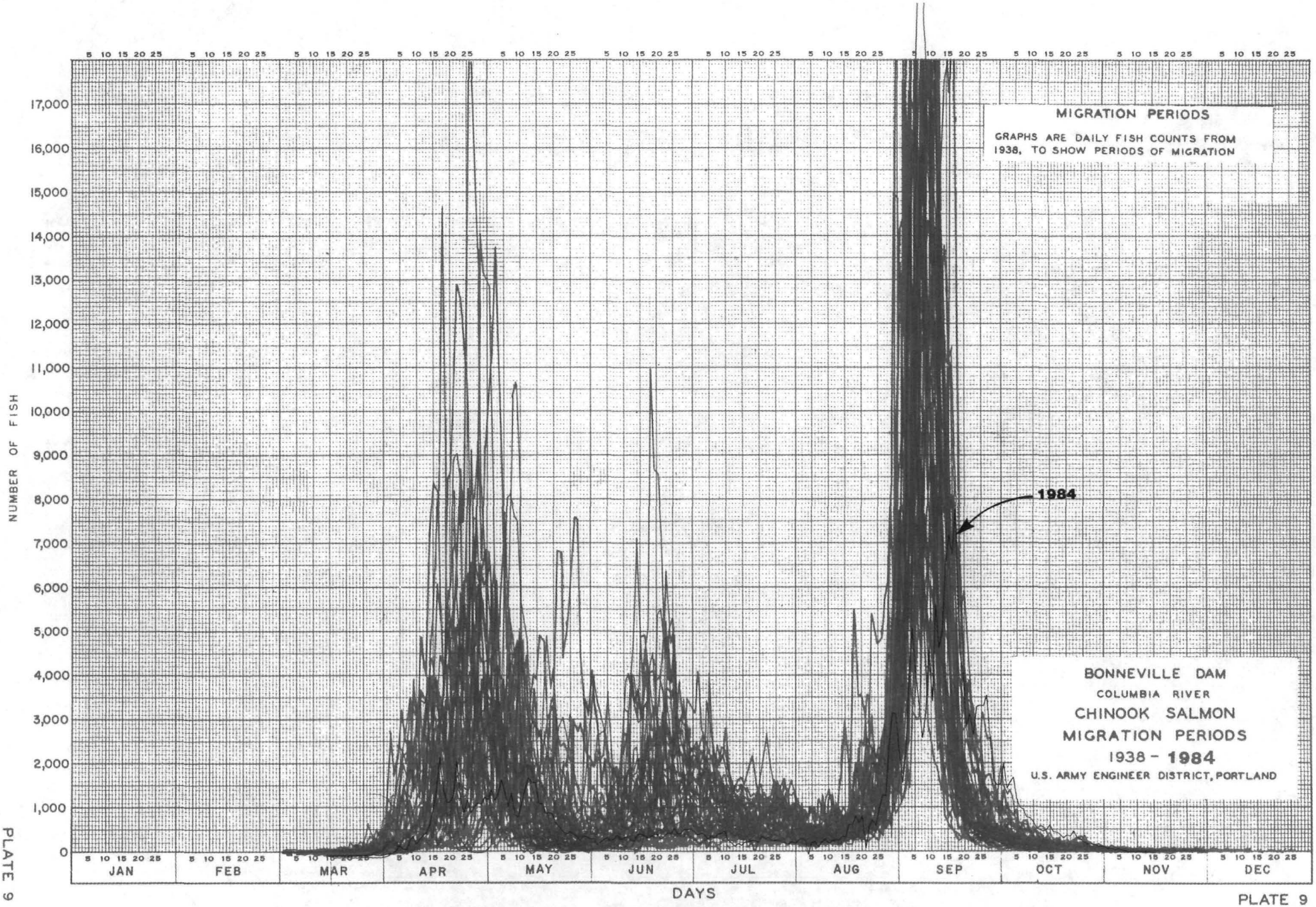


PLATE 9

PLATE 9

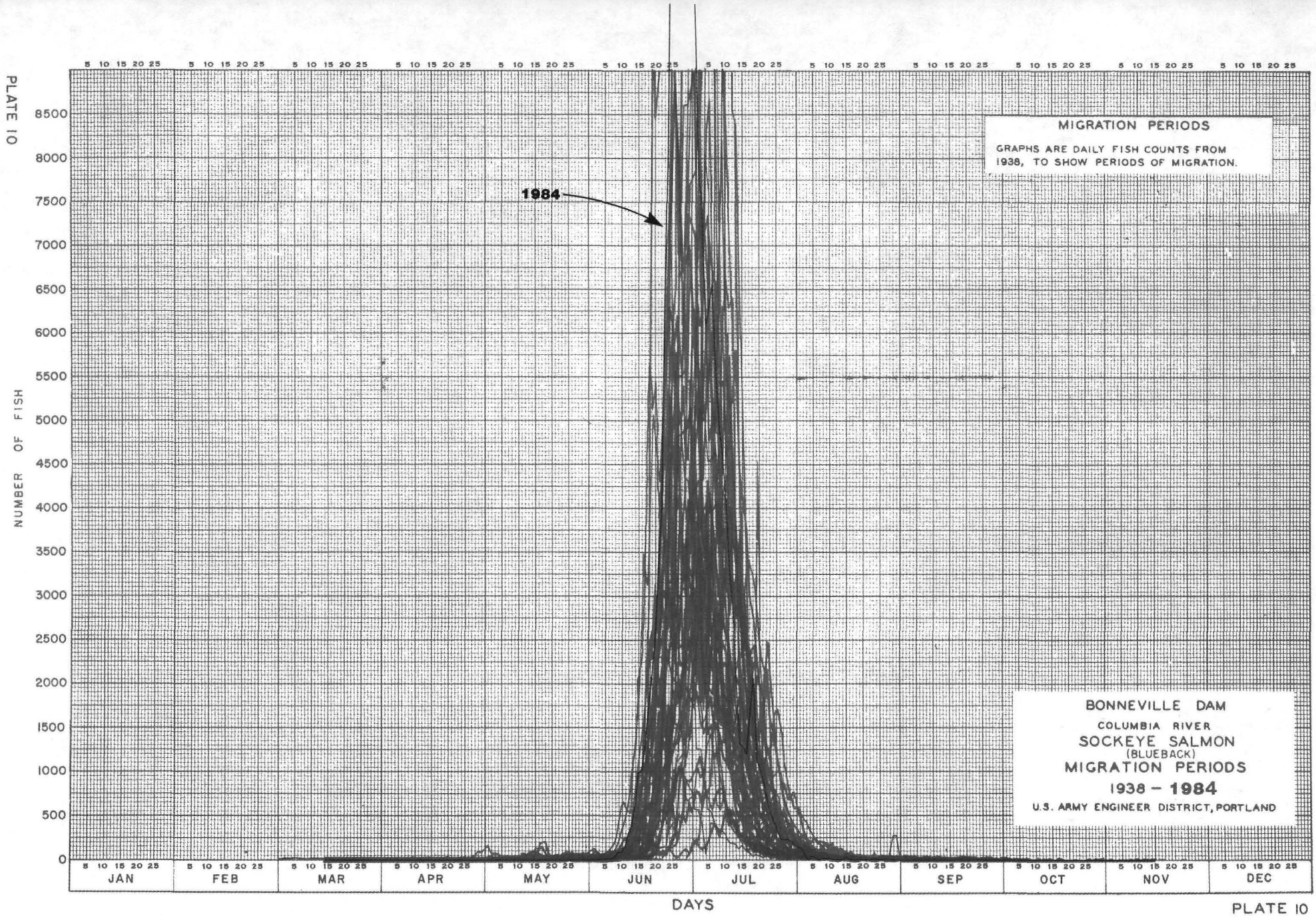


PLATE 10
NUMBER OF FISH
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
5 10 15 20 25
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
DAYS
1984
MIGRATION PERIODS
GRAPHS ARE DAILY FISH COUNTS FROM 1938, TO SHOW PERIODS OF MIGRATION.
BONNEVILLE DAM
COLUMBIA RIVER
SOCKEYE SALMON
(BLUEBACK)
MIGRATION PERIODS
1938 – 1984
U.S. ARMY ENGINEER DISTRICT, PORTLAND

PLATE 10

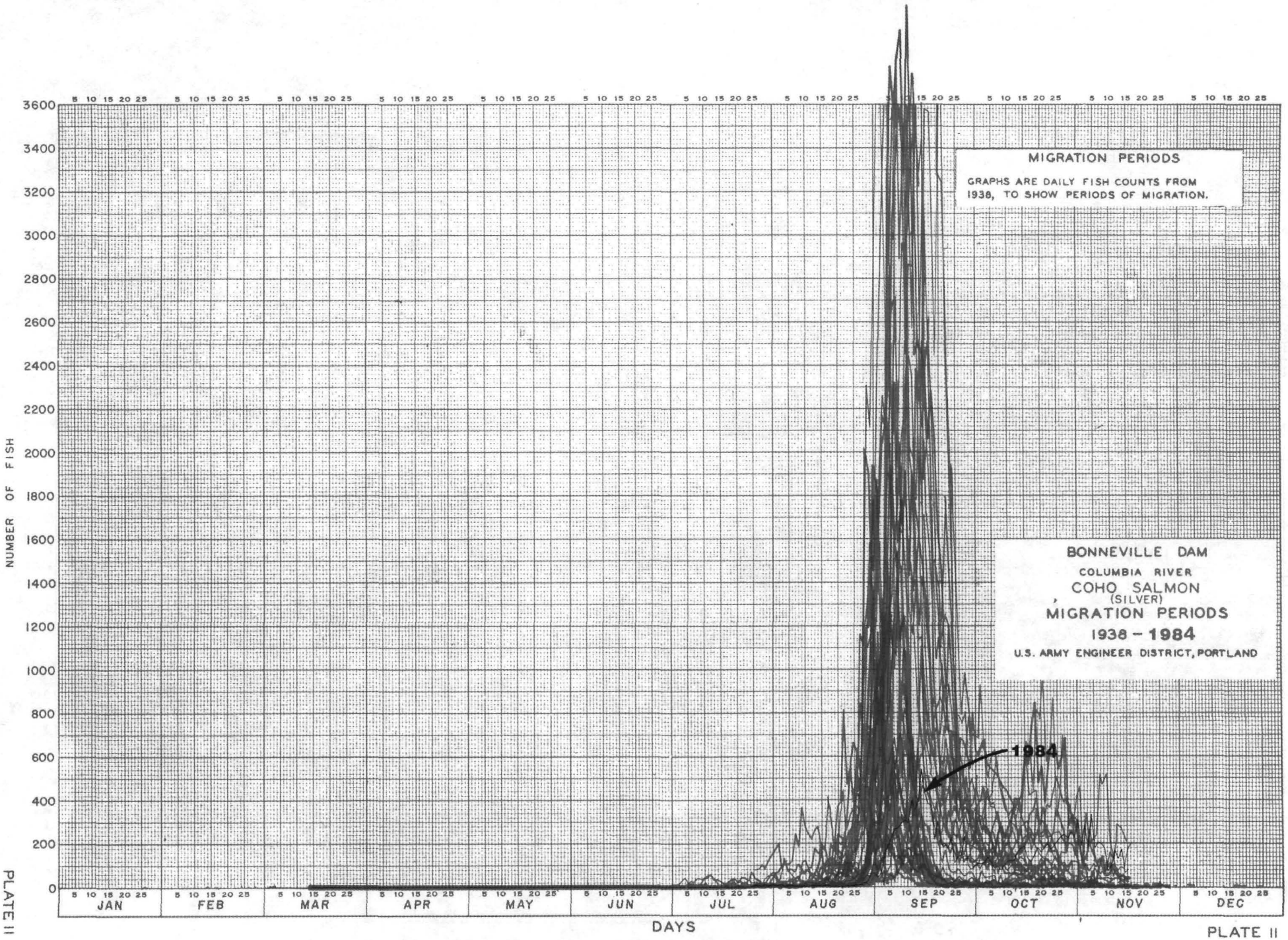


PLATE II

PLATE II

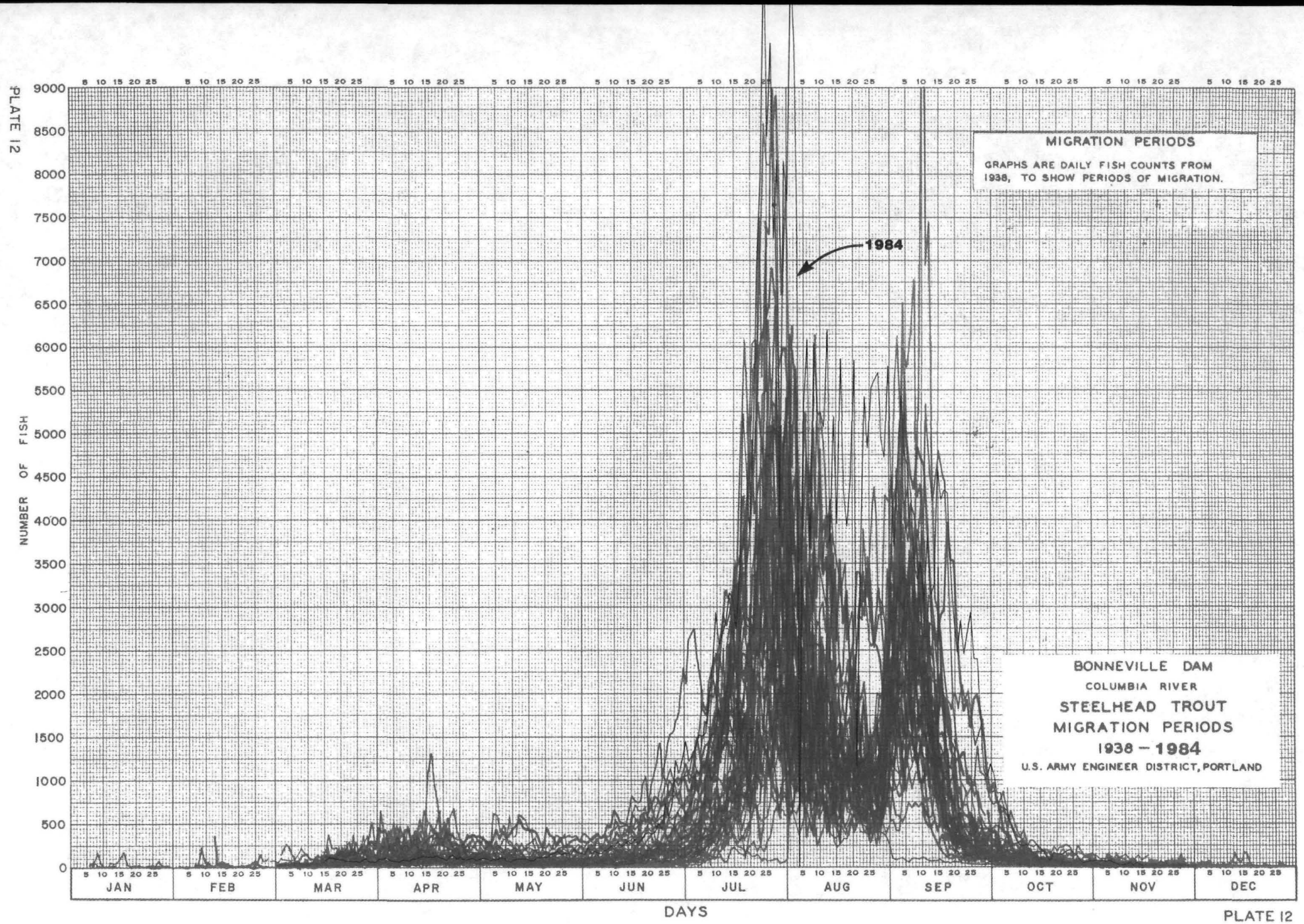


PLATE 12

PLATE 12

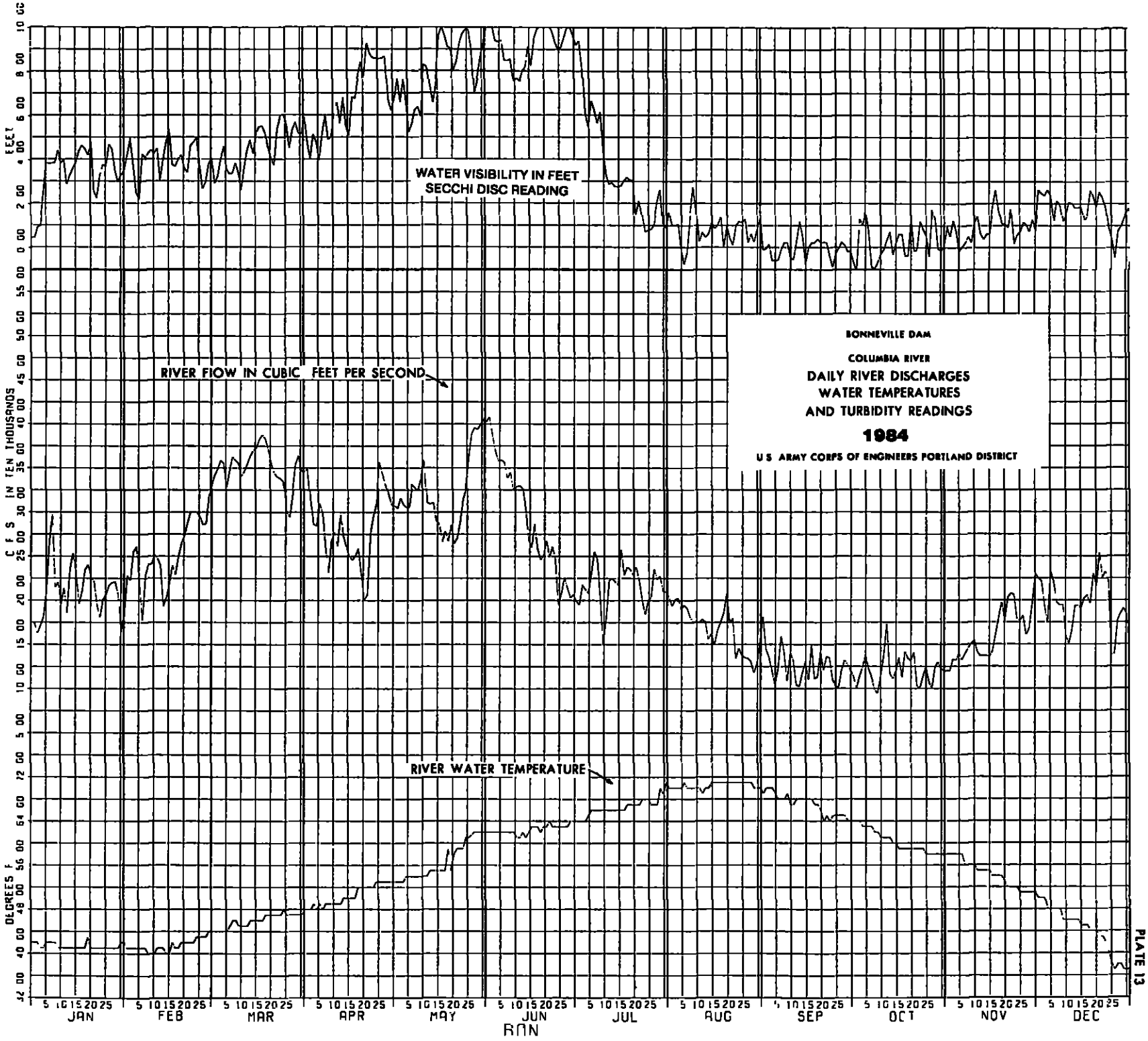

BONNEVILLE DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
RAN

PLATE 13

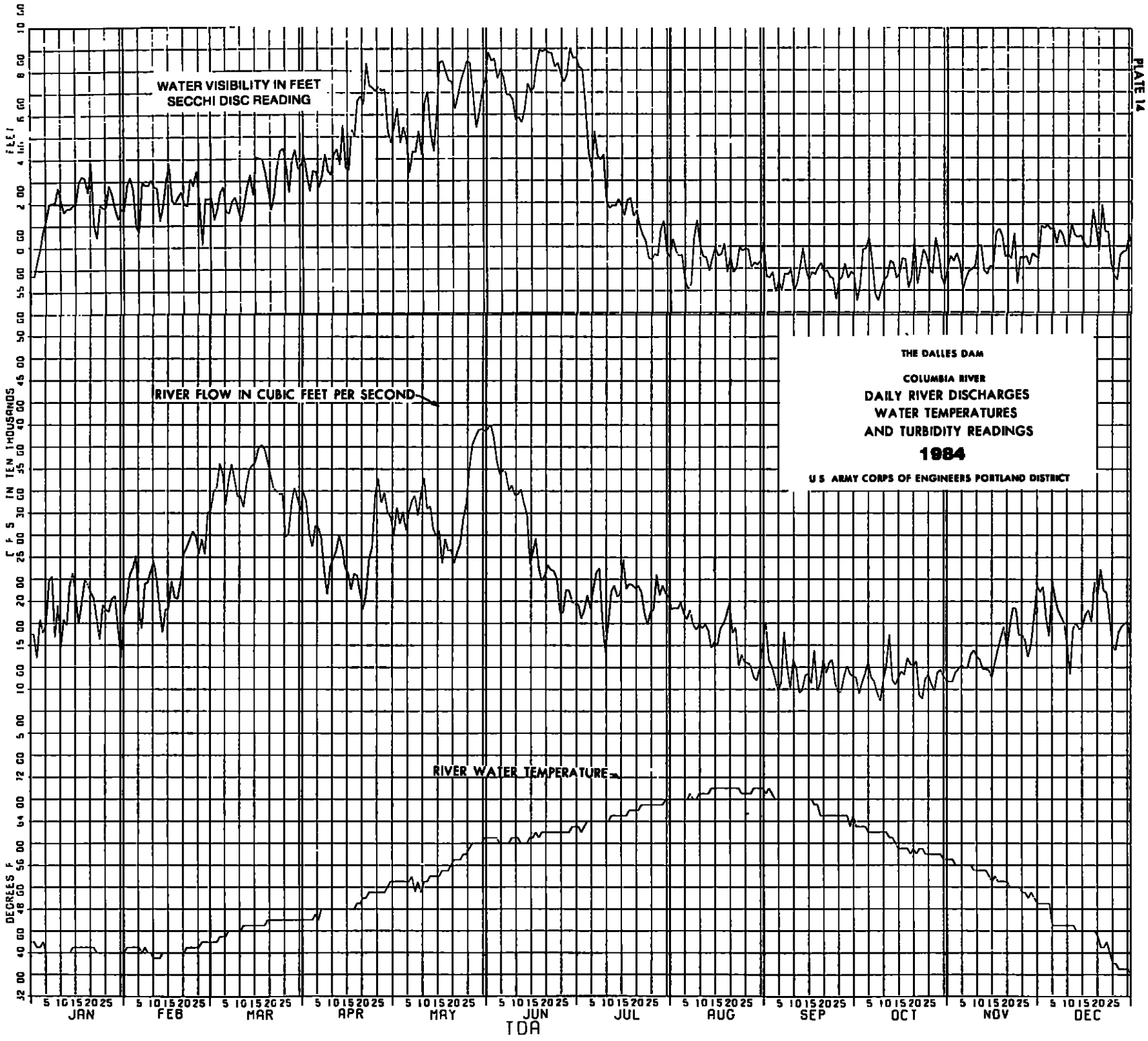

WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
THE DALLES DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
TDA

PLATE 14

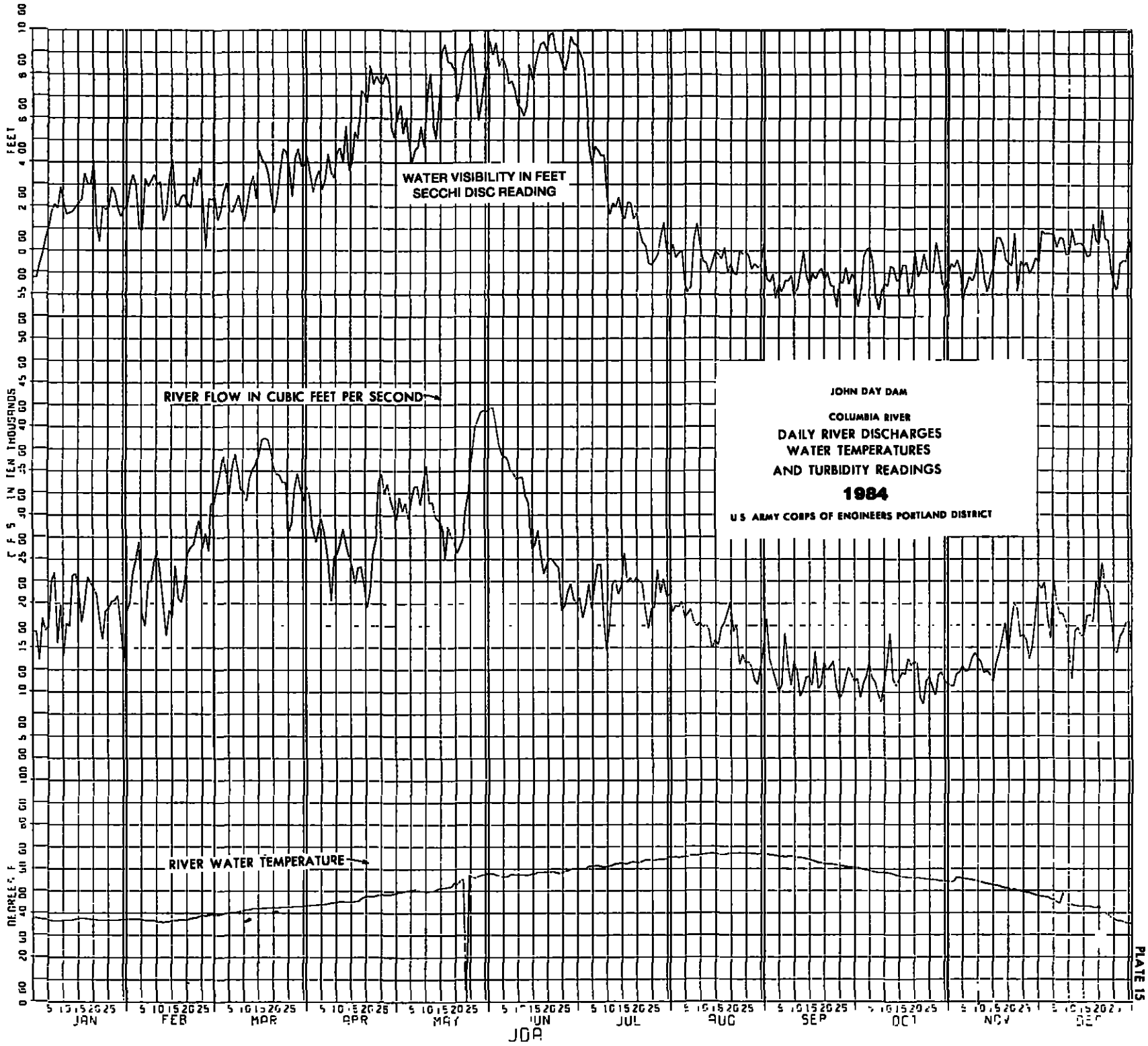

JOHN DAY DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JDA

PLATE 15

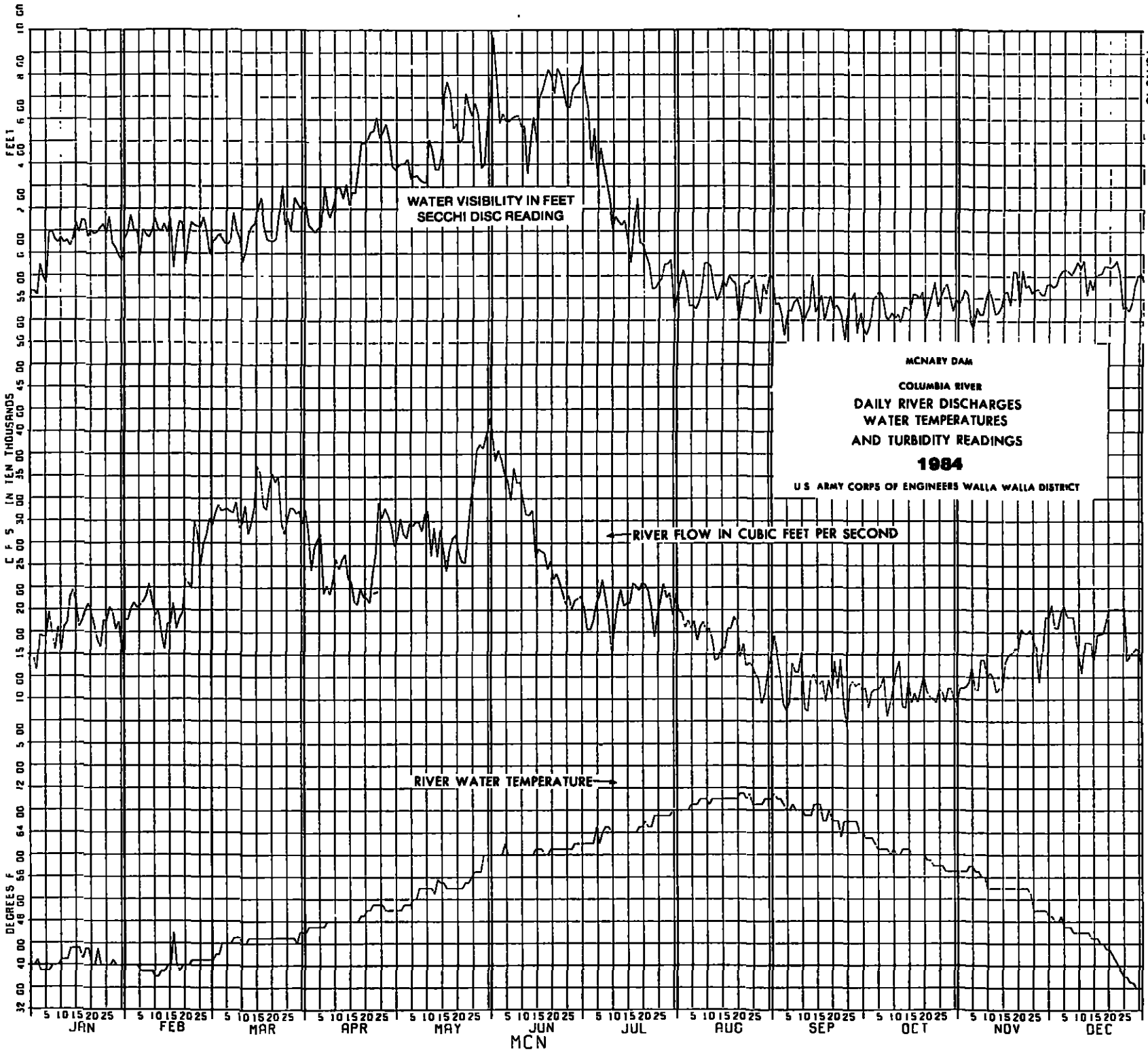


PLATE 16
MCNARY DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
MCN

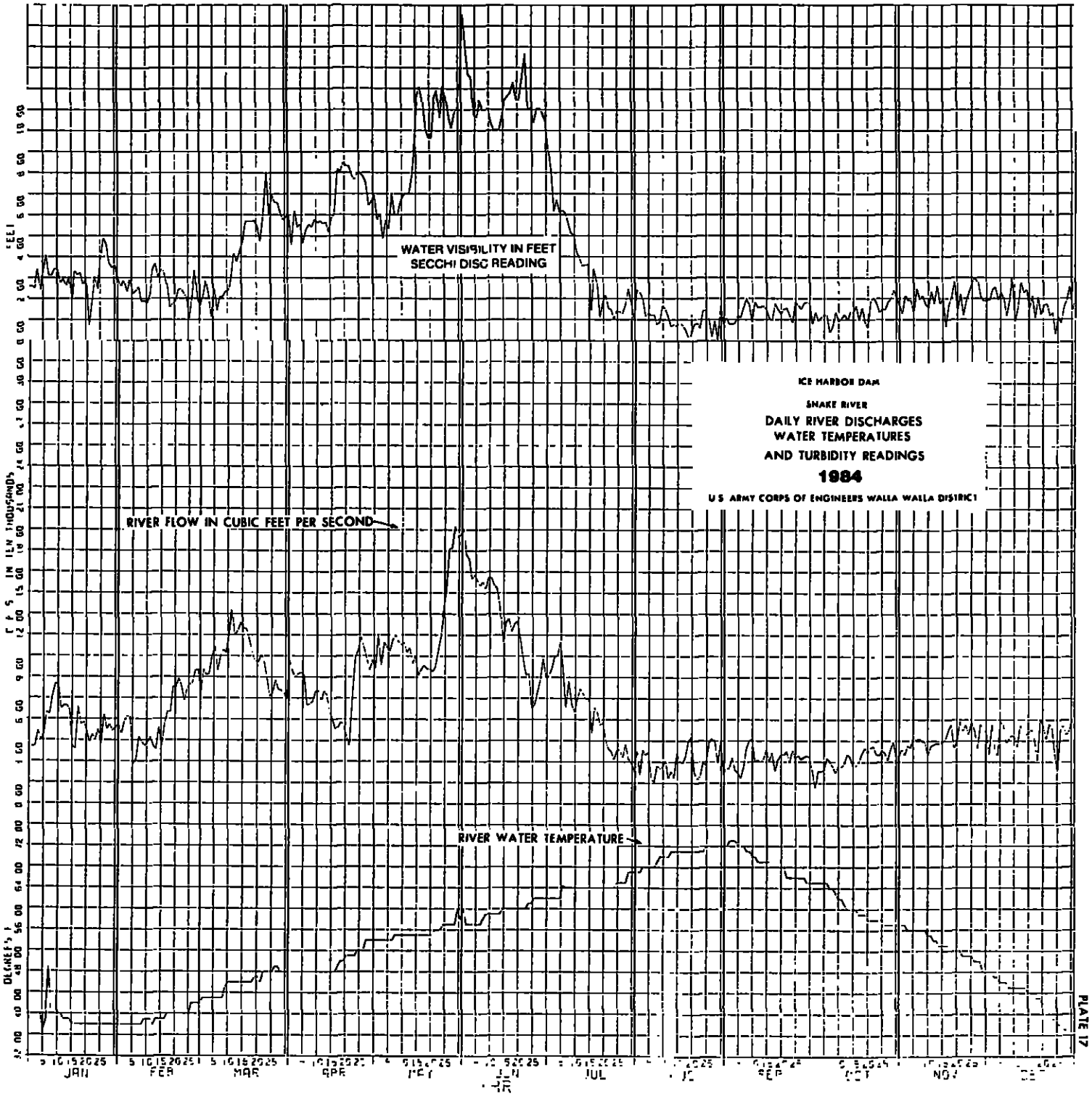

ICE HARBOR DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
SEP
OCT
NOV

PLATE 17

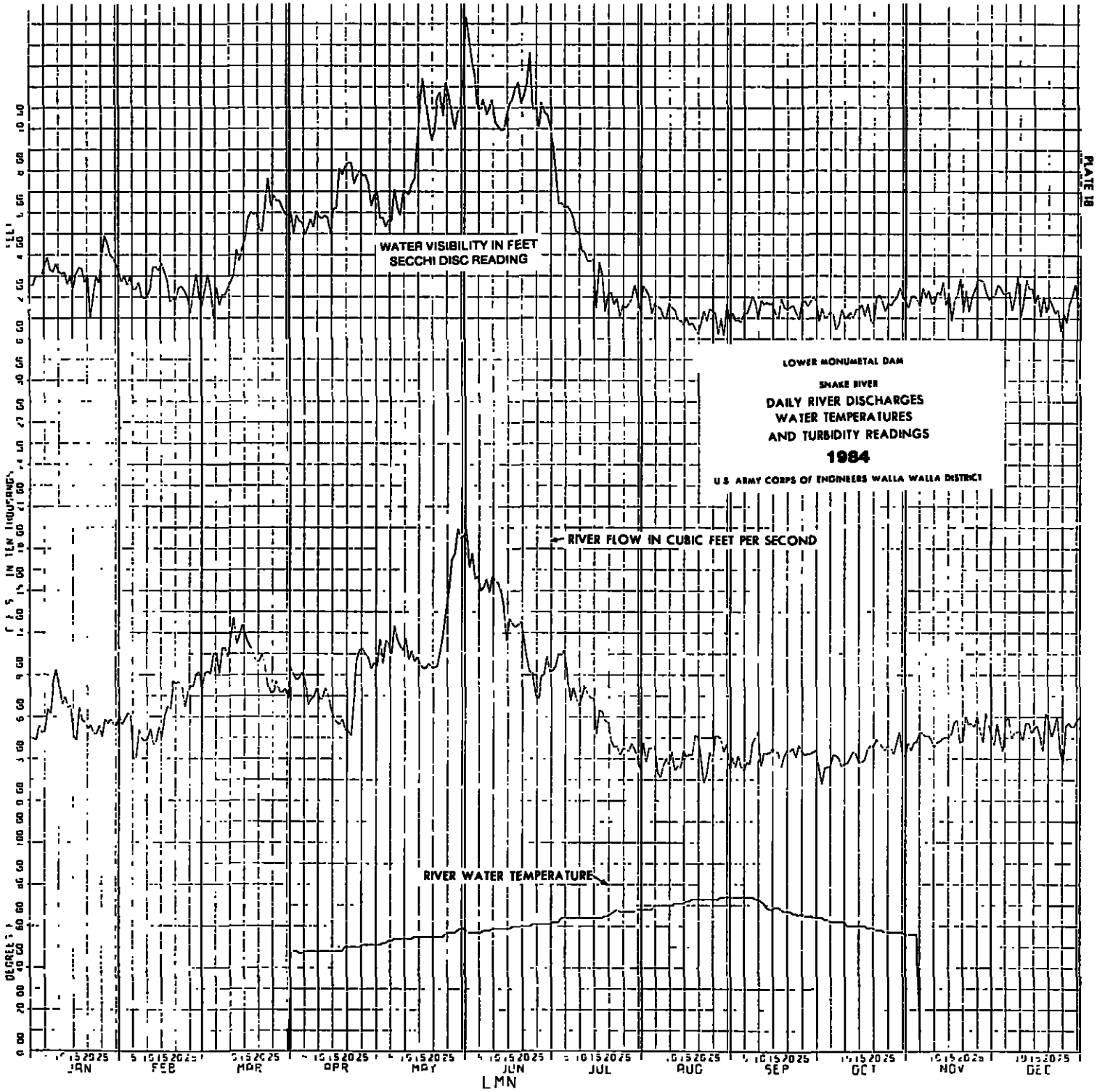

LOWER MONUMETAL DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U.S. ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
DEGREES F
C F S IN THOUSANDS
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LMN

PLATE 18

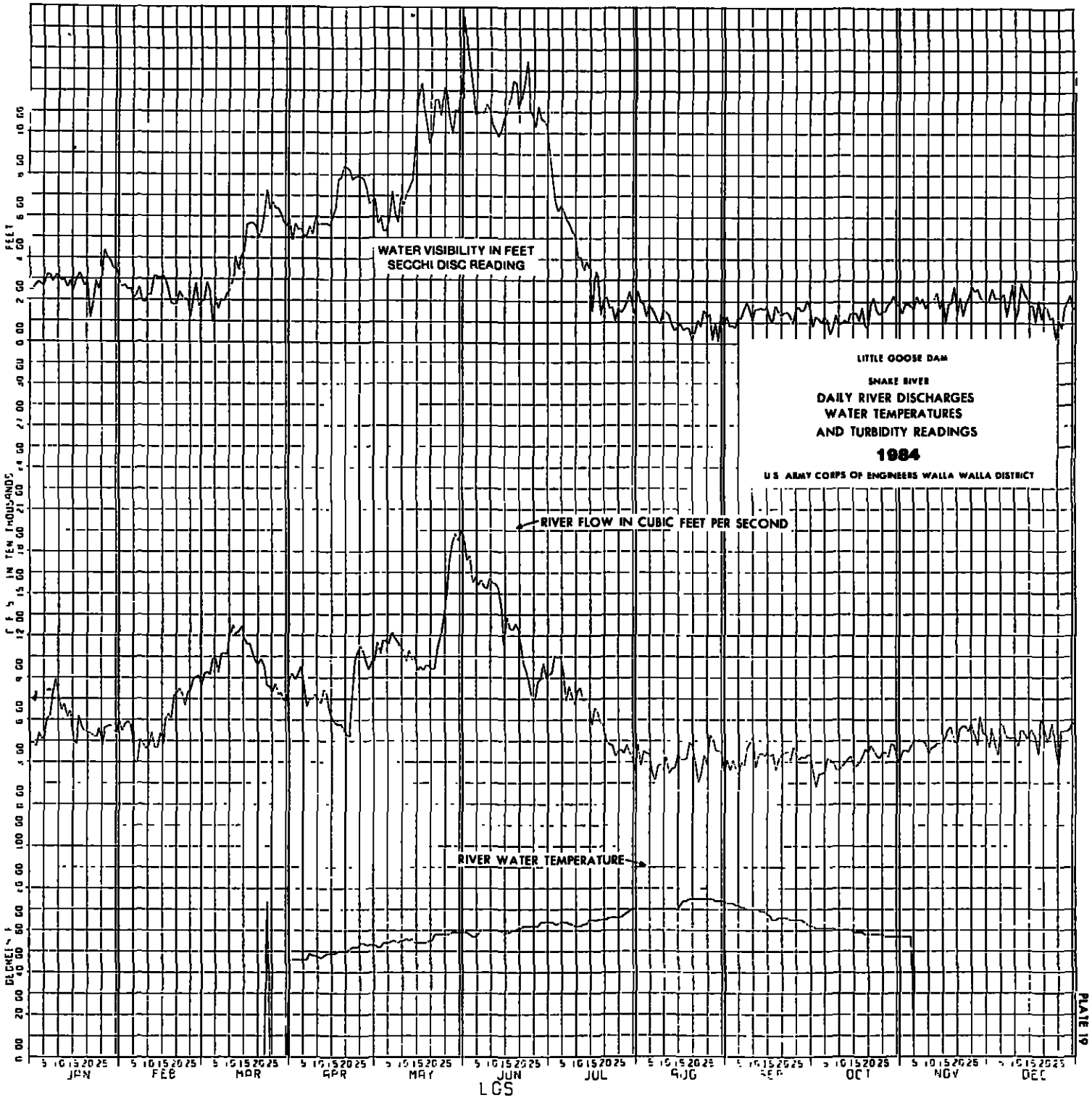

LITTLE GOOSE DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LGS

PLATE 19

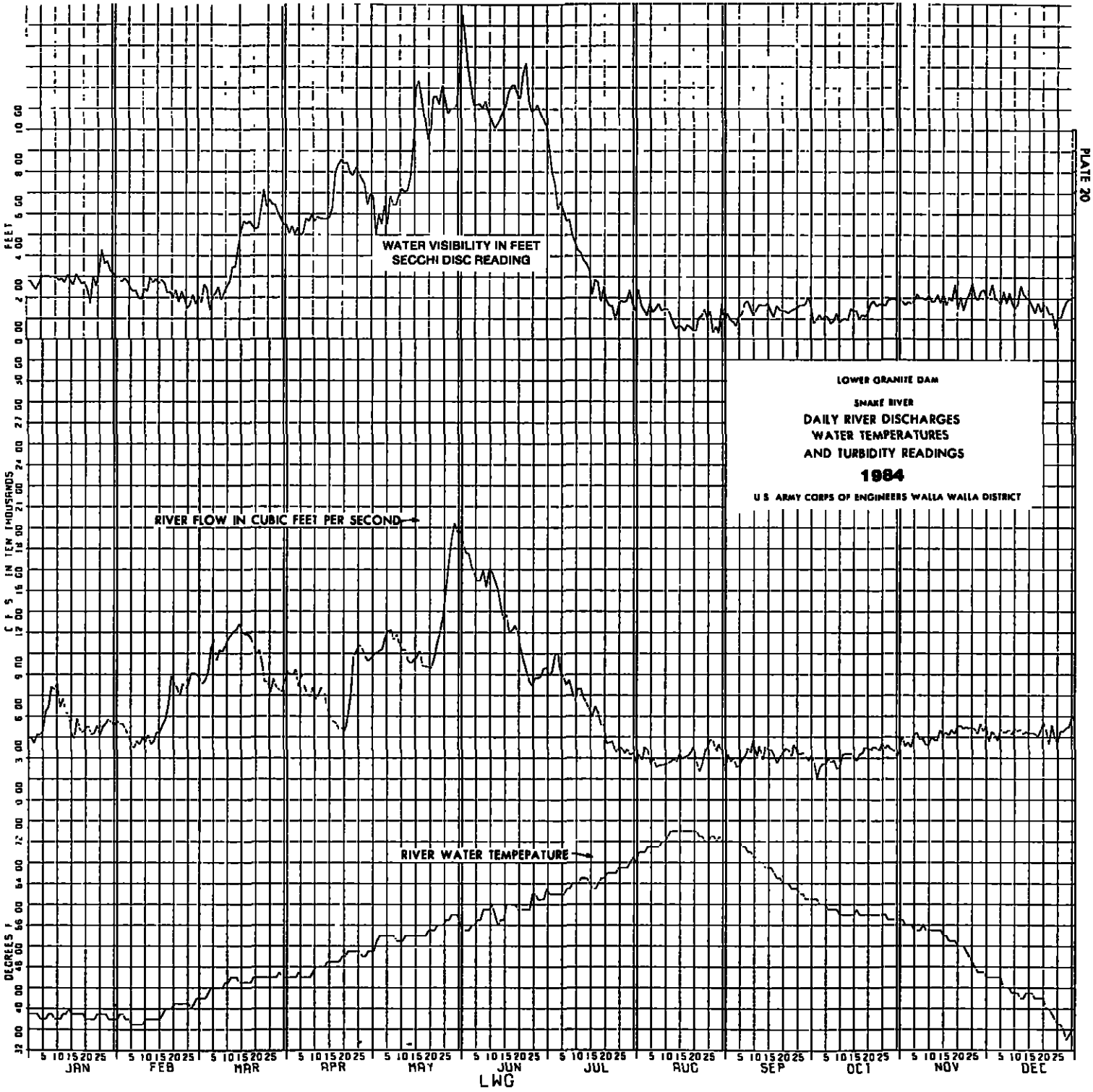
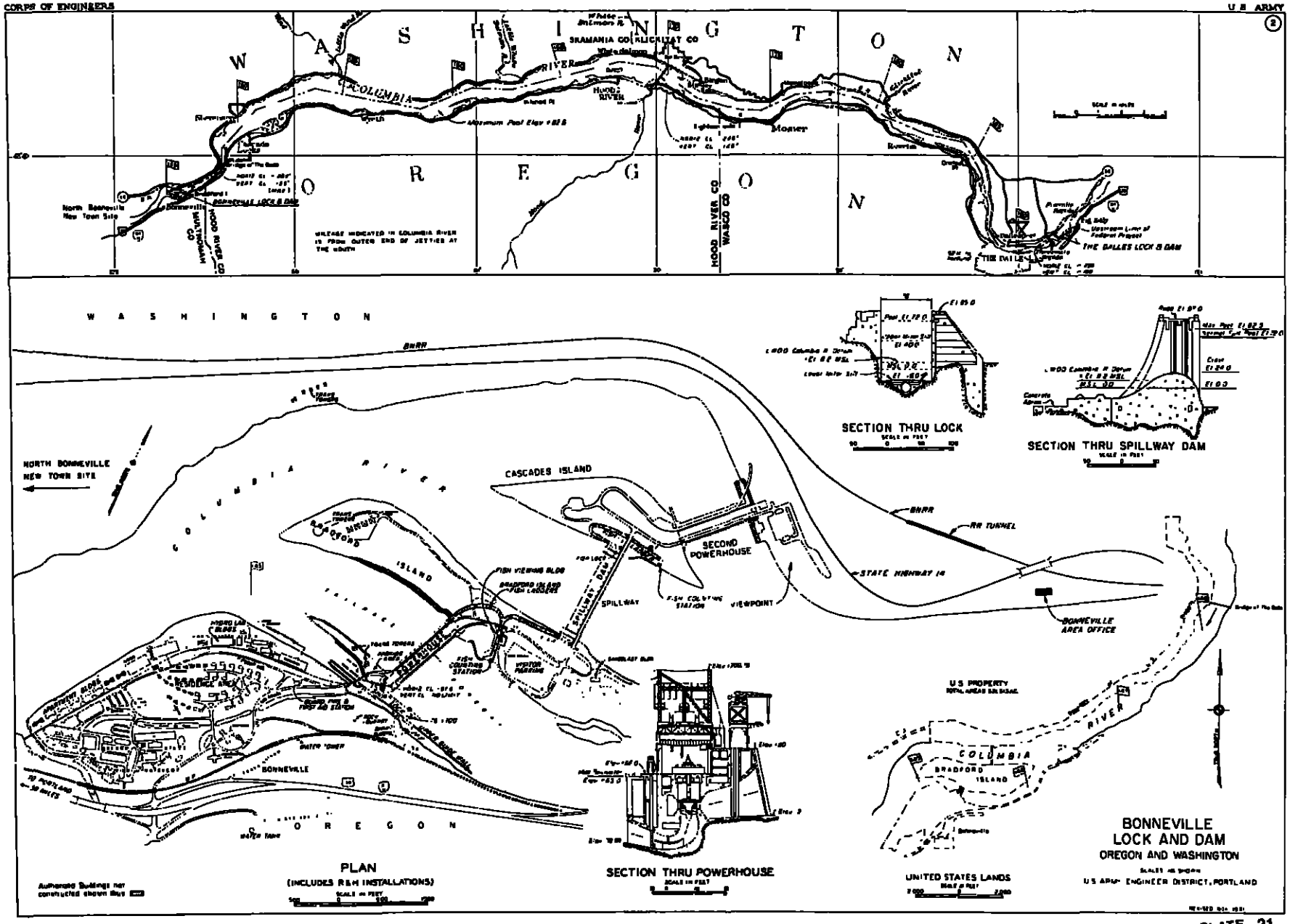
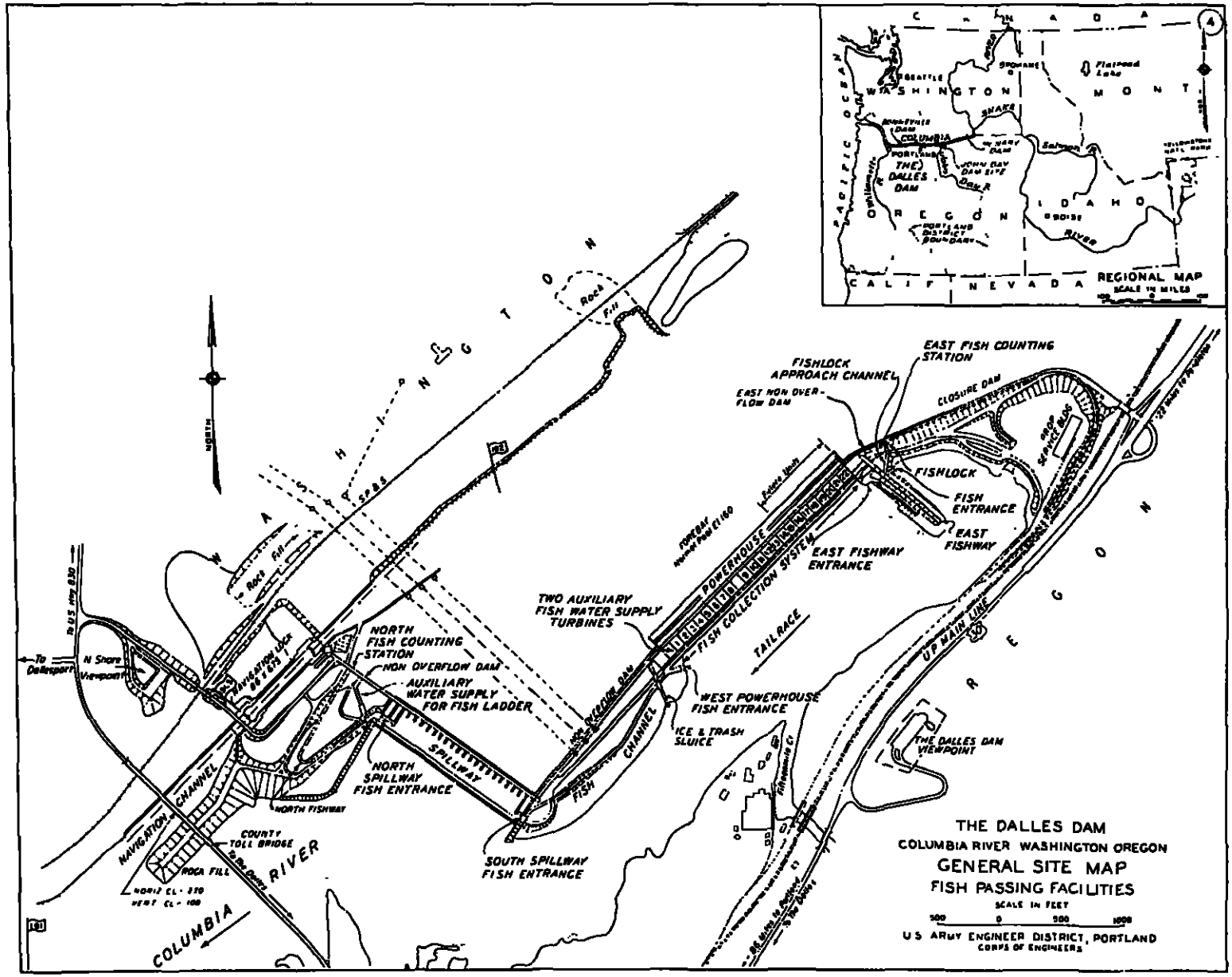
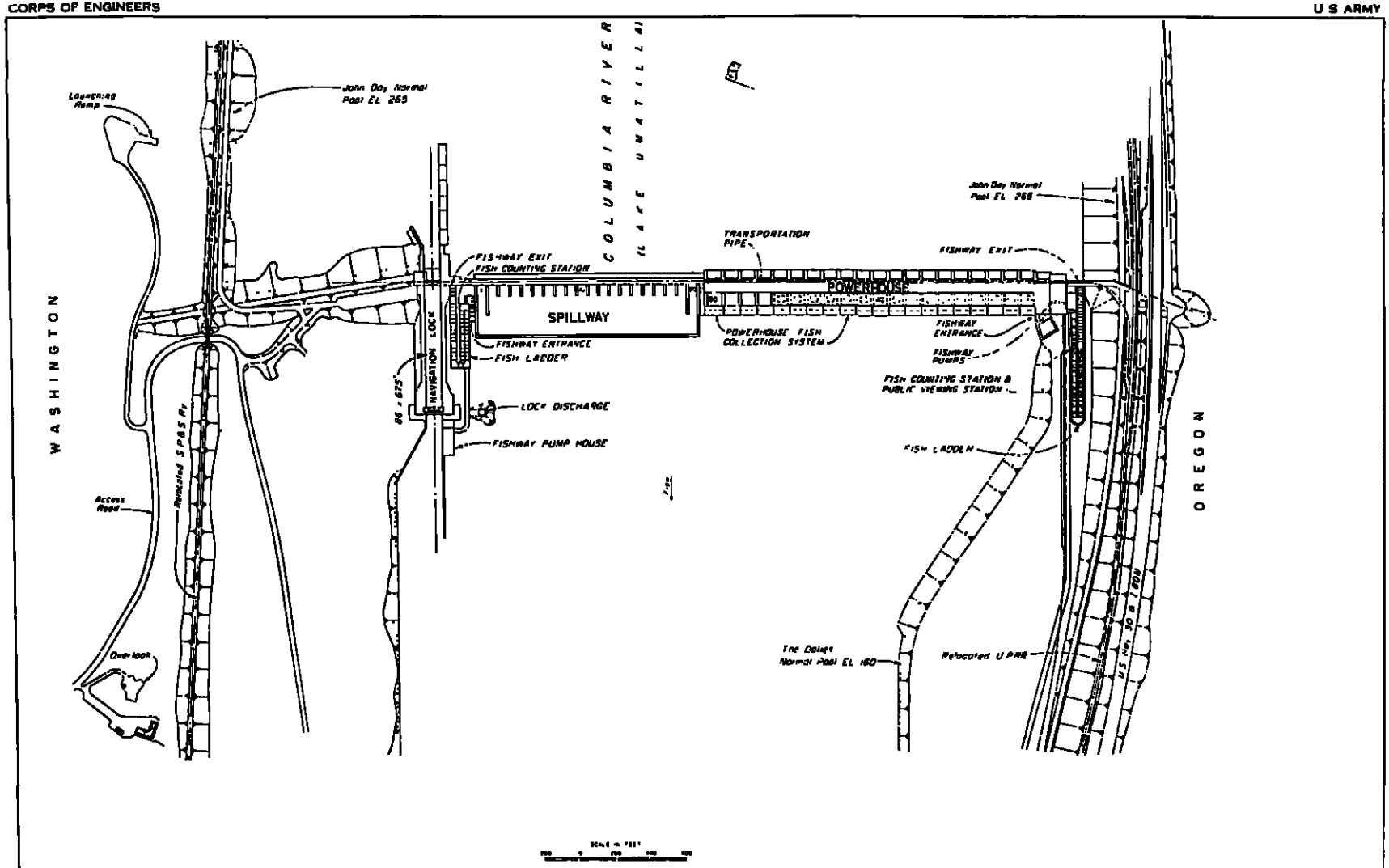

LOWER GRANITE DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1984
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPEPATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LWG

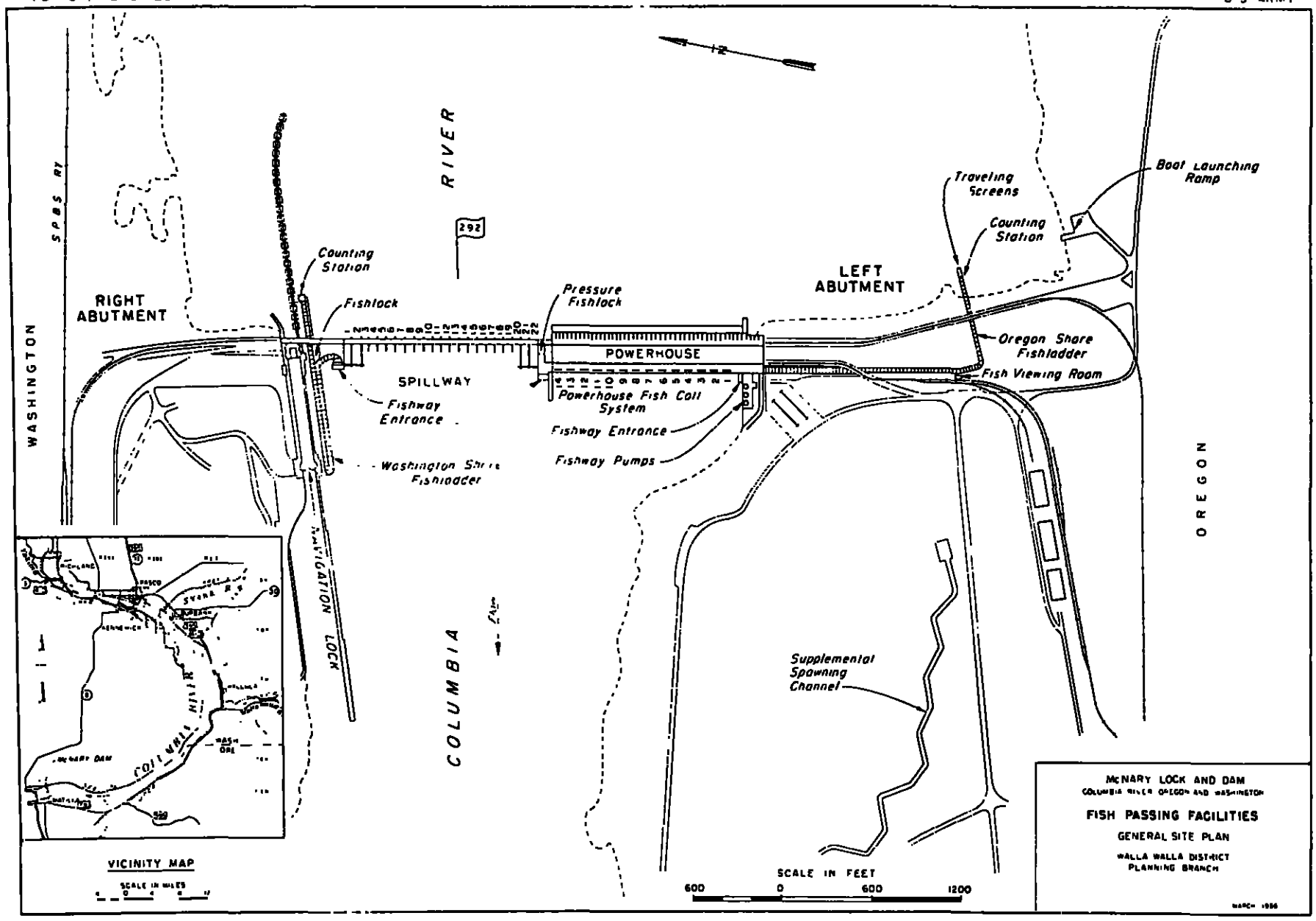
PLATE 20


WASHINGTON
OREGON
COLUMBIA RIVER
HOOD RIVER
Mosier
THE DALLES
THE DALLES LOCK & DAM
North Bonneville New Town Site
BONNEVILLE LOCK & DAM
MULTNOMAH CO
HOOD RIVER CO
WASCO CO
SECTION THRU LOCK
SECTION THRU SPILLWAY DAM
NORTH BONNEVILLE NEW TOWN SITE
CASCADES ISLAND
SECOND POWERHOUSE
SPILLWAY
VIEWPOINT
STATE HIGHWAY 14
RR TUNNEL
BNRR
BONNEVILLE AREA OFFICE
U.S. PROPERTY
BRADFORD ISLAND
BONNEVILLE
PLAN
(INCLUDES R&H INSTALLATIONS)
SECTION THRU POWERHOUSE
UNITED STATES LANDS
BONNEVILLE
LOCK AND DAM
OREGON AND WASHINGTON
U.S. ARMY ENGINEER DISTRICT, PORTLAND


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



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


WASHINGTON
SP&S RY
RIGHT ABUTMENT
Counting Station
Fishlock
292
RIVER
SPILLWAY
Fishway Entrance
Washington Shore Fishladder
NAVIGATION LOCK
COLUMBIA
Pressure Fishlock
POWERHOUSE
Powerhouse Fish Coll System
Fishway Entrance
Fishway Pumps
LEFT ABUTMENT
Traveling Screens
Counting Station
Boat Launching Ramp
Oregon Shore Fishladder
Fish Viewing Room
OREGON
Supplemental Spawning Channel
SCALE IN FEET
600 0 600 1200
VICINITY MAP
SCALE IN MILES
McNARY LOCK AND DAM
COLUMBIA RIVER OREGON AND WASHINGTON
FISH PASSING FACILITIES
GENERAL SITE PLAN
WALLA WALLA DISTRICT
PLANNING BRANCH
MARCH 1986

CORPS OF ENGINEERS

U S ARMY

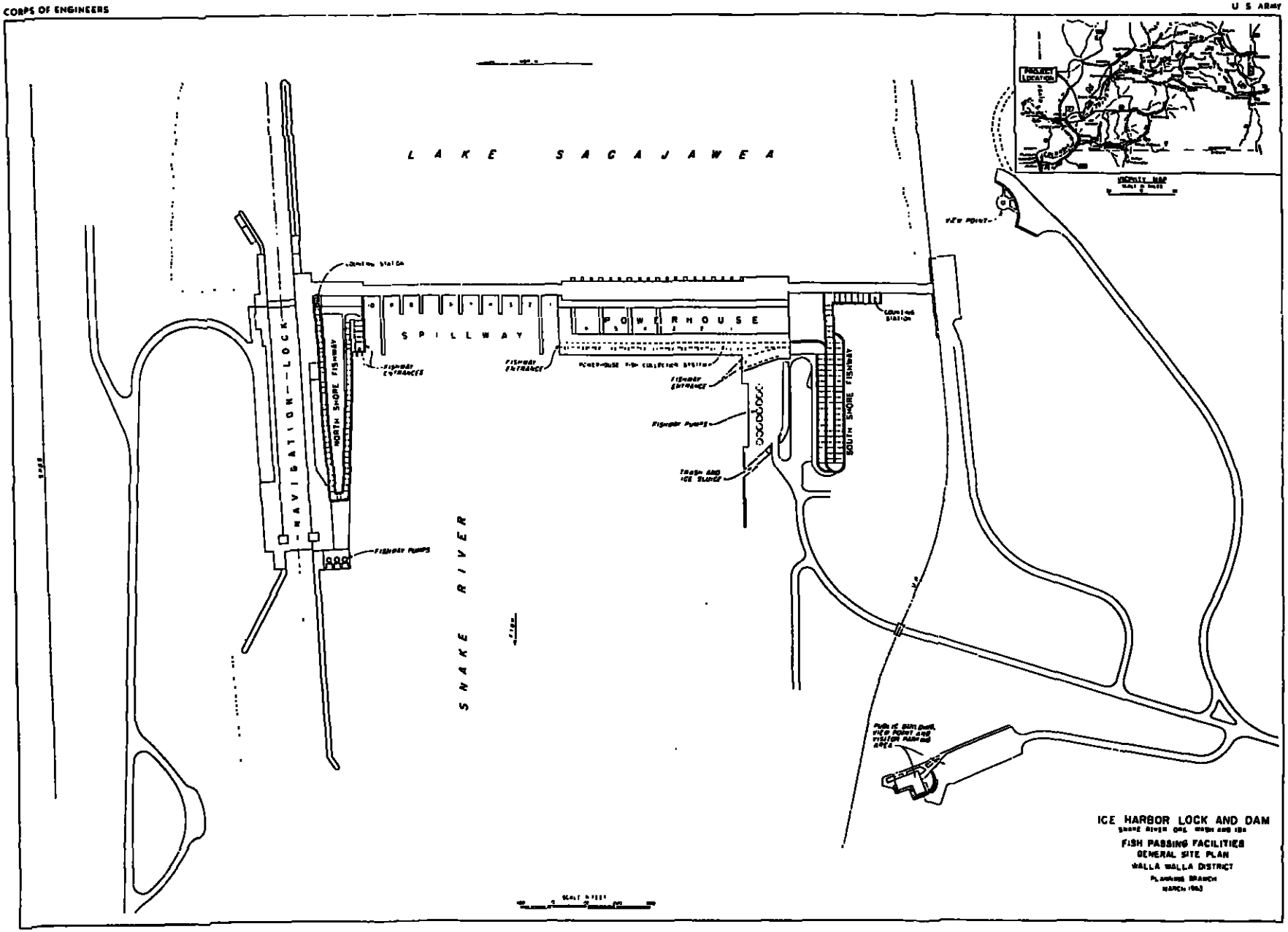


PLATE 25

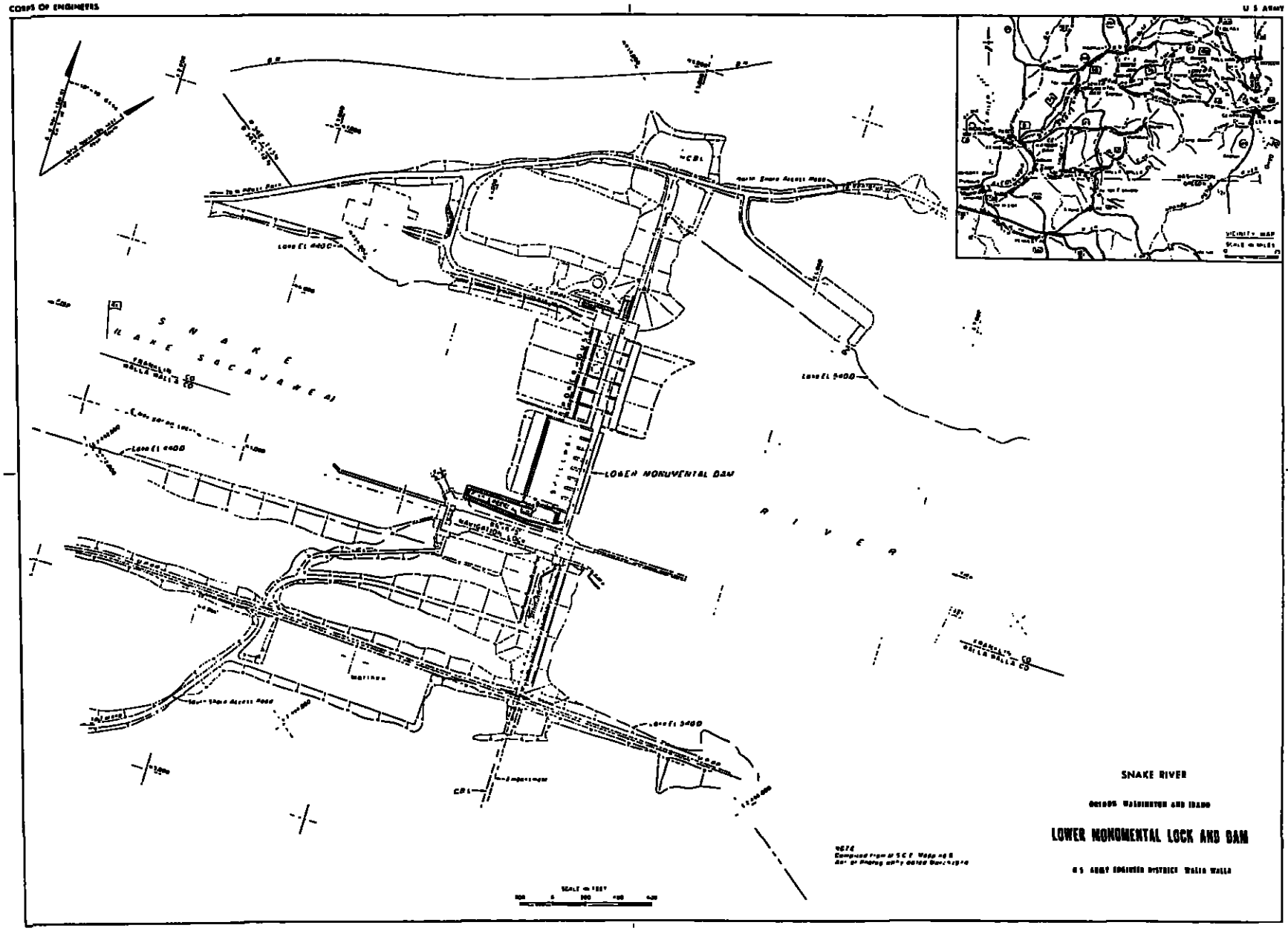
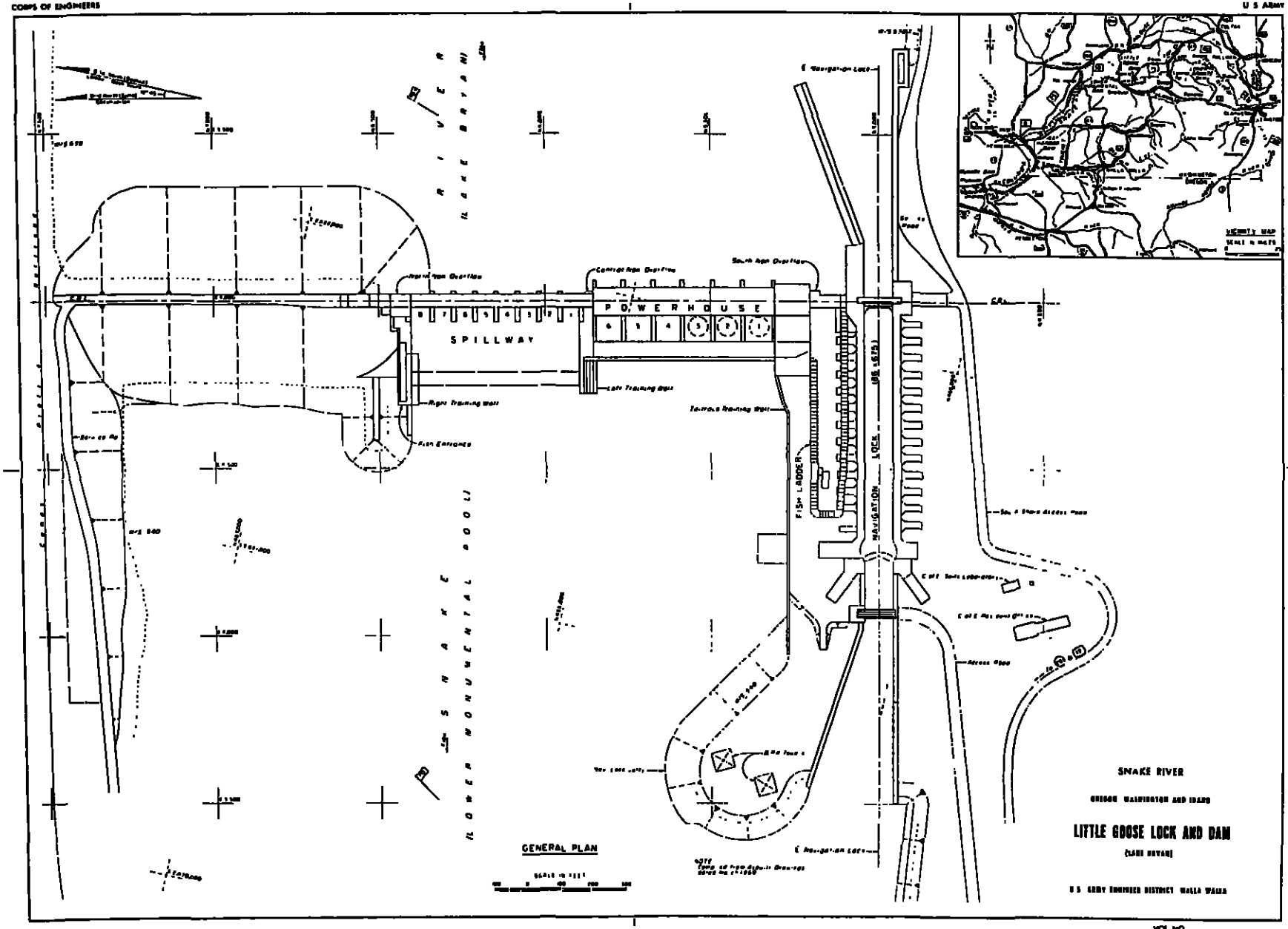
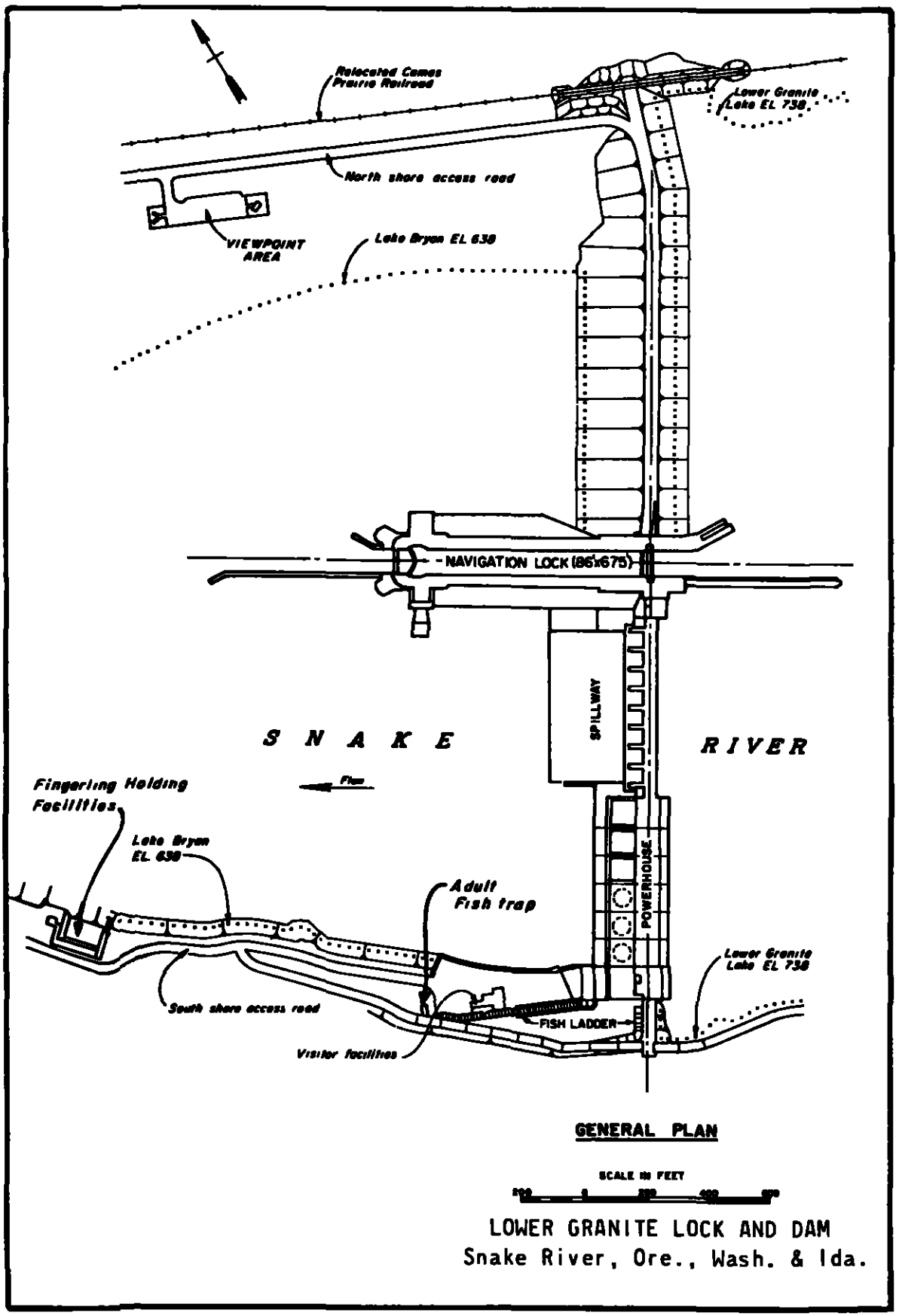

CORPS OF ENGINEERS
U S ARMY
SNAKE RIVER
LOWER MONUMENTAL DAM
LOWER MONUMENTAL LOCK AND DAM
U S ARMY ENGINEER DISTRICT WALLA WALLA
VICINITY MAP

PLATE 26


SNAKE RIVER
(LAKE BRYAN)
SNAKE RIVER
(LOWER MONUMENTAL POOL)
POWERHOUSE
SPILLWAY
FISH LADDER
NAVIGATION LOCK
(EL 675)
VICINITY MAP
GENERAL PLAN
SNAKE RIVER
OREGON WASHINGTON AND IDAHO
LITTLE GOOSE LOCK AND DAM
(LAKE BRYAN)
U S ARMY ENGINEER DISTRICT WALLA WALLA



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

GDG-1-0-1/14